2020 Exchange Filings

Written Public Comments to the
Green Mountain Care Board
May 13, 2019 to August 25, 2019

Note: Redactions have been made to protect consumer information

Green Mountain Care Board
2020 Proposed VHC Rates Public Comments
5/13/2019 – 7/25/2019 at 10:00 am

1. Laura Williams McCaffrey

To the GMCB regarding the proposed rate increases: I fell the other day in a way that I won't detail — let's just say it was a Keystone Cops moment that ended with my chin hitting the cement floor. The pain vibrated through my head. After I pushed myself up, I discovered I was dripping blood. In the bathroom, I surveyed my face: a growing lump on my chin and a small split. My first thought? That cut could use a stitch or two. My second thought: $7000 deductible.

I'm the granddaughter of a doctor, one who practiced in Morrisville in the 1950s-1970s. People, often local farmers, showed up at his home office. They didn't have insurance. They sat and chatted. He sewed or cleaned or offered medication. Maybe they all ended up at Copley Hospital. He told them what his services cost, and they paid what they could: eggs, chickens, fire tongs. Those days are long gone, but that's the kind of health care I had as a kid. It could be a little DIY. Surveying my face, I suspected a couple stitches at urgent care after 5pm would mean, what, $500? $1000? More? Even if I called, they wouldn't be able to tell me in advance. I've tried asking about cost at my doc's office, and no one seems to know what anything costs. Or if anything is "in network." I asked my insurance company about this with a little sarcasm, "What am I supposed to do? Take my phone into the office visit and call you?" The chipper response from the insurance company rep: "That's a great idea!" I had a vision of my annual gynecological exams, my legs in the stirrups. *Wait with that speculum, let me just call the insurance company.*

As freelancers and adjuncts, my husband and I get our health insurance off the health exchange. Currently, we have subsidies, but we won't receive these anymore once we're a "couple" instead of a "family," which will happen when our daughter graduates college. The least costly plans on the exchange, ones we would essentially never use except for annual check-ups, have premiums that are approximately 12%-18% of our monthly income. They have $5000-$7000 deductibles for one member of the family (approximately 14%-20% of half our yearly income), 11,000-15,000 for a family or couple (approximately 16%-21% of our combined yearly income). Most aren't considered high deductible plans. Like many middle class families, we're making no-win choices. Pay for health care? Help our kids pay for college? Save for retirement? For a while I thought we could only afford two of the three. Now, it's starting to seem we can only afford one. A paltry retirement savings or health care that covers very little, folks? Which will it be?

Before anyone starts complaining about the ACA and Obamacare, I'll state that I also lived through that era. When we made too much for the state health care plans, we spent years without one. [redacted] It was the only place that could tell me what their services cost ahead of time. I prayed to gods I didn't believe in that we wouldn't suffer some kind of tragic emergency and have to go to the hospital. What did I learn from that time? The "free market" doesn't work very well when you can't walk away from the negotiating table. If a car's too expensive, you don't buy the car. This is what puts pressure on companies to keep costs down. If the cancer treatment for your kid is too expensive, you…?

Yeah, we know what you do. You put it on credit cards. You start a Go-Fund Me. You beg your family members for help. You file for bankruptcy. I don't have answers. I'm frustrated that our health care 'industry' seems ill-prepared to make comprehensive changes, and frustrated our politicians don't have what it takes to force them to change since they won't take steps themselves. I'd opt out entirely if I could. In the meantime, I decided on a DIY approach with the cut on my chin. I cleaned it out with a diluted hydrogen peroxide mixture, and I applied butterfly bandages. I suspect I'll have a scar.

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2. John Lincoln

Subject: BCBS rate increase

As a senior citizen, I cannot afford any more insurance rate increases. Maybe the allowed cost of medical procedures billed to the insurance co. should be investigated. Over $5000 for an ER visit with just one CAT scan and nothing else? Really? Sure, Medicare and BCBS paid it, but I have to pay the premiums. The ACA has turned hospitals into "For Profit" businesses that are supported by ever increasing insurance premiums.

3. Janet Smith

The rate hikes for health insurance are outrageous, as are the costs of drugs. [eg. the new request talks about the $40,000/year cost for arthritis medication. Arthritis can be managed with proper diet, and inexpensive Ayurvedic treatments.]. The reason health insurance costs so much is that it is really just drug management run by standard Western Medicine programs. If Ayurvedic, homeopathic, naturopathic, and Chinese medicine were covered instead, then health would be created, disease prevented, and costs would be very low. If people do not take responsibility for their own health [eating properly, exercising properly] and their own health care expenses, then everyone else shouldn't have to pay for their problems [ie. the government = other citizens]. Let the insurance companies and drug companies get the same annual cost of living increases that minimum wage earners get!

4. Ericca Campbell-Burdick

My insurance company is: I don't have health insurance.

I am a 42 year old single mother, working full time (plus!) for a small employer who doesn't offer health insurance. I have been working since I was 14 years old. [redacted] I have no insurance as a result of working really hard to better myself and set a good example for my kids. I worked "too hard" and lost coverage thru VT Medicaid. I cannot survive without [redacted], so I utilize the Bennington Free Clinic (absolutely amazing volunteer staff!). I know I need to buy insurance and have been trying to figure out how I can afford to do so (I genuinely believe prices are currently unaffordable and am happy to discuss my income and budget). To hear prices will likely go up just increases my anxiety. I have many days where I feel like I should just quit my managerial position ($50+k per year) and get a minimum wage job.....then I'd get food stamps and fuel assistance and subsidized housing AND HEALTHCARE. This country and state need to wake up and realize that they are inadvertently encouraging folks to stay dependent upon social welfare programs because everything costs so darn much it's often not worth working harder and earning more!

5. John M. Riley

Topic: Health Insurance Rate Review

I would be interested to know your reaction to the recent absurd poll I received from Blue Cross – the worst push poll I have ever seen! The only acceptable opinion is "you are doing a great job". I sure hope they do not use the results to justify an increase!!

Here's the poll https://www.surveymonkey.com/r/BCBSVTBenefitsAdministratorSurvey

6. Thomas Ryan

I appreciate having somewhere to share my thoughts and distress over the state of the insurance industry, particularly here in Vermont. I carry the insurance for my family, which includes myself, my husband and two children. I work for a small family-owned business in So. VT (the business has less than 15 full-time employees). They cover 50% of the insurance premium with employees picking up the other half. They have chosen BCBS of VT because of the rates offered to them, from what I'm told. I believe we have the Silver Plan. Just about $9000 is taken out of my paycheck over the course of a year to cover my portion of the premium. I have an in network family out of pocket deductible of $15,000 and a per person $7500 out of pocket deductible. That means every time one of us is sick our insurance barely covers the treatment. My daughter was recently sick and between the bloodwork and doctor's visits, we were billed over $500. That didn't count the cost of prescriptions. How does a person afford this? What if there was a prolonged illness in the family? Should I be pacified by the fact that I only have to come up with $15,000 out of my own pocket to pay for it, before insurance contributes (on top of the $9,000 I'm paying in premiums)? And, now the only two insurance companies allowed to do business in VT are propositioning double digit rate hikes for next year? How can small businesses continue to offer insurance for their employees? Aren't you driving businesses out of this state? Vermont is currently listed as one of the most expensive states to live in. We have a problem with graduates returning to the state of Vermont to work and live. How does raising the insurance rates like this change these problems? My family and I are struggling financially and my husband and I both have good jobs. This is not sustainable for us and I can't imagine for others. We have discussed moving and with insurance rates increasing, this topic will come up again. We have to figure out a way to be more financially secure for the well-being of our family. Vermont is doing its citizens an injustice by only having two insurance companies doing business here. There is a lack of competition and no reason for them to work to keep their rates manageable. Something has to be done not only for the citizens of this state, but for the businesses as well. Please look at the big picture here and figure out a way to offer more affordable health care. The current state and predicted future is not viable for those living here. Again, thank you for providing a means to share these concerns.

7. Neville Marc Berle, Vermont Workers Center

Greetings, I'm a resident of Montpelier living on [redacted] per month. When considering raising premium rates to Blue Cross, Blue Shield and other basic health coverage, I urge you to consider all those who, like me, are living at or below the poverty line. Please don't make us have to choose between minimal healthcare and basic necessities such as food and rent.

8. Jane Smith, South Burlington

I get my insurance from: Employer (self or household member)

MVP is the worst health insurance provider I've ever had. If anything they should be charging less to match the quality of their garbage coverage. My plan includes co-pays, plus a $1000 deductible, plus $1000 co-insurance on top of the premiums coming out of my paycheck. Thanks to the UVMMC monopoly, the majority of tests and services are billed as hospital outpatient visits which can rip through that $2,000 in the blink of an eye. And if your doctor writes you a Dispense As Written prescription, you risk getting hit with a $350 penalty for not going with a generic, even if the brand is on the plan formulary - the provider is meant to say something more than "DAW" on the prescription for the formulary price, but no providers know that (and why should they??). It's absurd! When I think about plans that cost even more than the one I have against the cost of living in Vermont in relation to the

average pay rate in Vermont, I want to vomit. Aren't we supposed to be making health care *more* accessible as a "progressive" state?

9. G. Richard Dundas, MD

Insurance companies are wasteful of our health care dollars. Please tell them that you are done raising rates until their overhead is less than original Medicare. ANOTHER REPORT FROM THE BENNINGTON FREE CLINIC Almost every week I see patients at the BFC with heartbreaking stories about their health care. Last week it was a patient who has so many medical problems that she could keep an army of specialists very busy. She doesn't qualify for Medicaid because her husband works and their income is above the limit. Recently, they have obtained health insurance through the husband's job, but it has a high deductible and they will have to pay thousands of dollars out of pocket before the insurance pays a penny. Therefore, we cannot send her to the endocrinologist [redacted]; we cannot send her to the cardiologist [redacted]; we cannot send her to the gastroenterologist [redacted], or the rheumatologist [redacted], or the dermatologist [redacted]. Earlier this year, she was hospitalized at SVMC and received a bill that she will never be able to pay. She cannot afford many lab or imaging tests. She cannot afford many of her medicines even though they are very important. She has a right to decent health care, but she can't get it in the USA. She is one of millions in the country who are uninsured or underinsured. It is estimated that over 40,000 people die each year because they lack insurance and they delay care. Nearly one in three rural Americans struggle to cover medical expenses. Insurance companies don't care; they are focused on making a profit. Why do we tolerate this? "Improved Medicare for All" is bound to be a better alternative. (Letter: Paying price for lack of health insurance)

10. Colleen Racenet

I am against any increases in insurance premiums next year. We pay the full price of $852 per month for two of us with a $15,000 deductible for an MVP bronze plan. We receive no subsidy. This is the only plan we could afford and a 9% increase will be too much to pay. We rarely go to the doctor because we have a hard time getting an appointment and we have to pay for the entire visit if we are sick. Fortunately we are healthy but the cost of insurance is too high. This healthcare is not affordable. We will most likely have to drop our insurance if the premiums are increased this much.

11. Eric Burz

Hey, Don’t do it. I don’t have any more money, and we’re about to dive head-first into another recession thanks in large part to a student debt crisis that is crippling our nation’s ability to buy housing and stimulate a false economy filled with nothing but retail and entry-level jobs for which most graduates somehow aren’t even qualified. There are my reasons.

12. Susan S., Cabot

I get my insurance from: Vermont Health Connect
My insurance company is: Blue Cross Blue Shield of Vermont

Health insurance is already our biggest monthly expense. With the proposed increase, our monthly health insurance premium will exceed our monthly mortgage payment and lease payments for two vehicles combined.

13. Hillary Ainsworth, Milton

Please don't let them raise the insurance rate. The cost of plans is so high, and it only covers preventive care. If anything else happens we are paying out of pocket. I can't afford my healthcare plan alone let alone the deductibles that go with it! The gauge for affordability is flawed. They determine affordability on your total household income being able to pay a SINGLE plan. Of course we can pay a single plan but we need a family plan! I feel and broke my hand this January and the first thing I thought when I stood up was: " I cant afford to go to the hospital " my co pay is $13k!! That's outrageous. My husband and I work hard, and we are the prime example of how this healthcare system is flawed. So raising rates will not help our family and lots of others in any way!

14. Michelle Emery, Manchester

It is immoral to increase insurance rates/premiums/costs at a higher rate than wages/cost of living. It isn't sustainable either. If you want to increase your bottom line, cut executive salaries. Full stop.

15. Joanne Ferris Forkey, Business Manager

As an administrator of the health plans my company offers, which is every plan on the exchange, I have received many complaints from our employees regarding health insurance rates and plan coverage. I would like to know how GMCB thinks regarding this issue when considering the high digit rate increases each year. The majority of our employees either choose the Silver or Bronze plans available depending on carrier cost. However, those plans still do not cover their basic need without cost sharing and many of the employees still refuse to see a doctor when they should for fear of the out of pocket cost when they say they can barely afford the premium costs due to cost of living. The deductibles are outrageous based on the average earnings of Vermont employees. WE pay our employees well above the minimum wage and still the health care cost is a burden to them. The company contributes to the cost of the premium as well and it still makes it unaffordable, especially for a family. The company spends on premium share approximately $110k a year for 20 people mostly single. The labor crisis in this state is being addressed with new incentive programs, how about incentives with health care. Better yet, how about the tobacco dollars we received from settlements go towards a health care fund to help reduce premium costs.

16. Madeleine Morgan, Calais

I get my insurance from: Vermont Health Connect
My insurance company is: MVP

I can already barely afford my premium, which covers only the bare minimum of my medical care. An increase in premium rates will represent a significant hardship for my family.

17. Theodore Fetter, Essex

My insurance company is: I don't have health insurance.

Rate increases make a bad situation much worse.

18. Theodore Fetter, Essex

My insurance company is: I don't have health insurance.

Rate increases make a bad situation much worse. I can't afford any health insurance. I have tried 3 times in the past and was briefly (months) insured each time, and 3 times the system failed and I walked away. I won't reenter the insurance market and I'll remain uninsured until the system

dramatically changes. I don't have a doctor/pcp and I occasionally pay out of pocket to see a dentist. Hopefully we'll see structural changes that forever end the private/for-profit health insurance system. I'm a young, healthy person - a father, youth sports coach, laborer - and I cannot afford to spend the time or the resources needed to give another chance at being insured. The only justification I could see for allowing ANY rate increase would be a twisted strategy that sees increasing rates as a way to exacerbate an already unsustainable, failing system thereby accelerating its eventual demise. But the costs in terms of the financial and physical health of our fellow Vermonters is unacceptable. I know this comment alone won't move the needle, but I nonetheless urge you to either incrementally or wholesale abandon the private insurance system and move instead to universal healthcare as a public right. Thank you for your consideration.

19. Nicole Giard Jeter, Essex Junction
I get my insurance from: Employer (self or household member)
My insurance company is: Blue Cross Blue Shield of Vermont

As prices increase our ability to afford sufficient coverage decreases. As each year passes and the rates go up, we have seen our deductible and out of pocket totals increase significantly as we find ourselves choosing plans to continue to fit our budget as income has not increased st the same rate as insurance rates.

20. Ellen Cronan, Cornwall
I get my insurance from: Vermont Health Connect
My insurance company is: MVP

I presently pay $5,113.44 annually for my health insurance. It is INSURANCE. A hedge against the accumulation of PFAS or radiation in my body leading to cancer. A hedge against an intoxicated or intexticated driver hitting me on the roads. A hedge against a misplaced foot on an icy sidewalk in town. It does not cover MY daily health needs for correctional lenses (approx. $700/year) or dental care (a human health requirement costing me approx. $400/year unacknowledged by our present "healthcare" system). It is $5113.44 that I pay into a system that has paid for 0 (ZERO) of my personal healthcare this year. I do that because I believe in paying into a system where I start as a net loser and as I age, become a net gainer. A system so convoluted that I have been putting off a basic physical because going to the doctor is an unpleasant event, primarily because of the way our healthcare insurance works.
Now the insurance companies want me to pay an additional $400. The more the system is pushed, and by that I mean asking the net losers to pay more each year, the less people will participate in health insurance. They will take their chances and gamble that they will remain healthy. Fewer and fewer 27 - 39 year olds will buy health insurance causing the system to fail.

The public cannot afford the inefficiencies built in to the present system. We need a fix and it should start at the top! Maybe healthcare insurance company CEO salaries should be linked to the percentage of 30 year olds in the country with health insurance?

There are no real incentives for insurance companies to create an efficient, workable and reasonably priced product. The Green Mountain Care Board has the duty to broker a system that is more affordable for the public. Please do your job. Do not rubber stamp an increase. Do not listen to the bogus and incomplete numbers that are displayed by the highly paid executives and communicators that come before you without asking difficult questions. Those questions need to be personal, ask about salaries and CEO perks, ask about paperwork requirements, ask about client retention and ask about corporate profits. Our system is failing

21. Betty Jean Charette, Woodford
I get my insurance from: Vermont Health Connect
My insurance company is: MVP
Please consider today's cost of living before any increases in healthcare.

22. Luke Rackers, Montpelier
I get my insurance from: Employer (self or household member)
My insurance company is: Blue Cross Blue Shield of Vermont
Why such a huge increase??? If this is approved, any small pay increase that I may get from my employer this year will be completely wiped out. Because pay levels are still stagnant, an increase of this size could even take income away from me and others. We already struggle to pay our bills each month. Are the executives and management at BCBS struggling to pay their bills? My guess is not. If this hike goes through, I may have to decide between paying for health insurance or paying for the one class per month that I am currently able to take at UVM. So, essentially, for my household, this would be a reallocation of funds away from education. PLEASE say no to this rate hike!

23. Jennifer Moore, Burlington
I get my insurance from: Employer (self or household member)
My insurance company is: Cigna
Health insurance rates are already out of control. The insurers ask for significant rate increases every year that are not tied to inflation. Vermonters cannot afford higher insurance costs year after year.

24. Steve L'Heureux (Comment on BCBSVT filing
Absolute [redacted], when was the last time any employee or self employed person been able to get a 16% increase!!!! [redacted]. Rather, let's impose a freeze on medical charges. This is insane. The middle and lower classes have been under attack for far too long. This madness must end!

25. Steve L'Heureux
No, absolutely not, the Middle and lower classes cannot take any more hits!!!!!!! This is MADNESS!!! When is the last time an employee or even a self employed person could get anything like a 9 to 23% increase in income??!! You have to be kidding me? You "people" must be coming from employment in corporations who pay for all your health care, otherwise, if it came out of your pocket, you'd be singing an entirely different tune! You governmental "tools" are so out of touch it's not even funny, in fact, it's disgraceful, and you should all be shameful, as well as fired. You are fueling a revolution with this sort of economic attack, you can't see it because you don't think beyond the next day, but trust me, I can see it coming, and it's gonna be very ugly.

26. Sarah Freeman, Brattleboro
I get my insurance from: Employer (self or household member)
My insurance company is: MVP
My premium and copayments are already so high that I can barely afford to go to the doctor. These increases will make it even less affordable for myself and many others to access healthcare.

27. James Hoepker, Moretown
I get my insurance from: Employer (self or household member)
My insurance company is: MVP

If I am not mistaken, the premiums went up this past year as well? Two years in a row of increased rates is not acceptable. I am an active, healthy person, who takes great steps to stay fit and avoid needing to rely on the medical healthcare profession unless it is an emergency. Yet every year, I am punished to pay premiums, and then STILL have to pay out of pocket if something out of my control happens due to deductibles. These insurance companies need to take into account who has coverage, and reward the people who take care of themselves and do not drain the system

28. Name: Almy Landauer, Burlington
I get my insurance from: Employer (self or household member)
My insurance company is: Blue Cross Blue Shield of Vermont

The rate hike requested by both BC/BS and MVP are going to be a huge burden on employers, employees, and the entire VT economy. As you may have read recently, our job growth is nil. The cost of living in VT is high, even compared to our neighboring state of NH. One of the reasons for the sluggish economy and flat wages in VT is health insurance costs. I have seen over and over that employers offer part time jobs designed specifically so they do not include health care benefits. So many Vermonters work multiple part time jobs because of this, just to make ends meet. To add this huge increase to the current job market and cost of living will be so detrimental! Their increase should be tied to COLA, like most of the rest of us. Instead, admin costs and bloated top salaries must be cut. This situation demands drastic measure. Please do what you can to stop this upward spiral. I will guess that for me personally, this will mean no raise next year, or a decrease in benefits, or both, so that my employer can absorb the increase. And I would counted lucky if that is all the repercussions I suffer. It will be far worse for many.

29. Name: Almy Landauer, Burlington
I get my insurance from: Employer (self or household member)
My insurance company is: Blue Cross Blue Shield of Vermont

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30. Rebecca, Vernon
I get my insurance from: Vermont Health Connect
My insurance company is: Blue Cross Blue Shield of Vermont

I don’t have enough money to support my household, how can I continue to pay for increases of health insurance?

31. Name: Jaclyn Bristol, Guilford
I get my insurance from: Employer (self or household member)
My insurance company is: Blue Cross Blue Shield of Vermont

It means I won't be able to afford insurance and my family will suffer.

32. Name: Susan Andrew, Warren
I get my insurance from: Vermont Health Connect
My insurance company is: Blue Cross Blue Shield of Vermont

I believe premium prices and deductibles are making insurance unaffordable for most Vermonters who pay their own insurance premiums. The Affordable Care Act has failed in that respect. There is no such thing as a 'free' annual checkup either because if you see your doctor at your annual and mention ANYTHING that bothers you, they bill you for a 'diagnostic' exam and associated tests, even a blood test.... so now you pay a few hundred dollars for your annual just because you spoke up about an issue. The cost of care is actually encouraging people to NOT go to the doctor for fear of high out of pocket costs. Raising the premiums will ensure that people stop buying health insurance.

33. Melinda Treftz, Waterbury
I get my insurance from: Employer (self or household member)
My insurance company is: Cobra

The proposed healthcare cost increase will make it more difficult for us to purchase healthcare insurance.

34. Kristina, Vernon
I get my insurance from: Vermont Health Connect
My insurance company is: Blue Cross Blue Shield of Vermont

Another increase to insurance premiums will again keep me from saving towards my future (ie buying a home, having children and saving for retirement).
The struggle of paying rent, utilities, car payments and insurance, and other necessities is becoming more challenging when premiums are already $600 to $700 a month and cover very little until high deductibles are met. I don't know any working class person who gets a 15% raise in wages. If Vermont keeps allowing raises of this degree more young people will leave the state or maybe we should just quit our jobs and let the state pay our way as so many come to Vermont to do.

35. Lindsay Kill, Winooski
I get my insurance from: Employer (self or household member)
My insurance company is: Blue Cross Blue Shield of Vermont

Raising premium prices by 8.5% to 15.6% on average for consumers in one year is not sustainable. It costs more for employers, more for the citizens, and for what? To pay the providers more? What Vermont insurers should be doing is breaking the cycle of price fixing in health care. If you want to be innovative, stop setting prices based on prior year's utilization. Otherwise we are in a never-ending cycle of price snowballing. Find a way to set prices based on lack of utilization or the proportions of healthy people. Better yet, make your in-network agreed upon pricing public knowledge. Let the people decide where they will shop for healthcare with complete transparency, empowering them to know the price difference of the service at UVM vs. Gifford. Maybe some people would go with the more expensive option but maybe they wouldn't? It's hard to say what someone would do if they had the right knowledge base.

36. Aaron Cornell, Burlington

I get my insurance from: Employer (self or household member)
My insurance company is: Blue Cross Blue Shield of Vermont

I think the proposition of raising premium prices a potential 15.6% for BCBS or even MVP's 8.5% is, quite frankly, unacceptable. As a current resident of the city of Burlington, where the average cost of housing expenses is 47% higher than the national average, utilities 19% higher, and transportation 12% higher, I think we should be finding ways to lower the cost of living in this wonderful state or very soon we may find ourselves with a mass- exodus.

37. Keltie, South Burlington
I get my insurance from: Employer (self or household member)
My insurance company is: Blue Cross Blue Shield of Vermont

What is the purpose of the increase? I am an RN at UVMMC and we are having a lot of difficulty attracting and retaining young nurses. The cost of living here is extremely high as is and now BCBSVT wants to raise rates. We pay a huge amount every month as my husband is self employed. Our deductible is also very high. Please help those who contribute the most, keep our rates the same and maybe offer better plans for business owners.

38. Amy
I get my insurance from: Vermont Health Connect
My insurance company is: MVP

Monthly premiums plus high (and ever increasing) deductibles are already a huge financial burden at over 20% of my gross income. Another increase without anticipated increase in income only makes this worse. I am also a healthcare provider who accepts insurance and have not seen reimbursement increases across the board, making a premium increase request even more frustrating.

39. Ryan Black-Deegan, Waterbury
I get my insurance from: Employer (self or household member)
My insurance company is: Blue Cross Blue Shield of Vermont

The proposed increases are absolutely insane. When the cost of living in general is increasing 2 - 2.8% depending on the measure, there's no justification for BCBS and MVP to be increasing costs by 15.6% and 8.5%, respectively.

40. Gisele Palin, Huntington
I get my insurance from: Employer (self or household member)
My insurance company is: Blue Cross Blue Shield of Vermont

Everything in Vermont is getting too pricey. No wonder people want to move out of state. It's getting harder for our own grown children to be able to live here. Health care is a large issue concerning everyone and there seems to be no end in sight.

41. Katherine, Northfield
I get my insurance from: Employer (self or household member)
My insurance company is: Blue Cross Blue Shield of Vermont
No

42. Ellen Copley

BCBS is asking for a 15% increase. This is a very large increase. Our salaries do not allow for this! It would be helpful to know the reasoning behind such an increase.

43. Hannah, Guilford

I get my insurance from: Employer (self or household member)
My insurance company is: Blue Cross Blue Shield of Vermont

Health care costs are getting outrageous. I pay more and receive less for the money I spend. I think that we should pay more unless we will actually get better coverage and do not have to jump through so many hoops to get care. If the wrong ambulance service picks me up and rush me to the hospital, my insurance won't pay and I will be on the hook for all the charges! That is crazy! Same with hospitals and such. I shouldn't have to worry if I or my children get a serious injury if I will end up paying out of pocket for the whole experience.

44. Lianna Percy, Shelburne

I get my insurance from: Employer (self or household member)
My insurance company is: MVP

Inflation remains at 2 percent. State employees are receiving barely COLA. Some of us, including those of us who work at at FQHC in health care have gotten by with 1 percent raises over the past couple of year, therefore, not evening keeping up with COLA. Medicare covers most of the elderly in Vermont and Medicaid a number of "high users". Some folks, who are not eligible for state or federally subsidized programs have already been squeezed out of the market by high insurance premiums. I would encourage the GMCB to challenge and scrutinize these requests, not by historical standards, but by actual need. Folks are simply not going to buy in, and guess what happens then? Rates get requested to go up because hospitals and other health care providers end up "writing off" uninsured, or worse, folks do not come for primary care services and end up in the ER in crisis. We know we can do better!! Provide reasonable premiums so that there is a healthy base paying in (pun intended)!

45. Steven Wisbaum, Charlotte

I get my insurance from: Vermont Health Connect
My insurance company is: Blue Cross Blue Shield of Vermont

My wife and I purchase our health insurance through the private market since we're both self employed. For our family of four (2 adults and 2 children) we pay over $20,000 for our health insurance coverage (including dental) plus another approximately $6,000 deductible, which means that we have to generate over $30,000 in income (before taxes) just to pay for our health insurance, which is both unacceptable and unsustainable.

46. Nancy, Hinesburg

I get my insurance from: Employer (self or household member)
My insurance company is: Blue Cross Blue Shield of Vermont

Another double-digit increase. Every year it goes up 8% or more with an increase in out-of-pocket. Current year: $8,000 deductible plus another $2,000 out of pocket, PLUS the cost of the insurance that seems to cover less every year. Yes, employer does pay a portion of the insurance, and we have a HSA. But tax laws does not allow us to save enough to cover the $10,000. And due to the annual increase in insurance cost, employer can not give a raise every year. So every year the net paycheck (take home pay) gets smaller and smaller. I ask you, I beg you, throw out this socialist,

idealistic nonsense and bring back common sense. Have some real over-site on the insurance companies. Bring back several companies of similar size. The competition and over-site will force them to keep rates reasonable. Or you can add another family who is considering moving out-of-state.

47. Kristen Fitzgerald, Huntington
I get my insurance from: Vermont Health Connect
My insurance company is: Blue Cross Blue Shield of Vermont

My husband is self-employed and we have 3 children 5 years old and under who barely see him because he is working all the time to provide for us. An increase of almost 16% is much higher than the cost of living increase and will cause my husband and other families to miss even more time with their children to provide health care for them.

48. Raymond E Amidon, Vernon VT
I get my insurance from: Vermont Health Connect
My insurance company is: MVP

I'm on a limited budget the price i get is very fare and they been good. I got a new health issue if things keep going up i don't what I'll do i only work part time and dont know how much more i can work. Please keep the prices creep 8.5 why to high

49. Elizabeth, South Burlington
My insurance company is: I don't have health insurance.

This is criminal. The whole health 'care' system in the United States is not fit for purpose. So many Americans are uninsured, underinsured and avoiding medical care all together because of the expense. The United States is the ONLY first world country that doesn't provide free health care to all of its citizens. Let's get health care costs under control and get insurance companies out of health care. This system is a epic fail.

50. Steve Simpson
Dear Board, I am writing to you to oppose both rate increases. My reasoning is this: Rate of inflation/cost of living increases are less than 3%. How can double digit and almost double digit rate increases be justified?? I am 66 years old, still working and not collecting SS as I am afraid if I collected now, I would not have enough income in later years when I can't work. My question to you is this?? If the rate increases are approved by you, what do I not pay?? My heat bill?? My mortgage?? My food bill?? Short pay my health insurance, because I can't afford the increase?? I don't understand the reasoning of the huge increases? If my employer increased their prices by these percent increases, they would be out of business and I would not have a job! Please help us working people that want to pay our bills and not have to make the really hard choices of what NOT to pay and continue to live here in Vermont. Thank you for your time.

51. L Jane Crossmon, Vernon
I get my insurance from: Self
My insurance company is: Medicare

I'm 75, rely on Medicare and my supplement of BC/BS of Vermont. It's increased a couple of times, please don't increase again. It's difficult enough to support myself

52. Mary Savidg, Washington
I get my insurance from: BCBSVT
My insurance company is: Blue Cross Blue Shield of Vermont

BCBS needs to cut costs not raise rates... I am retired and my BCBS insurance is gap insurance and very difficult to afford on my very limited budget. Please do not raise rates.

53. Jennifer Goyne, Underhill
I get my insurance from: Employer (self or household member)
My insurance company is: Blue Cross Blue Shield of Vermont

Comment:
I oppose these increases. My partner and I have both needed to buy health insurance privately in recent years, as it was not offered to us by our employers at the time. Because we made more than $45,000 a year we had to pay full price for the plans. He was paying $700+ and I was paying $600+ a month. This is like having a second mortgage. When you add in student loans it made our finances incredibly difficult. Insurance prices are unjustly too high. As a nurse I knew the important of us buying insurance, but I have friends in similar situations who have chosen to go without based on these prices. They are one accident away from a lifetime of medical debt. Insurance needs to be affordable. I work at UVMMC and see that those on Medicaid sometimes misuse the system, driving up costs, while the middle class that doesn't have insurance puts health care off. This in turn leads to further cost increases, as they wait longer to seek care, and can need more care in the long run because of this. We cannot further increase insurance prices. It is a perpetual cycle that will continue to drive up costs each year. These prices are not acceptable or reasonable.

54. Stephanie Kossmann, Bakersfield
I get my insurance from: Employer (self or household member)
My insurance company is: Blue Cross Blue Shield of Vermont

Are you freeking kidding me? O can hardly afford the insurance now. It seems like year, BCBS reduces eligible services and raises out of pocket expenses like co-pays. My pay hardly keeps up with inflation and I'm intenii to change careers where I'll have to cover all premium costs myself. This is terrifying. 15 % is outrageous.

55. Claudia Kelley, Chelsea, VT
I get my insurance from: Vermont Health Connect
My insurance company is: MVP

I am firmly against the proposed rate increase for MVP and Blue Cross Blue Shield of Vermont. Health care premiums are difficult to afford as they stand now. Increasing the premium prices will create undue hardships for many Vermont families, including mine.

56. Jennifer Dudley-Gaillard, Bolton
I get my insurance from: BCBSVT
My insurance company is: Blue Cross Blue Shield of Vermont

As a self-employed person who doesn't qualify for premium assistance, paying more than my mortgage for a +13K family deductible is insane. When was the last time the average Vermonter got a 15.6% raise on top of the annual double-digit previous increases? Please put a stop to this insanity: single payer healthcare is the only solution.

57. James Amber, Chelsea
I get my insurance from: Blue Cross/ Blue Shield directly
My insurance company is: Blue Cross Blue Shield of Vermont
As a senior citizen on a fixed income, this increase would significantly impact my ability to continue with this plan.

58. Jason, Bolton
I get my insurance from: Vermont Health Connect
My insurance company is: Blue Cross Blue Shield of Vermont
These two companies must be so poorly managed to need to increase prices again. As a healthcare provider for 10 years, I have not seen a single increase in the fee for service for covered services in my profession. Where does the money go? Oh wait, I have an idea… Ask UVM.

59. Terry Knight
Hello Folks I have a friend who doesn't go to the doctor because the insurance (BCBS) his employer provides has a high deductible. So sad. How much higher can this go and how high are the administrators salaries at this company.

60. Terry Knight, Williamstown
I get my insurance from: Employer (self or household member)
My insurance company is: Blue Cross Blue Shield of Vermont
I'm not speaking for myself but for those folks whose employee provided BCBS coverage has high deductibles and they avoid healthcare because of the cost.

61. Phillip Mulligan, Chelsea
I get my insurance from: Vermont Health Connect
My insurance company is: MVP
Sounds like big increases to me. Costs should be controlled to reduce rate increases.

62. Chris Haggerty, Bolton
I get my insurance from: Employer (self or household member)
My insurance company is: Blue Cross Blue Shield of Vermont
Stop it. These increases have been unsustainable for years. Health insurance shouldn't be my biggest monthly expense. Be part of fixing this broken system instead on continually passing cost increases on to us. Most folks I know are one serious injury away from medically induced bankruptcy. That's WITH insurance. Enough is enough.

63. Greg Hostetler, Burlington, VT
I get my insurance from: Employer (self or household member)
My insurance company is: BCBS
These rate increases are far higher than the rate of inflation and are completely unacceptable. We need to stop the profiteering in the health care industry and look out for patients. The financial stress that comes from health insurance and medical bills is not good for anyone's health.

64. Julie Houghton, Vernon
I get my insurance from: Employer (self or household member)
My insurance company is: Blue Cross Blue Shield of Vermont

My family is struggling to make ends meet, and with health insurance making their increases in cost and increasing their deductibles it makes it even more difficult to make ends meet and to get the proper care we may need. With the affordable care act insurance is supposed to be more affordable so families dont have to pay so much for medical Bill's and have proper coverage, and I feel health insurance companies are taking advantage of people having to have coverage and have continually made increases each year making the cost of things even more unaffordable. I think there needs to be a cap on how much insurance companies can charge, its getting out of control for families.

65. Jennifer Doyle, Chelsea
I get my insurance from: Vermont Health Connect
My insurance company is: MVP

I dont know how this can even be considered. We are a small business owner in Chelsea, our business is primarily paid (Residential Care Home). By Medicaid for caring for low income elders. We urge you to look at the Medicaid reimbursements for accs and erc/CFC and see if those have gone up 8 percent - you will find they have not. And insurance is not the only thing on the rise, without matching Medicaid reimbursement increases. Our family of four has no options for health insurance at all but privately paying for it at about 1600 per month - yes 20 thousand dollars a year. We would like to save for college, we would like to take a family vacation before our kids leave us, we would like to pay our mortgage and save a bit for retirement. We fear going with our insurance desperately trying to keep our family safe with it. How can anyone afford this increase? How could you even consider letting this happen? A 15 percent decrease would be better in order.

66. Steve Simpson, Orange
I get my insurance from: Employer (self or household member)
My insurance company is: Blue Cross Blue Shield of Vermont

I am writing to you to oppose both rate increases. My reasoning is this: Rate of inflation/cost of living increases are less than 3%. How can double digit and almost double digit rate increases be justified ?? I am 66 years old, still working and not collecting SS as I am afraid if I collected now, I would not have enough income in later years when I can't work. My question to you is this?? If the rate increases are approved by you, what do I not pay?? My heat bill?? My mortgage?? My food bill?? Short pay my health insurance, because I can't afford the increase?? I don't understand the reasoning of the huge increases? If my employer increased their prices by these percent increases, they would be out of business and I would not have a job! Please help us working people that want to pay our bills and not have to make the really hard choices of what NOT to pay and continue to live here in Vermont. Thank you for your time.

67. Katherine Goyette, Corinth
I get my insurance from: Employer (self or household member)
My insurance company is: Cigna

A rate increase would be a significant burden on already struggling VT households. As a nurse practitioner, I am starting to see more patients who are uninsured - these patients fall outside of the medicaid income range, but cannot afford the cost of buying insurance on the exchange or through their employers who are passing the increased premium costs along to the employees.

68. Joyce, Vernon
I get my insurance from: Employer (self or household member)
My insurance company is: MVP

Prices go up but quality of coverage does not increase. So expensive to live right now and this does not help!

69. Jacob Minter, Waterbury Center
I get my insurance from: Vermont Health Connect
My insurance company is: Medicaid

The revenues and profits of these companies are public knowledge, and a raise on rates is unconscionable when they could simply slash the highest salaries. If their motive is only profit, they should not be providing health care and the state should not permit them to make a human necessity - one that is life or death - a slave to the capitalist profit model when so many are already dying from rationing of insulin and other shortcomings of the private sector's profit-driven abuse of human dignity.

70. Jeane Wolfe, Johnson
I get my insurance from: Employer (self or household member)
My insurance company is: Blue Cross Blue Shield of Vermont

We need Medicare for all, now, no one should go broke because they become ill!

71. Dona Meltzer, Braintree
I get my insurance from: Vermont Health Connect
My insurance company is: Blue Cross Blue Shield of Vermont

What are you hoping to do to people on fixed and/or low income? No, to any increase.

72. Kim, Hardwick
I get my insurance from: Employer (self or household member)
My insurance company is: Blue Cross Blue Shield of Vermont

Health care is already too expensive, even when part of the cost is covered by my employer. Raising the cost will cause more people to chose not to get health care, or make them need to get a 2nd or 3rd job to make ends meet. Make a system where taking care of your health is affordable and not run for profits. Vermont is already too expensive to live in. People are leaving en masse between the costs of living, healthcare, heating, taxes. This would just add to that.

73. Allison Monahan, Burlington
I get my insurance from: Employer (self or household member)
My insurance company is: Blue Cross Blue Shield of Vermont

Health insurance is already more expensive than it should be. Raising the cost by such a large percentage would be detrimental. I already know people who do not seek medical attention when needed even if they have insurance because of high copays and deductibles. This would further limit people. I am vehemently opposed to this large 15 percent increase request.

74. Catherine Gibson, Milton, VT
I get my insurance from: It is my secondary insurance , I pay out of pocket.
My insurance company is: Blue Cross Blue Shield of Vermont

My husband and I are retired and on a fixed income. It seems every time we get a little bit more money the insurance rates go up and we are taking a few steps backwards. This impacts us greatly, financially, please do not raise your rates. We already pay $216 per month for bc/bs and $130 for Medicare just for me and this does not include my meds , of which I only take two. I have had terrible issues with allergic reactions to generic meds so need brand name meds which are 10 times more expensive.

75. Tracie Hauck, Rutland
My insurance company is: I don't have health insurance.

People can not afford healthcare now (I am one of them). Raising the price will just ensure more people without healthcare and employers who won't want to provide it due to cost!!

76. Kristen Greene , Rochester
I get my insurance from: I have insurance through my employer.
My insurance company is: Cigna

It is time to stop raising prices. Salaries have not kept up with cost of living. People cannot afford increases.

77. Robin Joy, Barre Town
I get my insurance from: Directly from MVP
My insurance company is: MVP

I'm getting the same benefits for a higher price every year. Benefits I can't afford to use. My wages haven't gone up the same rate.

78. Anthony Goupee, Rochester
I get my insurance from: VT State Teachers Retirement
My insurance company is: Blue Cross Blue Shield of Vermont

Work on cutting costs on drugs, administration, etc.

79. Tim Post, South Burlington
I get my insurance from: Employer (self or household member)
My insurance company is: MVP

VT has the lowest state GDP, the lowest growth in per capita personal income, and statewide wages have increased less than 3% on average last year. MVP already has rates that cost 12%-40% of household take home income. As well, MVP already has high deductibles and copays, which makes out of pocket costs an additional burden. Any increase in prices would put untenable strain on the majority of households in VT.

80. Kristin Dearborn, Winooski VT
I get my insurance from: Employer (self or household member)
My insurance company is: Blue Cross Blue Shield of Vermont

No! 15%? 8? When was the last time anyone got an 8 or 15% raise? The entire insurance system in this country is broken. We took a few tottering steps in the right direction with ACA, but as a whole this industry needs complete reform. Health care is a right, not a privilege.

81. Mary Cosgrove, Burlington
I get my insurance from: Employer (self or household member)
My insurance company is: Blue Cross Blue Shield of Vermont

The BCBS increase is absurd. Many people have a hard time affording their current premiums and will not be able to pay such a large increase. Administrative costs should be reduced especially the CEO's mega salary and perks. This large increase is far above what the average Vermonter receives for a raise if they even get a raise. Please do not approve these large increases.

82. Julie Falvey, Vernon
My insurance company is: I don't have health insurance.

Their insurance is out of our reach even if we could afford your premium the deductible is ridiculously high and making their policies unsustainable to my family

83. We'd Hamilton, Middlesex
I get my insurance from: Vermont Health Connect
My insurance company is: Blue Cross Blue Shield of Vermont

Increases in rates annually, particularly of such an outrageously high degree, are completely unsustainable, unaffordable to the vast majority of citizens, and simply unacceptable. A reduction in salary to all executive positions (how about of 15.6%?) would sure seem to curtail the "need" for this completely sociopathic request.

84. Erica Fucello, Cabot
I get my insurance from: Military
My insurance company is: Humana

No. When I did purchase BCBS prior to having my current healthcare plan, it was entirely unsustainable, even then. Over $530/mo just for myself. If they actually need money, they need to re-evaluate and reduce the largest salaries, before asking their consumers to pay EVEN MORE. Ridiculous.

85. Philip Barrett, East Burke
I get my insurance from: Employer (self or household member)
My insurance company is: MVP

What else does my family have to go without so I can pay twice once out of my check and when the bill comes in at the end of the month this is rediculous they make so much money for not covering anything I do not want to pay more. As a Vermonter I oppose these increases but my voice doesn't mean squat to any of you. And you wonder why so many leave this state well there's one of your answers. So if you give a once of care to what we have to say then tell them to [redacted]

86. Matt Kimball, Burlington
I get my insurance from: Employer (self or household member)
My insurance company is: Blue Cross Blue Shield of Vermont

This proposed increase would make covering basic costs for my family even harder and we're barely paying our bills as it is. This would put us over our financial limits and make healthcare even more unaffordable. Especially at a time when we have more health related needs, this will only contribute to growing debts that we cannot stay on top of.

87. S Scott, Proctor
I get my insurance from: Employer (self or household member)
My insurance company is: Blue Cross Blue Shield of Vermont

I do not think they need to raise their rates. The cost of living in Vermont is keeps going up, but pay is not. Rates can't keep going up without compensation. If this is something that can be controlled - then it is something that should be controlled.

88. Kitt Hazelton, Sandgate, VT
I get my insurance from: Vermont Health Connect
My insurance company is: Blue Cross Blue Shield of Vermont

I fail to understand how we can afford to pay 8.5% to 15.6% more when wages are not increasing by that same percentage. We're asked to pay more and more for insurance that covers less and less. Should we have to sacrifice other necessities to pay for health coverage, especially when said "coverage" still leaves the consumer in debt for health care?

89. Madeline Bergstrom, Saxtons River, VT
I get my insurance from: Vermont Health Connect
My insurance company is: Blue Cross Blue Shield of Vermont

My ability to remain self-employed depends on the affordability of my health insurance. This 15.6% BCBS of VT increase would be devastating to my family.

90. Ann Parker, Saint Albans
My insurance company is: I don't have health insurance.

The premiums, with or without APTC, cause a financial hardship for citizens living in a state with a high cost of living but a low wage base. The working poor need a break and not raising the premiums two years in a row will be a start. Do not raise the premiums again this year!

91. Mary Beth Hamilton, Ferrisburgh
I get my insurance from: Employer (self or household member)
My insurance company is: Blue Cross Blue Shield of Vermont

The cost of health insurance is already too high and I have to pay copays and high a deductible already. No to increase of rates. I think pay cuts to upper management are a better solution.

92. Jae Vick, Winooski
I get my insurance from: Employer (self or household member)
My insurance company is: Blue Cross Blue Shield of Vermont

Please do not approve these increases. Insurance costs more and covers less every year, and you are our only line of defense against those increases.

93. Suzanne Wyckoff, Vergennes
I get my insurance from: Employer (self or household member)
My insurance company is: MVP

NO! This has to stop! Big businesses are filling their pockets while we're hardly getting by. There needs to be oversight with how they spend their money, what their top management salaries are and what they charge for services and pharmacy. Their profit margins are huge and they keep getting bigger. NO!!! Our salaries do not go up 15% so why should theirs!

94. James Stone, Plainfield
I get my insurance from: Too expensive
My insurance company is: Medicaid

pls, no.

95. Ellen Stone, Danville
I get my insurance from: Medicare
My insurance company is: Medicare

Every time the prices are raised it makes single payer or universal health care more attractive to the voters.

96. Anne Senni, Brattleboro
My insurance company is: I don't have health insurance.

It is already unaffordable for a full time + worker and is poor coverage when it can be bought. Do not qualify for Medicaid. Completely dissatisfied with Vermont options. We need universal free health care. I will pay a tax in order to get good comprehensive coverage.

97. Charlotte Davis, Charlotte
I get my insurance from: Employer (self or household member)
My insurance company is: Blue Cross Blue Shield of Vermont

Healthcare is unaffordable as it is. NO RATE INCREASES.

98. Chris Cargiulo, Vergennes
I get my insurance from: Employer (self or household member)
My insurance company is: Blue Cross Blue Shield of Vermont

I, as well as pretty much everyone else I know, are already struggling to make ends meet and living paycheck to paycheck. Another increase in my insurance premiums would be the tipping point between being able to feed my 10 year old son healthy, wholesome food and cheap, unhealthy garbage. Please do not let this increase take place!

99. Ariel Cahn-Flores, Wilder
I get my insurance from: Employer (self or household member)
My insurance company is: Blue Cross Blue Shield of Vermont

As small business we are already strapped and trapped with health care choices, and paying huge amount. Increase not sustainable for small businesses.

100. Clarissa Kendall, South Ryegate, VT
I get my insurance from: It was purchased directly through MVP.
My insurance company is: MVP
Please keep insurance more affordable for families like mine! We are a six person family who needs to have healthcare and the price already stretches our budget.

101. Tonya Wright, Rutland
I get my insurance from: Vermont Health Connect
My insurance company is: MVP
I'm a single mother of two daughters, I work full time and attend classes part time. I already struggle to pay my health insurance monthly, any increase in my bill would mean I would lose my insurance. It's already so expensive what justifies the increase??

102. Patty Kenyon, Middletown Springs, VT
I get my insurance from: Employer (self or household member)
My insurance company is: Blue Cross Blue Shield of Vermont
It's outrageous. My buy in for a BRONZE (the plan that covers next to nothing) is over $175 a week for two people. Another 15% will bring my buy in over $200 per week. How do people afford that? If you give the insurance companies an additional 15% at the very least you should raise the income limits for the state plans so more people can access those. Also the amount of paperwork and hoops for people to jump through to apply and keep the state plans are crazy. These plans are there to help people get access to the care they need, but for many the hoops discourage not encourage people to join. It's one more burden on the self employed and under-employed. Finally, in my opinion, the whole system is a scam. Healthcare is a human right. We need universal healthcare and we need it now. The billion dollar industry continues to funnel more and more money to the already wealthy.

103. Betty Kapitan, Danby
I get my insurance from: Employer (self or household member)
My insurance company is: Blue Cross Blue Shield of Vermont
This on on top of tax reform and a new high deductible ($5,000) is so much more than my family can absorb.

104. Caitlin Zaino, Middlesex, VT
I get my insurance from: Employer (self or household member)
My insurance company is: Blue Cross Blue Shield of Vermont
Healthcare should be affordable and premium increases may make insurance out of reach to some Vermonters.

105. Nancy Davis, Richmond
I get my insurance from: Employer (self or household member)
My insurance company is: Blue Cross Blue Shield of Vermont
I will probably not be able to afford it if they raise the price, I currently have the least expensive with the highest deductible and can barely afford that. I cannot think of a valid reason for raising costs, health insurance is way higher then it needs to be as it is.

106. Leslie Hutchinson, Randolph
I get my insurance from: Employer (self or household member)
My insurance company is: Blue Cross Blue Shield of Vermont
15.6% is way too large of an increase. Do not increase more than 5%.

107. Jenni Bee, Plainfield
I get my insurance from: Vermont Health Connect
My insurance company is: MVP
I do not agree with a price hike. Wages have been stagnant and I barely can afford to live in Vermont. At this rate I will never be able to retire nor save. Unless all workers get to earn a livable wage at $21/hour, nothing should be increased.

108. Tanya Scuteri, Shoreham
I get my insurance from: Employer (self or household member)
My insurance company is: Blue Cross Blue Shield of Vermont
Premiums are already unaffordable for many people. This is coupled with higher deductibles and co-pays. The proposed increases are unreasonable and unsustainable.

109. Kristen Martin, Barre
I get my insurance from: Employer (self or household member)
My insurance company is: Blue Cross Blue Shield of Vermont
Price increase is not necessary.

110. Stephanie Ball, Essex Junction
I get my insurance from: Employer (self or household member)
My insurance company is: Blue Cross Blue Shield of Vermont
By increasing premiums you are basically asking my coworkers and I to take a pay cut, whether the cost is absorbed by myself or my employer. Am I getting increased healthcare coverage? Am I being offered a wider variety of options or providers? Why an over 15% increase and not 2 or 3? I avoid seeking medical care as much as possible as it is, for fear of exorbitant medical bills. This 15% increase takes away from my ability to pay off my student loan debts, pay down my mortgage, and invest in my future education and retirement planning and for what?

111. Ivan P. Smith, Fair Haven
My insurance company is: I don't have health insurance.
I don't plan on having insurance, at least while it exists in its present form. In order for private insurance to work as conduit to finance heath care equitably, it has to be: nonprofit, take any one that comes along, not be able to argue with the doctors about what you need as patient, or what Doctor or facility you want use, and be equitably financed. Excessive deductibles and copays should not exist. It's overhead should be no more than 10%. Their job should to collect money in premiums, and when needed, pay the bill. That's it! That's not what seems to be happening with the two "nonprofit" companies we have now in Vermont. And worse yet, I can't help but wonder if some percentage of the premiums sent to them, goes to a fund to defeat real universal health care reform like Medicare for all, or the funding of Act 48, the still born Single payer law that was passed years ago, and brought us the GMCB. The subsidies to these companies from the State and federal coffers is throwing good money

after bad, and would better spent funding Act 48 into what it should be, guaranteed care for all Vermonters. It can be done!

112. Amy Venman, Middlebury
I get my insurance from: direct
My insurance company is: Blue Cross Blue Shield of Vermont
I can barely pay the premium now.

113. Keighan Eaker, Jamaica
I get my insurance from: Employer (self or household member)
My insurance company is: Blue Cross Blue Shield of Vermont
If you want me to pay more for my insurance coverage....what additional benefits will you be offering? Raising rates for the sake of raising rates is just a jerk thing today. How will you keep me interested in supporting your business??

114. Catherine, Essex
I get my insurance from: Vermont Health Connect
My insurance company is: MVP
I run a small business that helps 12 other people support their families. I cannot afford these price hikes.

115. Heather
I get my insurance from: Vermont Health Connect
My insurance company is: Medicaid
Health care is already too expensive. Most people need to work multiple jobs just to be able pay for necessities such as rent and health care.

116. Suzanne Hodsden, Addison
I get my insurance from: Employer (self or household member)
My insurance company is: Blue Cross Blue Shield of Vermont
No! Please, no! Our copays have gone up already. Our income has not kept up with the cost of our insurance.This is not an affordable option for us and anyone we've spoken with.

117. Tammy McNamara, E Dummerston, VT
I get my insurance from: Employer (self or household member)
My insurance company is: Blue Cross Blue Shield of Vermont
This rate increase will not only strain our family finances (we pay $2000/month for our family plan as it is!) but also significantly impact our ability to cover employee health insurance premiums. Please do not allow this to occur, premiums are already prohibitively high for a minimum level of care.

118. Joyce Hawes, Waltham
I get my insurance from: Employer (self or household member)
My insurance company is: Blue Cross Blue Shield of Vermont
This is a huge, unaffordable increase. Our medical insurance is already expensive. We cannot afford this increase. It is already our single largest monthly expense. Please do not approve these huge increases!

119. Margaret Clough, West Windsor, VT
I get my insurance from: Employer (self or household member)
My insurance company is: Blue Cross Blue Shield Federal employee program
It is high enough! It needs to stop going up every year and co pay need to stop going up too. It feels like I pay more and get less every year. Pay your CEO less.

120. MaryLou Perron, Waterbury
I get my insurance from: Employer (self or household member)
My insurance company is: Blue Cross Blue Shield of Vermont
15.6% is a pretty large increase in one jump. This would certainly affect seniors and those on a fixed income. It is becoming more difficult to sustain increases such as these as well as increase in taxes, groceries, gas, personal needs, etc.

121. Marianne Parker
I believe insurance companies make enough money. Some of the time they don't want to pay for things that common sense will tell them it would cost more without the preventative measure.

122. Paul Black, Rutland
I get my insurance from: Employer (self or household member)
My insurance company is: Blue Cross Blue Shield of Vermont
Please only allow increases that reflect wage growth in the state. For example if wage growth is 1% as a state average then insurance companies may increase rates of only up to 1%.

123. Susan Dunne, Shelburne
I get my insurance from: Employer (self or household member)
My insurance company is: Blue Cross Blue Shield of Vermont
I believe that the request for an increase is ridiculous. For the past several years, the insurance industry has requested increases to cover costs. These increases have cut into people's pay and employer's budgets. It is getting harder and harder to make ends meet and the rising costs of insurance aren't helping. As it stands now, many people feel that their health coverage is adequate. Others feel that they are under-insured. There was a recent revamping of the health care industry and the way people manage their out of pocket expenses - this "revamping" has strapped many Vermonters with ridiculous out of pocket expenses, use of third party payers with systems that are not user friendly and terms like HRA and HSA that are confusing at best. Vermonters need health insurance that works for them and their doctors, not another pay increase!

124. Winthrop Pennock, Guilford
I get my insurance from: Employer (self or household member)
My insurance company is: Blue Cross Blue Shield of Vermont
Health insurance costs continue to rise and they continue to place pressure on our small business that is trying to grow, create new jobs, and be a good corporate citizen for VT. An increase of this size would negatively effect our ability to grow.

125. Shelley Sparks, Brattleboro
I get my insurance from: self
My insurance company is: Blue Cross Blue Shield of Vermont

PLEASE don't ! Seniors are being priced out of Vermont after spending all our working lives here and contributing to the state.

126. Shelley Sparks, Brattleboro

Please, don't let this happen. We seniors in VT are pushed to our limits already. Many of us have already left the state due to high costs; I have many friends who have left for less expensive states. We will too if this keeps up. Is this what we get for spending All of our working lives contributing to the State of Vermont? Please think about the folks who cannot absorb any more expense while living on very limited income. Thank you.

127. Linda Olney, Shrewsbury, VT
I get my insurance from: Past employer Retired teacher
My insurance company is: Blue Cross Blue Shield of Vermont

Blue Cross increase would be a burden on our finances as we have a fixed income.

128. Linda January, Cornwall
I get my insurance from: Directly through MVP as the Health Connect is too cumbersome to navigate
My insurance company is: MVP

As a family of 3, currently our daughter is the only one with health insurance and that cost us $518 a month. My husband and I do not have access to health insurance through our employers so we made the decision to go without because we couldn't afford a monthly premium of over $1200 for a family plan. $1200 is more than we pay in rent and with my student loan payments of [redacted] a month we made the tough decision not to have insurance. An increase of 8.5% will increase our monthly premium by $50, $50 that we quite frankly don't have! $50 that we need for food, diapers, gas, and many other things. The cost of insurance is out of control, not only are the monthly premiums out of reach for my family but the deductibles are outrageous! Please work on making health insurance affordable and less cumbersome!

129. Abby Kendall, Burlington
I get my insurance from: Employer (self or household member)
My insurance company is: Blue Cross Blue Shield of Vermont

I am insured through my employer, a healthcare nonprofit organization. For the last several years, they have continued to absorb the rate increases that BCBSVT has asked for, and each year it becomes more and more challenging for them to do so, but they know it is important. They know that the high deductibles and even higher out of pocket maximums still make insurance essentially unaffordable. I had surgery last year, and I am still working to pay the hospital for the amount not covered by insurance. Besides that surgery, I am a young, healthy 31 year old living here in this state, and I contribute positively to your healthcare pool. The perception that is created when insurers ask for such a high rate increase does not make me want to continue to use BCBSVT as a customer. You have the lobbying and advocacy power to more positively contribute to a more sustainable healthcare ecosystem; until I see more of this, hearing the yearly news rate increase asks will continue to cause frustration and anxiety, and a loss of faith that Vermont can think strategically and creatively about our public health challenges.

130. Abraham, Brattleboro
I get my insurance from: Vermont Health Connect
My insurance company is: Green Mountain Care/Medicare
Please don't raise premium prices! We can't afford it!

131. Paula Higbee, Ferrisburgh
I get my insurance from: Employer (self or household member)
My insurance company is: MVP
Working people cannot afford any increase. Last year an outpatient kidney stone procedure cost me $7,000 out of pocket -with insurance. Enough is enough...

132. Denise Glover, Brattleboro
I get my insurance from: Vermont Health Connect
My insurance company is: MVP
It's already a struggle to afford any insurance at all. At age 55, being hired by a company with decent benefits is a long shot. I am currently a self-employed sub contractor and an piecing together various part-time jobs. Please do not raise the rates! Thank you.

133. Mary Ann Gardner, Putney
I get my insurance from: Vermont Health Connect
My insurance company is: Blue Cross Blue Shield of Vermont
Please don’t increase! I just make ends meet now!

134. Barbara and Bruce, Wilmington
I get my insurance from: Teachers retirement
My insurance company is: Blue Cross Blue Shield of Vermont
It is too large an increase for retired people to manage!

135. Juliette Carr, Newfane
I get my insurance from: Vermont Health Connect
My insurance company is: Blue Cross Blue Shield of Vermont
We pay more for health insurance than any other bill, including mortgage and property taxes. It still comes with totally unaffordable deductibles and out of pocket expenses. A rate increase of this magnitude will make it unaffordable in the extreme. We will need to consider cancelling our insurance and paying the fine instead, it would be more affordable since we’re young and healthy. Perhaps the health insurance companies could consider cancelling their annual bonuses instead of forcing working families to cancel our insurance.

136. Adam
I get my insurance from: Employer (self or household member)
My insurance company is: Blue Cross Blue Shield of Vermont
I think if anything they should lower their prices, not increase them. By raising them, people are going to choose not to have health care.

137. Melanie Giangreco, Richmond
I get my insurance from: Vermont Health Connect
My insurance company is: Blue Cross Blue Shield of Vermont

As someone currently insured by BlueCross BlueShield of Vermont, I strongly oppose the proposed rate increase, especially if deductibles remain high, and few health costs are actually covered. For the past two decades, premiums and deductibles have steadily risen across the board at all of the major insurance companies, making it more and more difficult to afford health insurance and health care. I currently work three jobs, but all are part time and do not offer health insurance, so I purchase through Vermont Health Connect. A 15.6% increase in the premium cost would be financially catastrophic and I would likely be making the difficult decision to either risk going without health insurance, or risk still not being able to pay for basic medical care even with insurance because the high monthly premium would not allow for any savings to be set aside in the event of an emergency health expense. Many people throughout the state find themselves in the same situation. Raising rates will result in more people being uninsured, which will then put additional burden on our public health system. People will delay or not receive preventative care or timely care for illness or injury, emergency room visits will increase, and overall health expenses will increase. This cost will be paid by patients and taxpayers, not the insurance companies. I wholeheartedly support a public option that would provide basic health insurance coverage for all Vermonters, and oppose any efforts to raise premium rates.

138. Peggy Farabaugh, Vernon
I get my insurance from: Aetna
My insurance company is: We are covered under my husband's retirement policy from Aetna (for Vermont Yankee retirees)

Please disallow any rate increases. I am completely disgusted with our current options for health insurance. The premises for the ACA was to force insurance companies and health care providers to compete. That competition was supposed to provide more choices, better quality and lower prices. Instead we have fewer choices, lower quality and higher prices. This is exactly what gives government intervention a bad name. We have a small business with about 10 team members. Todays health care & insurance costs are oppressive for all of us & the cost makes it hard for our company to remain competitive in national and global markets. As bad as the situation was before the ACA it was better than it is today. What a pity. Vermonters need to see a comparison of todays insurance plans via ACA versus private insurance. How about Montpelier gets on that?

139. Anja Wurm, Vergennes
I get my insurance from: Employer (self or household member)
My insurance company is: Blue Cross Blue Shield of Vermont

These price increases are huge and will greatly affect the ability of most Vermonters to have the coverage they need. In the long run, this ends up being more expensive for the State as people will neglect health concerns which will then only get worse requiring more financial input. Please don't allow this.

140. Matthew Burstein, Fairfax
I get my insurance from: Vermont Health Connect
My insurance company is: MVP

Why should I have to pay more to get the same or less? If prices go up can we expect at least 8.5% better service or care? No increase without an equal return to the customers or tax payers.

141. Mike Kelly, Dummerston
I get my insurance from: Vermont Health Connect
My insurance company is: MVP
Pass the 15 dollar minimum wage in Vermont. Then maybe we can discuss premium increases. Until then, Hell no.

142. Caitlin Gildrien
I get my insurance from: Employer (self or household member)
My insurance company is: Cigna
I am very concerned about this request to increase insurance prices. Private insurance is already a major expense for many families and generally provides poor coverage while insurance companies report record profits. In my own case, if I meet my deductible and make all my "affordable" monthly payments, I will have spent over a quarter of my income on insurance *before receiving any benefit.* VHP should deny these requests, and we must move to a single-payer system where health care is actually affordable and accessible to all.

143. Courtney Worthington, Vergennes
I get my insurance from: Employer (self or household member)
My insurance company is: MVP
We already pay too much. The companies should be trying to maintain or lower, not go higher. People cannot afford anymore.

144. Abigail Tracy, Brattleboro
I get my insurance from: Vermont Health Connect
My insurance company is: Blue Cross Blue Shield of Vermont
[redacted]... i already pay 335 a month... i'm about having to go home and live with my parents because i can't afford insurance plus rent

145. James, Richford
I get my insurance from: I am unsure
My insurance company is: green mountain
Why bother trying to keep up. [redacted] I can't survive on my monthly "Check"... Everything breaks and I fix it myself because I can't afford a repair. I'm home 3-4 weeks at a time because of the greed of the big oil thieves. And I McGyver everything the best I can. I live off the grid via 4 solar panels, and don't have an electric bill. I eat out of boxes and cans. If I had to pay anymore I'd go back to [redacted] before 2008 when I had finally found a way to live cheaply. Now the town charges me taxes I can not afford and everything keeps going up while MY INCOME NEVER INCREASES. YES I WOULD LIKE A NICE 15% RAISE TOO, BUT IT AIN'T HAPPENIN! Seems now I will have to be my own damn provider for this now too.Nobody knows if I live or die anyhow. I have nobody.
IT"S YOUR GREED man... ONLY GREED... Ya better learn from me and McGyver what you keep demanding. And since you shouldn't have it You BEST TRIM COSTS! Ya all act like money grows on trees for you while you turn the damn screws tighter and tighter. WHERE'S the damn breaking point? Looks like you want to find out!
Thanks ~ For NOTHING

146. Andrew Wojtyna, Essex Junction
I get my insurance from: Employer (self or household member)
My insurance company is: Blue Cross Blue Shield of Vermont

Could the request for response include the carrier's rationale for an increase in rates? Of late, there has been an increase in copay amounts across the board.
Will this lead to less out of pocket expenses? Does this lower the deductible on high-deductible health plans? What were the earnings for the companies in the last few fiscal years? What is the money intended to do?

147. Tricia Leone, Rutland
I get my insurance from: Employer (self or household member)
My insurance company is: Blue Cross Blue Shield of Vermont

The shift to high deductible plans in VT has made health care unaffordable, even for those with employer sponsored plans. Health insurance premiums are already so high here. Increasing them will push people out of VT. As a short staff member in public education, my
health insurance premiums alone are 25% of my gross pay. That does not even include any out of pocket medical expenses. In 2018, due to problems with health care accounts for educators, I had $5,000 in medical bills. I am struggling to continue justifying working in education. But if health care premiums go up across the board, many of us will question whether living in VT is financially feasible at all.

148. Rolf Parker, Brattleboro, VT

Dear Members of the Review Board. As things currently stand, we can barely afford the health care premiums. That may sound extreme, but it is not. My wife and I make enough money from all sources, (we wear a lot of hats, like a lot of Vermonters) so that we are not poor. But our 300 plus premiums represent about a third of my biweekly paycheck. That also may not sound like a lot, but after groceries, electric, car expenses (we economized, and only have one used car. My wife goes to work on a bicycle) we are sometimes hard pressed to pay the premium without charging it up on a credit card. The problem with credit cards is that the monthly mininums are growing , and eventually this may become a run away train of debt. A 15 percent increase in the premiums will represent an increase of about 45 dollars a month. A 9 percent increase represents an increase of 27 dollars, or about 300 a year. We need that 300 for other things. [redacted]. Thank you for considering my input.

149. Sarah Wood, Brookline
My insurance company is: I don't have health insurance.

My family is already under insured due to the high cost of insurance and we skip needed services due to costly chantry’s and premiums!

150. Jack Clay, Middletown Springs
I get my insurance from: Medicare
My insurance company is: Medicare

Get rid of insurance companies. Their sole purpose is to profit from human suffering. Move now to some form of Medicare for all. Then we wouldn’t have these constant premium price increases.

151. Jennifer Williamson, St Albans
I get my insurance from: Vermont Health Connect
My insurance company is: Blue Cross Blue Shield of Vermont
As both a physician and a patient, I do not want these companies raising their premiums. The premiums are already too high for patients to afford and these companies are already making a profit from it.

152. Lena Szumowski, Burlington
I get my insurance from: Employer (self or household member)
My insurance company is: Blue Cross Blue Shield of Vermont
This is a huge increase that will greatly affect my family, after what seems like years of increases and/or decreases in benefits.

153. Emily Garrett, Burlington
I get my insurance from: Employer (self or household member)
My insurance company is: Blue Cross Blue Shield of Vermont
Even though we have health insurance it takes up almost half of my husband's paycheck and we still pay a lot of out of pocket expenses. If the rates increase, we will need to purchase a less expensive plan, have less coverage for our family of four, and pay more in out of pocket expenses. This would probably prompt us to avoid going to the doctor as much as possible.

154. Cecile Gebo, Vergennes
I get my insurance from: Genworth (Aetna)
My insurance company is: Medicare/Genworth (Aetna)
I oppose it and can cite the fact that our insurance rates go up every year and we are over 70 years old and can't afford our rates and now some of our prescriptions are being refused or a cost preventive

155. Sandy, Vergennes
I get my insurance from: Employer (self or household member)
My insurance company is: Blue Cross Blue Shield of Vermont
Please-do not raise prices!

156. Nancy, Corinth
I get my insurance from: Employer (self or household member)
My insurance company is: Blue Cross Blue Shield of Vermont
This is just to much. After Obama care came in my co-pays are $2500.00 a year. That is a ton of money for someone who only makes [redacted] a year. This is hurting the working person while the Insurance Company's make money. Please, please don't allow an increase. It's already very difficult to survive financially if your someone that works instead of taking advantage of the system. We can't afford it!

157. Heidi Britch-Valenta, Berkshire
I get my insurance from: Employer (self or household member)
My insurance company is: Blue Cross Blue Shield of Vermont

It is unreasonable for insurance rate increase to outpace income increases by such a wide margin. This reduces take home pay for workers, strains business resources, and impacts town and school budgets dramatically. How could such an increase even be considered? Please limit these increases to be more in line with cost of living increases.

158. Michelle Hope Beaulieu, Sheldon
I get my insurance from: Employer (self or household member)
My insurance company is: Blue Cross Blue Shield of Vermont

The cost of health insurance in VT is pricing people out of healthcare, and out of state. I am fortunate to have insurance funded through my employer. At my last job I was not so lucky and had to buy VT Health Connect insurance. It was a nightmare to manage and was very expensive. Working Vermonters should not have to choose between feeding their families and paying for health insurance.

159. Laura Cornell, Williamstown
I get my insurance from: State of Vermont Retiree (cannot afford rate hike)
My insurance company is: Blue Cross Blue Shield of Vermont

I get there may need to be a rate hike however I believe anything above 8% is substantial and should not be approved. Some of us are on fixed incomes, many i should say are.

160. Margaret Conant, Burlington
I get my insurance from: Directly from BCBS
My insurance company is: Blue Cross Blue Shield of Vermont

My husband and are both in our mid-thirties, self employed, healthy and earn just enough money to make us ineligible for health insurance subsidies. Our insurance premium is equivalent to our home's mortgage. The already high cost of our health insurance keeps us from being able to put what we would like to away for retirement. I cannot imagine having out premiums go up by 15.6% next year and cannot wait until this country gets its act together and makes real moves towards affordable health care for all.

161. Lisa, Vernon
I get my insurance from: Employer (self or household member)
My insurance company is: Blue Cross Blue Shield of Vermont

I would like to propose that maybe instead of increasing the rates for hard working people that maybe some of the spending be cut for those individuals who use the hospital ER's as their primary care doctors. Maybe there should be limits on the number of visits allowed per week/month/year or demand they obtain a pcp and use them for non emergent visits like the rest of us.

162. Devon Ayers, Burlington
I get my insurance from: Employer (self or household member)
My insurance company is: Blue Cross Blue Shield of Vermont

Insurance is becoming so costly that it is almost impossible to use. I fear going to the doctor because I'm worried something will come up that I won't be able to afford. The high cost of premiums is just one of many problems. Deductibles and out of pocket expenses to continue to climb every year-- at

a rate much higher than anyone's wages increase. GMCB was supposed to get costs under control, but we are still seeing double digit premium increases while the profits of the insurance company and UVM Med Center soar. Maybe it's time to abandon the "free market"? Or perhaps all of the executives can get pay cuts equal to that of the rate increases they propose?

163. Joshua Shedaker, Colchester
I get my insurance from: Employer (self or household member)
My insurance company is: Blue Cross Blue Shield of Vermont

My prices have gone up to the point where I can afford any but the most basic health services as it is. It's far more appropriate for the executives to take a year or two without a bonus than to price me out of further Healthcare options especially since we already pay for insurance.

[redacted]

164. Terry Zigmund, Winooski
I get my insurance from: Vermont Health Connect
My insurance company is: Blue Cross Blue Shield of Vermont

My health insurance with premiums, co-pays and deductibles is quite expensive already. A 15% increase would make it difficult for me to afford. I am a sole proprietor of an arts based business, a rate increase would create more stress in my life. If I need to pay higher premiums, I will need to work more.

165. Paul Curtiss

It's is time to shift cost increases to insurers and healthcare providers. The incessant double digit BCBS of VT annual increase requests is making healthcare a luxury item for consumers. Healthcare should not be a luxury but an affordable right. BCBS needs to relook at their business model and stop looking to consumers to make up their for decreasing profits. Thank you for your time.

166. Judy Kowalczyk

I'm not sure if you have any touch on reality, but we can not even afford the rates that we are paying for health insurance now, let alone a 10-15% rate hike. We pay so much money for nothing in return. We do not get many benefits for the health insurance we already buy. We pay a salary's worth of money for the insurance that pays for pretty much only catastrophic events. PLEASE get a grip and stop raising our health insurance premiums! The CEO of Blue X will just have to accept the huge bonus he received last year for this year! Please stop making it so difficult to have a small business in Vermont. Health insurance is one of our largest expenses. Please don't raise the premiums another penny; they are already unaffordable now.

167. Dean Grover, Huntington, VT

Hello: I am, like many other Vermonters, fully retired. I am not on Medicare, so with my fixed income will face financial hardship with the proposed, excessive 15+ percent proposed increase by Blue Cross blue shield. I absolutely oppose this increase. BCBS needs to find cost savings and learn to make do with the current, very high premium that they charge.

168. Paul Bremel, Dorset
I get my insurance from: Employer (self or household member)
My insurance company is: Blue Cross Blue Shield of Vermont

BCBS VT already does not come close to paying for my family's necessary medical needs. With a policy that claims a $5000 out of pocket maximum, I tallied $27,000 of out of pocket medical bills in 2018.

169. Elizabeth Cheng Tolmie, South Burlington
I get my insurance from: BC/BS directly through the health exchange
My insurance company is: Blue Cross Blue Shield of Vermont

The requested raise appears extraordinarily high. I would rather have BC/BS reduce their marketing expenses than increase premiums. I receive "flashy" promotional brochures and communication with a marketing bias versus. I question how those expenses might be re-directed towards keeping premiums at a reasonable level. Needing to purchase health insurance on the exchange is extremely expensive. Is there any end in sight?

170. Amrita Parry, Coventry
I get my insurance from: Employer (self or household member)
My insurance company is: Blue Cross Blue Shield of Vermont

My health care premium and the amount my employer pay have both already increased this year. This increase has not reduced my deductible nor increased the care I receive. I have a $1300 hospital bill (copay) still to resolve from an ER visit earlier this year. The working class is already under a tremendous burden paying an obscene amount for a broken system. Please vote no on this latest premium increase.

171. Michael Feiner, Roxbury, VT
I get my insurance from: Vermont Health Connect
My insurance company is: Blue Cross Blue Shield of Vermont

Until broad scale wages are increased at the same rate, salaries for insurance company CEOs and top brass reduced at easily twice the rate, real health care costs start trending downward annually, and outcomes improving, there is no way [redacted] the Green Mountain Care Board should approve these rate increase requests! My personal health care expenses are obscene as it is, and every month I write a check to Vermont Health Connect literally for the nothing; for the privilege of paying for nearly every health related expense on top of that as if I don't have insurance at all, which for all intents and purposes, even with a "gold" plan, I really just don't. This racket needs to end.

172. Tara, Colchester
I get my insurance from: Employer (self or household member)
My insurance company is: Blue Cross Blue Shield of Vermont

Health insurance is already a huge cost for families and employers, please do not continue to exacerbate this problem by allowing theses huge rate increases.

173. Galina, Newport City
I get my insurance from: Employer (self or household member)
My insurance company is: Blue Cross Blue Shield of Vermont
I cannot afford these increases, although I have a full-time job.

174. Mary Langevin, Waterbury
I get my insurance from: Vermont Health Connect
My insurance company is: MVP
Please don't increase. I am 36 and have lived in VT my entire life. I am a healthy individual - employeed and own a business as a massage therapist. It is a struggle to pay the monthly when paying off education loans, rent, trying to save for a house, trying to be above the scrambling level, I am as straight edged as they come. I support a healthy diet and exercise. I signed on for this bc of the penalty. I have NO credit cards. I hate shopping. This increase in living is one reason why VT youth does not stay in VT. I am not a trust funder.

175. Jim, Colchester
I get my insurance from: Employer (self or household member)
My insurance company is: Blue Cross Blue Shield of Vermont
I work in an outpatient healthcare setting where we rely heavily on reimbursement from these companies for our services. Rates they pay out for care have only decreased yet they want to increase what they charge us as individuals and our employers. This means less money for the business and employees and yet more money to the insurance companies who already post large profit margins. This is one of many reasons the rate increase seems wrong!

176. Wendy Little, Brownington
I get my insurance from: Employer (self or household member)
My insurance company is: Blue Cross Blue Shield of Vermont
I do not want my premium to increase by 15%. It shouldn't be more than 3 to 5%.

177. Hannah Therrien, Brattleboro
I get my insurance from: Vermont Health Connect
My insurance company is: MVP
I can barely afford what I pay for what I have for health insurance now.

178. Ted Broome, St Johnsbury
I get my insurance from: State
My insurance company is: Green mountain care
Raising premiums makes insurance harder if not impossible for some people to get insurance. So no to raising premiums

179. Barbara OReilly
I get my insurance from: Directly
My insurance company is: Blue Cross Blue Shield of Vermont

My policy is a Medicare Supplement that is already hundreds of dollars more expensive than in other states for identical coverage. Has the Board ever voted against the hospital or insurance companies?

180. Martha Healey-Nelson, Brattleboro
I get my insurance from: Employer (self or household member)
My insurance company is: Blue Cross Blue Shield of Vermont

BCBS has drastically raised their rates twice in the past year. This is outrageous that they are working toward eliminating health insurance for working, lower middle class people and their families. Let's take insurance companies out of our health care system. Insurance companies only smother us with higher costs and no coverage. Especially if people like myself are presently fortunate enough to be healthy.

181. Elizabeth Biron, East Orange
I get my insurance from: Employer (self or household member)
My insurance company is: MVP

Please don’t increase my premiums or I may have to go without health insurance. I hade to pay $800.00 for my daughter to have blood work

182. Christopher Steller, Calais
I get my insurance from: Vermont Health Connect
My insurance company is: Blue Cross Blue Shield of Vermont

Health insurance is already unaffordable to most, and of poor quality. Perhaps their execs should take a pay cut.

183. Dianne R. Laroche, Highgate
I get my insurance from: Employer (self or household member)
My insurance company is: MVP

We are retiring this year and will need to get on Vermont Health Connect. Currently we are covered under my husbands employer. Starting next month we will have to look for a plan from the health connect. This proposed increase will affect us greatly. It will make it so hard to be able to pay for it, [redacted]. That has to pay all our living expenses. Food, household bills, vehicle expenses, essentials, insurances, etc. Raising the insurance costs is going to put a burden on low income, even middle income. This proposed increase is wrong. Please don't make it impossible for struggling people to be able to afford health insurance. I am totally against the increase. It already is so unaffordable as it is. Health covarage is a right and should not exist for only the rich people. It is a right for all americans.

184. Brenda, Wolcott
I get my insurance from: Employer (self or household member)
My insurance company is: Blue Cross Blue Shield of Vermont

We are due with our first child early next year. We will not be able to afford to leave our one bedroom studio for a home with all of the extra expenses. Childcare, loans, insurance, every penny counts

185. Phyllis Bryden, Colchester, VT
I get my insurance from: Employer (self or household member)
My insurance company is: Blue Cross Blue Shield of Vermont
We can't afford another rate increase People are working 2-3 jobs to afford to live here. Health care needs to be affordable to everyone.

186. Cherie Bergeron
I get my insurance from: Employer (self or household member)
My insurance company is: Blue Cross Blue Shield of Vermont
It is a sad but true fact: the vast majority of employers, employees, and other customers simply cannot afford these kinds of rate increases. This is especially true given, in many cases, the decline in coverage of services and increase in co-pays and deductibles.

187. Mitchell Tillotson, Montgomery Center
I get my insurance from: Vermont Health Connect
My insurance company is: Blue Cross Blue Shield of Vermont
I can barely get by with the insurance prices the way they are now. Sometimes I have to forgo a car payment or mortgage payment just so my health insurance does not overdraft my account. If the prices go up any more I will be forced to go without health insurance. A scary thought in my line of work.

188. Mike Letourneau, Enosburg Falls
My insurance company is: I don't have health insurance.
Why can't afford the health insurance now !!! No way can I pay $400 to $800 a month for 2 people, thank God at least my kids are still covered

189. D Stewart, Dorset
I get my insurance from: We buy directly from Blue Cross Blue Shield
My insurance company is: Blue Cross Blue Shield of Vermont
We are a very healthy family of 5 on the "Silver" plan. Our insurance rates have TRIPLED since we moved to VT in 2012! We are considering dropping our insurance because not only are the rates astronomical we also have to pay thousands towards our deductible! We're seriously considering leaving Vermont altogether.

190. Stephen Williams, New Haven
I get my insurance from: Employer (self or household member)
My insurance company is: MVP
These proposed increases are excessive and unfair to working folks. It's time to say goodbye to the Medicaid/Medicare cost shift and either force the State to raise taxes directly to fully fund Medicaid/Medicare or cut services. No more gimmicks to avoid political fallout. Enough is enough.

191. Christina Malanga, Morgan
I get my insurance from: Employer (self or household member)
My insurance company is: Blue Cross Blue Shield of Vermont
A price increase harms those of us who have good jobs and already struggle to get by.

192. Siobhan Young, Stratton
I get my insurance from: Employer (self or household member)
My insurance company is: Blue Cross Blue Shield of Vermont

Vermonters already pay enough for health insurance, and in a State that already has lower than national average income, higher than national average cost of living, and high taxes. One more cost increase is just going to force more people to move out of Vermont.

193. Joyce LaMonda, Bakersfield
I get my insurance from: I purchase direct from bcbs
My insurance company is: Blue Cross Blue Shield of Vermont

I have bought my own insurance for three years and have only been able to get physicals paid my bcbs and my 3 free doctor's appointments. Other than that I have paid out of pocket for my meds and have not met my deductible in 3 years. I pay $657 a month currently. That means I pay $7884 a year plus out of pocket medications for $400 and usually about $1200 toward my deductible. Yes I am protected if I have a major medical event but at what cost? $7884+ 15% would be $9066.60! Something has to change. Thank goodness I qualify for Medicare next July!

194. Nicole Mcphee, Rutland Town
I get my insurance from: Employer (self or household member)
My insurance company is: Blue Cross Blue Shield of Vermont

None of the Vermont tax payers are getting 15% annual salary increases that allow them to absorb this increase. Vermont is already unaffordable for both employers and employees. If you approve these increases, you will make Vermont even more unaffordable and force more people to leave the state.

195. David McKay, Craftsbury
I get my insurance from: Employer (self or household member)
My insurance company is: Blue Cross Blue Shield of Vermont

I want to say that if their budgets are tight, a 15.6% reduction in their salary would be a more viable solution; that if they are so hard-pressed to make a living they could lobby Congress to incentivize creating a more equitable health care system that benefits the majority, rather than the select minority, because that is what a civilization that is sustainable would do as best practice.

196. Rafael A. Flores, Wilder, VT
I get my insurance from: Employer (self or household member)
My insurance company is: Blue Cross Blue Shield of Vermont

These rate increases must stop at some point. Health insurance should not be for profit. Quality health insurance is a right not a privilege.

197. Beth, Hardwick
I get my insurance from: Vermont Health Connect
My insurance company is: Blue Cross Blue Shield of Vermont

I can't actually afford health insurance as it is, but I have to shortchange other areas of my life (like decent housing) so I can get the healthcare I need, which would be inaccessible if I did not have insurance. Increasing the amount I'd have to pay would make healthcare even less accessible.
It's offensive that the working poor would be asked to fork over more money. Will any top ranking

company officials be taking pay cuts to help the financial viability of this company? Somehow I doubt. A price increase = me dropping my health plan.

198. Heather, Dummerston
I get my insurance from: Employer (self or household member)
My insurance company is: Blue Cross Blue Shield of Vermont

An average person, working full time, getting health insurance through employer, that has a life threatening disease-beyond their control, should be able to afford a roof over their head, clothes on their backs and food in their belly, plus the medications they need to stay healthy and alive. Right/Correct? It should be this way, but it isn't! People in these types of situations, young and elderly alike, that didn't ask to get these dibilating illnesses, cannot afford to pay higher health insurance premiums, it's just that simple.

199. Thomas Shieldd, Addison
I get my insurance from: Employer (self or household member)
My insurance company is: Blue Cross Blue Shield of Vermont

Our prices are already too high. Before increasing our costs, force the pharmaceutical companies to reduce their fees.

200. Dan Swainbank, Highgate, Vermont
I get my insurance from: State of Vermont (retired) Vt. Fish and Wildlife Dept. (self)
My insurance company is: Blue Cross Blue Shield of Vermont

15.6 % is a HUGE increase. I expect that the State of Vermont will not be increasing my monthly pension in order to cover that HUGE increase. The HUGE increase will be a financial burden for those of us on fixed incomes.

201. Sharon Whitehead, Enosburgh
I get my insurance from: VT Teacher's Retirement System
My insurance company is: Blue Cross Blue Shield of Vermont

As a retired teacher on a fixed income, this rate is just excessive! And thinking of all my colleagues who are still working and all the middle class families who are struggling to stay in the middle class, they would have to make some serious budget changes to afford their health insurance. Obviously something is broken in our system that these companies would even propose such a ridiculous request, but by passing this on to the consumer is just wrong. We are slowly being forced into a society of the very rich and the working poor. Please consider the impact this will have on the working and retired folks in VT.

202. Sarah Croitoru, Brattleboro
I get my insurance from: Employer (self or household member)
My insurance company is: Blue Cross Blue Shield of Vermont

Please don’t allow BCBS and MVP to raise the prices so much. I understand that because we are in a capitalist society, and due to inflation, costs increase. However, I can’t afford to pay more for insurance, and neither can my employer (a small non-profit service at risk youth, homeless youth, and youth/adults through resotrative justice and workforce development programming). I use my health insurance every week, multiple times a week. If the costs of insurance go up and I have to shift to a different plan with less coverage, I will not be able to maintain the care I am currently receiving for both

my mental and physical health. Quality healthcare should be a human right, and not something where people/organizations are making a major profit by increasing rates so much.

203. Becky Basiliere, Troy
I get my insurance from: Employer (self or household member)
My insurance company is: Blue Cross Blue Shield of Vermont

$1680/ month premium with a $7000 deductible already keeps my family poor. Because we work and pay our own way these costs keep us from being able to pay for other things that would better support the economy. I am a private PT. MVP pays me [redacted] for a service that BCBS pays [redacted] for. Why such huge discrepancies?

204. Diane Iorlano, St Albans
I get my insurance from: Employer (self or household member)
My insurance company is: Blue Cross Blue Shield of Vermont

BCBS has become terribly overpriced already. Those on limited incomes can barely afford their insurance now. I continue to struggle with why this happens and what to let go in order to remain insured. Why is there no other competitive market for insurance in this State? Is this what happens when all our eggs are put into one giant basket? Disgusting.....

205. Cassandra Fraser, Highgate Center
I get my insurance from: Employer (self or household member)
My insurance company is: Blue Cross Blue Shield of Vermont

Health insurance is expensive enough as it is, the problem with rate increases is that the coverage does not change. We're not getting any more or better services for more money, in fact, it just means that the insurance companies are just making more. People struggle already to have health insurance, so a rate increase as significant as 8-15% is enough to push someone out of their financial ability to pay for that, therefore causing them to decline coverage and go uninsured.

206. Polly Rico, Enosburgh
I get my insurance from: Employer (self or household member)
My insurance company is: Blue Cross Blue Shield of Vermont

I am a selectboard member for the town of Enosburgh and the rate hikes would have a great financial impact on town budgets. As of now, the town limits hiring of needed positions due to the insurance benefit costs, with a rate hike, this would be increased. Local budgets can not keep up with these increases.

207. Rebecca Fillion, Townshend
I get my insurance from: Employer (self or household member)
My insurance company is: Blue Cross Blue Shield of Vermont

Please do not increase premiums. It is difficult to afford health care for a family in VT.

208. Barb Greck, Essex
I get my insurance from: State of Vermont Retired
My insurance company is: Blue Cross Blue Shield of Vermont

People can't afford a price hike. Seniors and low income families of Vermont are being squeezed into poverty levels. Administrators, Executives, and Legislators don't quite understand that because they are not experiencing that. The boost in the economy has not helped people on fixed income.

209. Ian Hefele, Vernon, VT
I get my insurance from: Employer (self or household member)
My insurance company is: Cigna

Health Care is a HUMAN RIGHT. Stop the price gouging and let us catch up. If prices keep going up, where is it going to stop? Unrestrained growth in the biological world is called CANCER. I have a pre-existing condition and don't want us to go backwards. We need Medicare for ALL. Come on Vermont lead the way in the country

210. Kim Gates, Franklin
I get my insurance from: Employer (self or household member)
My insurance company is: Blue Cross Blue Shield of Vermont

The cost of health care is out of control! Individuals can't make ends meet. A 15% yearly increase makes going without insurance seem like a better choice. My currently monthly premiums are more than my house payments. Business are struggling to continue to offer insurance.

211. Joe Citizen, Swanton
I get my insurance from: Employer (self or household member)
My insurance company is: Blue Cross Blue Shield of Vermont

I can not afford another increase - I will be forced to look at other options somehow.

212. Jason, Enosburg
I get my insurance from: Employer (self or household member)
My insurance company is: Blue Cross Blue Shield of Vermont

What is the representation for this increase. What are the annual salaries of top executives and bonuses of employees that work there. Is it in line with VT wages? Cost of living in VT is at the Brink, wondering how much longer my family can afford to live here.

213. Linda Gustainis, Burlington
I get my insurance from: Employer (self or household member)
My insurance company is: Cigna

This increase is absolutely unjustifiable. Between UVM Medical Center acquiring every care provider within reasonable driving distance and a limited number of insurance companies doing business in VT we are being forced into obtaining care from a medical care monopoly where insurance companies and providers can charge any price they like because we have no other options available to us. Wages have not risen accordingly and the few employers who do offer insurance benefits are passing these increases to their employees share of the cost. The extreme cost of these plans is also going to discourage employers from offering health insurance to their workers at all. The reason for an increase of this size can only be to satisfy never-ending corporate greed (or possibly to cover gross mismanagement of funds). Insurance premiums rose substantially a year ago. Out of more than 50

highly developed nations the USA is the only one that does not provide health care to its citizens. Given that US life expectancy is decreasing and medical outcomes (particularly in maternity and women's health) are worse than those of nations where health care is provided to citizens, clearly the yearly increases on premiums is not being used to improve our quality of care. Stop feeding the medical insurance hogs! I urge you to protect Vermont residents from BCBS's and MPV's greedy appetites for profits and reject this price increase request.

214. Lars Hubbard, Vergennes
I get my insurance from: Employer (self or household member)
My insurance company is: MVP

It is utterly insane for insurance prices to rise faster than the price of anything else; as the prices go up, the level of service by the insurance companies goes down. The culture of "Health Maintenance Organization" has devolved to a culture of "Refuse All Claims", and we all suffer. We need national health care!

215. Jennifer Ploof, Franklin
I get my insurance from: Employer (self or household member)
My insurance company is: MVP

This potential rate increase only increases the likelihood that our family will not be able to afford health care treatment. Although we are able to purchase our insurance through our employer it is a high deductible plan. The rates and the size of the deductibles is out of control. Our two person max out of pocket deductible was 13,500, that is more than I as the second earner in our home make in a year. We do not go to the doctor or hospital unless it is likely we are dying. There is no such thing as preventative care, because although they will claim to cover it, they don't cover the lab costs that are the majority of the fees of those treatments. We will never be able to retire or put money in savings with high deductible insurance, and have to seriously consider whether we can continue to call Vermont our home. Please do not let this rate increase happen!

216. Leah, Montpelier
I get my insurance from: Vermont Health Connect
My insurance company is: Blue Cross Blue Shield of Vermont

No way! The costs is already high enough and “up to 15.6%” is too big of a jump. Maybe VT needs to have more than just two options of insurance providers available through Health Connect.

217. Shannon Trainer, St Albans
I get my insurance from: Employer (self or household member)
My insurance company is: Blue Cross Blue Shield of Vermont

We already pay some of the highest insurance costs! We do not receive 15% a year cost of living raises. It’s crazy the insurance companies make so much money a year. A 2% increase is reasonable not 8-15%!

218. Su White, Lincoln
I get my insurance from: Vermont Health Connect
My insurance company is: MVP

I’d like to know what these increases are financing.
I know insurance companies continue to garner profit while consumers of insurance struggle to pay

premiums and my healthcare costs may not be adequately covered. Higher costs should correlate to a better product. I haven't benefited from this with past increases.

219. Steven Robbins, Moretown
I get my insurance from: directly from BCBS
My insurance company is: Blue Cross Blue Shield of Vermont
The cost for insurance is already over the top expensive considering how much it does not cover!

220. Suzanne Young, Bomoseen
I get my insurance from: Vermont Health Connect
My insurance company is: Blue Cross Blue Shield of Vermont
Please keep rates down. VT Health connect and subsidies are so important in my life. Any rate will negatively impact my and my children's standard of living, which is incredibly modest as it is.

221. Connie Helms, Monkton
I get my insurance from: Vermont Health Connect
My insurance company is: MVP
This can be a hardship for many people. I am concerned about an increase higher than 5%.

222. Kevin Brennan, Monkton
I get my insurance from: Employer (self or household member)
My insurance company is: Blue Cross Blue Shield of Vermont
I cannot imagine another rate increase, let alone a 15.6% increase. We pay $26,533.00 in premiums for a health family of 4 with little to no health issues. It is unreasonable, unrealistic, and simply not sustainable to allow the insurance companies to continually institute such large prices increases. Health Care is a serious problem as we all know and something must be done. You can begin with stopping the bleeding of Vermont's citizens. Please, please, please put an end to the insanity. Not many business can sustain continued significant rate increases without losing customers or clients. The unique position that our State's insurers are in should not allow them to continually beat down their customers with continued claim denials and continued rate increases.

223. Samantha Langevin, Bristol
I get my insurance from: Vermont Health Connect
My insurance company is: MVP
I can barely afford health insurance as it is. The amount I spend each month is a significant portion of my income, and is affecting my ability to save money, or pay for the doctor when I have to go. I do not have a large salary, and yet I am routinely told I do not qualify for a larger subsidy. This is insane. A premium increase would mean that I could not afford insurance, period.

224. Carin Hoffman, Starksboro
I get my insurance from: Employer (self or household member)
My insurance company is: Blue Cross Blue Shield of Vermont
Please don't raise insurance next year! It is too expensive now!

225. Travis, Chester
I get my insurance from: Employer (self or household member)
My insurance company is: Blue cross blue shield of ct

No increase should be acceptable, we should be looking to cut costs. We should take after Henry Ford when he priced his cars. He set a price most families could afford and then figured out how to provide the car for that price.

226. Jaci Reynolds, Brattleboro
I get my insurance from: Vermont Health Connect
My insurance company is: VT Medicaid

This is awful. Folks can barely afford health insurance now. Stop this insanity. Please.

227. Donna Baker Whitcomb, Starksboro
I get my insurance from: On my own through BCBS
My insurance company is: Blue Cross Blue Shield of Vermont

NO! It increased this year to $1573.72 for just 2 people! I work part time and my husband is self-employed. When the phone company left the state I did cobra which was less money and a much better plan! The prices should decrease and more competition.

228. Matthew LeFluer, Alburgh
I get my insurance from: Employer (self or household member)
My insurance company is: Blue Cross Blue Shield of Vermont

We. The. People. Of. Vermont. Say. No. Rate. Increase. Because. Co-Pay. ECT. Would. Also. Increase. So. We. Vermonters. Respectfully. Decine. This. Action.

229. Janice McCann, Rochester
I get my insurance from: Employer (self or household member)
My insurance company is: Blue Cross Blue Shield of Vermont

I am [redacted] retired. My property taxes have gone up [redacted]. I cannot afford these increases. Neither can the people who work at low income wages. Pressures to pay these increasing costs when wages do not keep pace are not acceptable. Green Mtn. power is increasing rates, too. Soon I will not be able to keep my home and stay insured, it will be a choice between the two.

230. Julia James, Lincoln
I get my insurance from: Teachers Retirement
My insurance company is: Blue Cross Blue Shield of Vermont

Our premium is over $1,450 per month for two member family. One of us also pays a Medicare premium. This represents a very large portion of our income and does not account for Co-pays. Any increase will be of additional hardship for us to bear.

231. Alice Leeds, Bristol
I get my insurance from: VT Teacher Retirement Program
My insurance company is: Blue Cross Blue Shield of Vermont

At present I can afford my health insurance as a retired teacher. However, many Vermonters are struggling to find a way to afford health care as costs rise astronomically. I am also concerned that this issue, among others, is putting the VT teacher retirement program at risk, even though teachers have

contributed our part throughout our careers and have paid more and worked longer in recent years to maintain the commitment made to us.

232. Lisa Sullivan
Guess it's time for people to stop paying for healthcare. What happens when the money stops coming in?

233. Stacy, Bristol
I get my insurance from: Employer (self or household member)
My insurance company is: Blue Cross Blue Shield of Vermont
Please do not raise the premiums!!! Between the already enormous deductibles and the premiums, it's unaffordable now. We are so tight finacially as a 2 person middle class family - we can't possible pay more. Please do not allow these rate increases. Thank you

234. Lisa, Burlington
I get my insurance from: Employer (self or household member)
My insurance company is: Blue Cross Blue Shield of Vermont
I will not but it. I already pay too much for something I hardly use. It's a scam and only covers catastrophic diseases.

235. Emily, Middlebury
I get my insurance from: Vermont Health Connect
My insurance company is: Blue Cross Blue Shield of Vermont
We are a family of two young professionals. Like many young people in Vermont, our employers do not, or are not able, to offer health insurance. We therefore purchase our health insurance through the marketplace. We are eligible for small subsidies, however the cost of our monthly premium still represents a large portion of our take home pay. This is for insurance plans, that with high deductibles and out of pocket maximums, are essentially the equivalent of catastrophic coverage. We feel that having health insurance is the responsible thing to do and are lucky to be in good health. The high cost of insurance combined with lack of adequate coverage has resulted in us skipping annual physicals and largely avoiding the health care system. We would like to start a family in the near future, however, even an uncomplicated hospital birth would potentially result in thousands of dollars of medical bills. An increase in premium prices would deter more people from purchasing health insurance and accessing preventative care.

236. Cynthia Jones, Starksboro
I get my insurance from: Vermont Health Connect
My insurance company is: Blue Cross Blue Shield of Vermont
A 15.6% rate increase would result in $1200 more per year. That is more than I can afford. I have a hard enough time paying what I am this year.

237. Lorrie Fundis, Bristol
I get my insurance from: Vermont Health Connect
My insurance company is: MVP

It makes people choose to be able to go to the doctors or hospital or pay their bills. The cost of insurance is so high already plus needing to meet the deductible before any health care is covered. No rate increases please!

238. Cecil Foster, Bristol
I get my insurance from: SS
My insurance company is: Medicare

Although I appreciate that these are the only 2 carriers that offer health insurance in VT, I think that we need to take a stand and deny any increas s whatsoever. Both carriers need to be told no increases and sent back to their budget planning and review where they can trim their expenses. The first thing I would suggest to them would be for them to form a co-operative to increase their purchasing power and "just say NO" to the pharmaceutical companies. They should be able to find a way to buy prescription drugs from Canada for example to save end users money. My Doctor prescribed a drug that was going to cost me $200/month taking 1 pill a day. I pushed back against my pharmacist and he found a liquid form that I take a 7 ml dose with a syringe that costs me TWELVE DOLLARS a month instead of $200/month. There are solutions if people or companies work to find them- often times not easy to find, but they are there if people are willing to work to find them.

239. Lisa Shaw, Weybridge
I get my insurance from: Employer (self or household member)
My insurance company is: Cigna

No, my daughter lives just above the poverty line and doesn't qualify for Medicaid and can't afford the outrageous cost of insurance in Vermont. Shame on all of you for not finding a path to support the right of all Americans to have access to health care and continue to support the wealthiest Americans who can. Why not take Blue Cross and Blue Shield profits and support insurance for all

240. Rev Dechen Rheault

To the gmcb board: I am writing to voice my disbelief that again the insurance companies are requesting an increase in costs to Vemonters who are already struggling to keep up. Costs of food, housing, vehicles, taxes etc have continually been on the increase and most people end up going bankrupt because they cannot afford to live. You have an obligation to the people, not to corporations, to vote for a balanced system, whereby everyone benefits. Insurance executives do not need to make 120% more then those who can barely get by. I encourage you to consider your decision wisely and take care of the people through voting NO to allowing these insurance companies to take more from Vermonters. Thank you.

241. Diane Saunders, Bristol
I get my insurance from: Vermont Health Connect
My insurance company is: Blue Cross Blue Shield of Vermont

I'm about at the point currently where it's beginning to be a choice between food & electricity & paying my property taxes & health care/health insurance! I'm not a young person & am beginning to have some minor health issues which has me looking towards retirement but which are starting to effect

my career. If I have to give up my job, there's NO WAY I can withstand another increase in my health insurance!

242. Shannon Freehart, Irasburg
I get my insurance from: Vermont Health Connect
My insurance company is: MVP

I appreciate the current rate that I pay because I can afford it along with my co pays and prescriptions that are not covered. However, if the rate keeps increasing, it will be difficult for me to maintain medical insurance on the income that I earn. Health is so important not only to the individual but on a larger scale that effects the work place and the communities we live in. If health insurance wasn't an option for me, I wouldn't be able to attend to the things affecting my health that contribute to my quality of life.

243. Brian, Bristol
I get my insurance from: Employer (self or household member)
My insurance company is: Blue Cross Blue Shield of Vermont

This is ridiculous. Higher rates will force more Vermonters to have to chose between putting food on the table, paying bills or having health insurance. Wait times for an appointment are 6 months in some cases due to understaffed medical care services. Stop raising rates to provide the same poor, untimely, overpriced service. People with the means to will continue to leave this overpriced state and live elsewhere. Those that can't leave will suffer a slow death.

244. Mike, Lincoln
I get my insurance from: Employer (self or household member)
My insurance company is: Blue Cross Blue Shield of Vermont

My wife and I are self employed, we make enough money to keep us from getting assistance, yet our cost for a very poor plan is costing about $900/mo. The State assists those less fortunate, so the cost to fund this has to come from tax payers. A lot of people (not all) on assistance do not want to better themselves for fear of loosing assistance. I can't blame them and I don't. However, this is un sustainable. If those people push to get ahead they essentially get punished by loosing there assistance and are in some cases worse off. It's time for a universal type program-get the insurance company's out of the picture, create a new plan. Think about HEALTH CARE.....not HEALTH INDUSTRY!

245. Mike Block, Starksboro
I get my insurance from: Employer (self or household member)
My insurance company is: Blue Cross Blue Shield of Vermont

Don't. I pay almost 15k/yr for my family and the deductibles alone are killing us. Please don't make this more of a burden.

246. Chris Brigham, Bakersfield, VT
I get my insurance from: Employer (self or household member)
My insurance company is: Blue Cross Blue Shield of Vermont

My question is where does this end? Rate increases of 8-15% while our wages increase 2-4%. It's a losing battle. In a short time I will be considering retirement and the biggest consideration is health insurance coverage. It's like having a mortgage. Something has to give somewhere. I would advocate that health insurance, if it is going to be on the free market, that it be priced like auto insurance. The

more claims you make dollar wise the more you should pay. Either that or go with universal health care. The current system is so unfair. Low income households get huge breaks and the middle class picks up the difference.

247. Joyce Rublee, Starksboro
I get my insurance from: Employer (self or household member)
My insurance company is: Blue Cross Blue Shield of Vermont

These increases are not covered by my employer as they only pay for a percentage of my health insurance. Since I am on the family plan, I will end up losing an additional $345 per month, or $4,139 per year of my salary, for my family to have health insurance. Financially, this is a very real and scary burden for me, or ANYONE to have to carry! When do these types of increases end? If the cost of living only goes up by 2 or 3% per year, how can they expect people to be able to afford a 15.6% increase!

248. Jeff Spiegel, Corinth
I get my insurance from: Employer (self or household member)
My insurance company is: Blue Cross Blue Shield of Vermont

Our premiums are already too high, especially since my wife and I are retired and are on fixed incomes. I would question the large salaries of the company's CO's and am serious in suggesting their wages get adjusted to meet the cost challenges Blue Cross and Blue Shield are facing. At what point do these habitual premium increases become just as expensive as a statewide health insurance plan for all Vermonters based on their annual incomes? I'd like the Green Mountain Care Board to consider both a short range plan for addressing current needs with a long range plan to address anticipated needs. Vermont has an increasingly older population and a smaller younger population to help share the cost of a statewide plan. The board needs to think creatively about how to resolve this recurrent problem. Anyone consider taxing marijuana? It's a revenue source that has yet to be tapped and provides one possible way to find other funding opportunities.

249. Katharina Mack, Washington
I get my insurance from: myself
My insurance company is: Blue Cross Blue Shield of Vermont

BCBSVT already increased their rates last year by a significant amount. They are making enough of a profit. I don't see why they would get away with a rate increase. How is their CEO making $500,000/year when they are supposed to be a nonprofit? When will Vermont start to care about its people instead of its corporations or so-called nonprofits?

250. Heather and Todd Beauregard

I am a teacher and already pay A LOT for my Health Insurance and have to do A LOT of work since previous changes. In order to afford my plan I have to do all the leg work in paying huge bills with my HSA money that I receive in small increments over the school pay period. Sometimes there's no money to pay for the deductible amounts I'm required to pay. If insurance prices keep increases it seems my best option may be to quit my job see what I can get for State insurance! 15.6% rate increase for Blue Cross is ridiculous! My husband and I are seriously considering selling our home and moving to another state. Don't let Blue Cross take MORE of Vermonters' money!

251. Heather Beauregard, Franklin
I get my insurance from: Employer (self or household member)
My insurance company is: Blue Cross Blue Shield of Vermont

The proposed 15.6% rate increase by Blue Cross is ridiculous! If Vermont wants to keep its working families here they need to stand up for us! Otherwise we'll be looking at other more affordable places to work and live.

252. Mary, Bristol
I get my insurance from: Employer (self or household member)
My insurance company is: MVP

You should say no, my insurance has such a high deductible and costs so much it is not even funny Most the time I choose not to go to the dr even when I should as my insurance doesn't cover anything unless I have already met the 3500.00 deductible it already costs way to much

253. Eric Davis

I am very concerned about the impact of BCBS' proposed premium increases for 2020 on two groups of Vermonters who purchase coverage through the individual insurance market: (1) self-employed Vermonters whose income exceeds the maximum amount for ACA subsidies; and (2) near-retirees whose income exceeds the maximum amount for ACA subsidies. The proposed rates for 2020 on page 100 of BCBS' filing indicate that premiums for the "standard" plans would increase by the following percentages: Platinum, 17.3%; Gold, 18.5%, Silver, 15.2%, Bronze, 14.2%. I suspect there are very few Vermonters in the categories of insured referred to above whose income will be increasing by 14 to 17% next year. In addition to the premium increases, BCBS proposes to increase deductibles, co-pays, and other out-of-pocket costs at all levels of plan design. If the proposed increases were to go into effect, a single Vermonter with an annual income of $75,000 would pay the following percentages of his/her income for a BCBS plan in 2020: Platinum, 14.8%; Gold, 12.8%; Silver, 11.9%, Bronze, 9.1%. A two-adult household with an annual income of $125,000 would pay the following percentages: Platinum, 17.7%; Gold, 15.3%; Silver, 14.3%; Bronze, 10.9%. Surely payments of this magnitude would have to be considered "unaffordable." The ACA "affordability" calculations assume that anyone paying more than about 9.5% of their income for health insurance premiums is in an unaffordable plan. Under BCBS' proposal, just about all Vermonters in the individual market whose income exceeds the ACA subsidy maximums would be in an "unaffordable" plan. It is also difficult for health care consumers to understand why BCBS needs to increase rates by double-digit amounts when both the GMCB and the hospitals tout their success at holding down health care cost increases by keeping hospital budget increases to the low-single-digit levels. I realize BCBS probably expects the GMCB to cut its proposed rate increases, as has been the case in previous years, and has "padded" its rate increase requests accordingly. However, I believe the GMCB needs to look at the impact of health care costs on the entire Vermont economy, not only at the actuarial projections submitted by BCBS. I believe that the GMCB should cut BCBS' proposed rate increases to an amount no greater than approximately two times inflation, or about 6% in the aggregate. Any increases greater than that will only exacerbate the crisis of health care affordability in Vermont for middle-income households.

254. Aaron Smith

Hello Care Board Member, My name is Aaron Smith. I am married and have two children. I was born, raised and continue to live and work in Vermont. I changed from working 21 years at a larger company who subsidized the cost of insurance, to working for a small Family owned company with three regular employees. This transition was a little less than two years ago. Since that time I have been made acutely aware of the cost of health insurance and have contemplated why pay to insure my family at all? It's hard enough to figure out what coverage is best for your situation when hunting for insurance as an independent rate payer. Trying to figure out what's covered and what's not with deductibles, in network, out of network etcetera. Add to that the proposed average rate of increases of 15.6% and 9.4% from BCBS and MVP respectively, And after the substantial increase last year that went through for MVP. That increase caused me to switch to BCBS and if the current increase is even close to the proposal it will be more than my family can bare. The cost for my current coverage is right around $20,000 annually and we rarely use medical services. I believe if you could find hard data you would see some startling statistics about small companies and people that own and operate a small businesses. I think you would find the burden of insurance is one that is so great that a large number of people either decide to close up shop and find a larger employer or forgo insurance altogether. Which is seriously detrimental to the Vermont economy. I hope you take a very hard look at the proposed increase to determine is it necessary for the availability of quality care or just to make a profitable company more so. If the proposal goes through take note you will have many more people opt out of insurance. with my family being one of them.

255. Vermont Center for Independent Living, Montpelier
I get my insurance from: Employer (self or household member)
My insurance company is: Blue Cross Blue Shield of Vermont

Our staff have received exceptional customer service from Blue Cross Blue Shield. We can't begin to imagine how difficult it is to balance premium costs, access to care, and maintaining an adequate level of surplus so that the company's solvency levels provide for it's longevity. That said, our organization is a non-profit who will have to make some excruciating changes to our benefits package if our premiums increase by 15.8%. As a non-profit that has a staff of 90% of people with disabilities, our board of directors is dedicated to offering a strong health insurance package to our employees. With a $30,000 increase to our annual health insurance costs, we might have to cut a staff person or provide less services to people with disabilities.

256. Stephanie Solt, Burlington
I get my insurance from: Blue Cross and Blue Shield VT
My insurance company is: Blue Cross Blue Shield of Vermont

Please don’t raise your rates! Health care costs are already high!!!!

257. Pamela Lathrop, Bristol, VT
I get my insurance from: Employer (self or household member)
My insurance company is: Blue Cross Blue Shield of Vermont

Unsustainable for my family to pay that much an increase. Will drive us out of Vermont to a state with cheaper living costs.

258. Cassandra Hemenway, Montpelier
I get my insurance from: Employer (self or household member)
My insurance company is: Blue Cross Blue Shield of Vermont

My household can barely afford the deductibles and co-pays - which make something simple like an x-ray for a hip injury cost us $600, as an example. The message we get is: don't get health care. Even if you are "insured" it will cost so much you'll wish you skipped it. Where is the increase going? Are we seeing top executives take pay cuts from six or seven figure salaries to account for this?
I am a small business owner.

259. Chris Marion, Bristol Electronics

The only way that I could afford health insurance this year was through VACE as I never know what my actual income will be so going through the exchange was more expensive. I was heavily penalized in a previous year when our company wasn't doing as well through the first ¾ of the year and then came out much more profitable than expected because of the last quarter, thus kicking my income level over the threshold. I don't ask for help unless it is needed and during that year, I needed help for most of the year. Lumping the assistance into a yearly income basis makes it incredibly difficult for those of us that don't really know what our "income" will look like annually until the year is mostly done. I have heard that health insurance companies are requesting yet another rate hike for next year. I already struggle to pay my health insurance premium and can't imagine how people do it when they make less than I do. My husband died four years ago. Since then I have been doing my absolute best, but living with 2/3 less of a household income because he is no longer here to make that income has made if difficult. We always struggled, but lived within our means and I work hard to continue to do that…however it is difficult. I don't go out to eat, do things that cost money or buy things that I "want" but don't "need". I have a roof over my head and food in my belly. The health care system is very broken. I cannot even imagine a fix, however increasing the cost being charged to every insured to cover the expenses is not going to work much longer. People will stop carrying insurance because it is just to expensive and they have to make choices between their necessities. If there is ANYTHING that you can do to reduce the cost of insurance, please do it. I pay [redacted] per year for my mortgage and real estate taxes. I am very lucky that we bought the house in 2003 and my late husband was able to complete the necessary renovations to make it livable. I will pay $6,100.00 for my health insurance this year. At what point should health care insurance cost 60% of what someone pays for their home? And now they want more. I am struggling this year because the winter was very slow. The summer has picked up, however I believe I would have been much better off to go through the exchange now that we are part way through the year. We are playing catch up, but thankfully have business coming in and the work crew is busy. I plead with you to do anything possible to fix any part of the health care industry. If it is possible to say "NO" to the increase in health insurance costs to those of us footing the bill, I challenge you to do that. We need that. We desperately need it. The costs are to high already. People are making choices between their health care and their necessities like food and fuel.

260. J V, Barre
I get my insurance from: Employer (self or household member)
My insurance company is: Blue Cross Blue Shield of Vermont

Having been involved in the management of a small business for over 20 years, I can't fathom why the Cost of Goods Sold side is never the focus. In our business, increasing revenue is rarely accomplished successfully by simply raising prices. On the revenue side, we have to focus on increasing market share or offering a new or better product. I guess in a monopoly situation it's much simpler. We are being asked to pay another 16% for an essential service. No mention of what games they will play with deductibles? Increases like this have been routine year over year. Inflation has been practically nonexistent for a decade but year over year, this product is increasing 15% or more? The reason...cost of services? What efforts have been made to control costs? Have independent firms been to hospitals or other providers to investigate whether they are overstaffed in management, care, or other? After all, health care is consistently the industry that shows strong employment growth. What is the staff to patient ratio? What is optimal? Schools have a teacher to student ratio, what is ideal in the health care industry? Is management effectively handing their capital funds? What do they spend per square foot on expansion or renovations versus private sector construction? The figures for some of these construction projects are out of this world. After visiting them, it's obvious that a premium is placed on aesthetics not practicality and we all pay for it...monthly. Whether they need satellite space and whether they are paying market or excessive rents for space? Whether they are handling their collections properly? Who is watching the expense side? All things I would not care about if it wasn't literally a matter of life and death or if I could shop around for my care but unfortunately, the only choice we are given is to pay one of two insurers. Those insurers pay these care providers so if costs are out of control it concerns me. I have recently required medical services for various reasons and have made the following observations about the medical industry: In almost every visit I was the only one or one of few in the waiting area. When I was walking to the examination room, I walked through heavily staffed areas. If that is normal, staff levels in these facilities seems to far exceed what they need to be. Another thing I noticed not only here but in Florida was that the chance of being treated by an actual physician versus a Physician's Assistant or RN is slim. Rn's and PA's seem to have replaced doctors which I can only assume is the result of a lack of doctors or a cost cutting measure. Either way, why have the cost of services not been adjusted downward with the level of expertise? I understand that Blue Cross and MVP are simply collecting premiums and paying service providers rates they have established but unfortunately, from a consumer's perspective, we have to look to the insurers to fix their cost issues without simply passing them through to us. Regrettably, I have to go back to work now because I owe the hospital money from prior procedures that I pay them monthly for, my family plan is $1894 per month, $22,728 per year, and I could be out of pocket close to $6000 this year! For those who enjoy putting things in perspective, if I happened to get sick, I could pay up to $30,000 this year for health care. In a standard year, most people work 2000 hours. That means my health care cost could cost me $15/HR! Not right....

261. Parker Kennedy Rea, Montpelier
I get my insurance from: Vermont Health Connect
My insurance company is: Blue Cross Blue Shield of Vermont

Unreasonable growth in bureaucracy has led to the price increases and I am against them unless the same percentage in growth is passed along to health care providers in the form of increased reimbursements and pay. But I feel sure that won’t happen.

262. Daniel McManus, Manchester Center
I get my insurance from: Employer (self or household member)
My insurance company is: Blue Cross Blue Shield of Vermont

I am opposed to such a drastic increase. Vermont is increasingly becoming unaffordable for working families. Our copays just increased this past January. This, coupled with the high costs of childcare is creating a significant burden for young, working families, families that Vermont needs. Rather than offering incentives for people to relocate to Vermont, Government should be focused on making the State more affordable for those who reside here.

263. L. Field, Milton
I get my insurance from: Employer (self or household member)
My insurance company is: Blue Cross Blue Shield of Vermont

BCBS needs to get themselves in order...each year it's another on average 10% request....it is not sustainable....people are not seeing these types of increases in their incomes....states cannot raise higher taxes....NO NO NO They should be able to make do with the increases from the last several years!

264. Joanna VonCulin, Middlesex
I get my insurance from: Employer (self or household member)
My insurance company is: Blue Cross Blue Shield of Vermont

There needs to be universal health care. Health care costs in the US are a disgrace.

265. Kira Kelley, Windsor, VT
I get my insurance from: Employer (self or household member)
My insurance company is: Blue Cross Blue Shield of Vermont

This price increase is unacceptable. I will be 26 this year and face the prospect of getting kicked off my parents health insurance plan, which leaves me in quite a bind. I currently work for a public service law firm that gives free legal support to people who make the world a better place. The work I'm doing is hard, but incredibly necessary. I get paid about 10% of the salary that a typical attorney makes and have no benefits, because people doing work that benefit the community do not get paid the same amount as people who do work that turns a profit at the expense of others. I can't afford health insurance on my own at the current prices, let alone with an increase. This will wreck our state as people who do what they love, who do what benefits other Vermonters, will be forced to abandon the public service sector in search of jobs with better pay and benefits. This increase would have a ripple effect, with catastrophic long-term consequences.

266. Phyllis Etienne, Williston
I get my insurance from: Employer (self or household member)
My insurance company is: Blue Cross Blue Shield of Vermont

I thought Obamacare was going to make things more affordable?

267. Risa Rae, So Burlington
I get my insurance from: Vermont Health Connect
My insurance company is: MVP

The cost of health insurance is astronomical. I feel a rate increase is unethical in the goal of providing affordable health care. Of course, I'm not sure that Health Care Companies (for profit) have that as their main priority. I was unfortunate to have an acute injury last fall which cost me over $7000.00 out of pocket... that was in addition to health insurance premiums. It's just not sustainable in my opinion.

268. Melissa, Burlington
I get my insurance from: Employer (self or household member)
My insurance company is: MVP

My family cannot afford this increase. I do not support this increase.

269. Rachel Foxx, S. Burlington
I get my insurance from: Employer (self or household member)
My insurance company is: Blue Cross Blue Shield of Vermont

The increase is astronomical and economically pushing people further from making ends meet, and further from being able to afford private health insurance. If this increase happens, I will have to seriously look at cancelling my policy and look into public insurance, like so many other people in Vermont. Please do not approve this huge increase!

270. Donna Church, Williston
I get my insurance from: Employer (self or household member)
My insurance company is: Blue Cross Blue Shield of Vermont

The rate hikes each year with less services provide is not a sustainable model for health insurance for Vermonters. Let’s compare the company profits, management salaries and bonuses and see if there is truly a need for this increase. BCBS is behind on their paperwork to customers and yet they feel they deserve a 15% increase. This is outrageous and will soon push my family out of the healthcare market.

271. Karl Neu, Underhill
I get my insurance from: Employer (self or household member)
My insurance company is: Blue Cross Blue Shield of Vermont

This rate increase must be blocked. This works out to an $1100 increase for just one individual in my household with BCBSVT. For the two of us it's over $2k increase. Our employers pay for 80% of our health insurance so not only will he have the burden of about $200/ea, our employers will have to cover this which means they lose out and so do their employees. My insurance is through an association health plan because our company has less than 5 employees on the health insurance plan. Those will no longer be allowed next year which makes it even more important to not allow insurance premiums to go up.

272. Sarah Jackson, Randolph Center
I get my insurance from: Employer (self or household member)
My insurance company is: Blue Cross Blue Shield of Vermont
Please do not increase premium prices. They are already too high.

273. Joy Partridge, East Montpelier
I get my insurance from: Employer (self or household member)
My insurance company is: Blue Cross Blue Shield of Vermont
I just turned 60, I have a good full-time job and make a good salary - but not an excessive one. My employer offers BC/BS plans. The one I can afford has a very high deductible - $7000. Fortunately, I have never even come close to my deductible. Unfortunately, none of my medical care is ever covered, even though I pay a hefty amount from every paycheck for health insurance coverage. I have no idea how those that do not have resources such as I can ever begin to make this work.
There is something wrong with this picture. Thank you - Joy Partridge

274. Karen Budde, St. Johnsbury
I get my insurance from: Employer (self or household member)
My insurance company is: Blue Cross Blue Shield of Vermont
My employer pays $500 toward my insurance, and I pay $70 each pay check. I take home $1600 each month. My spouse and I exercise, eat well, and stay current on our health checks. We are healthy Vermonters paying too much for health care already. Enough is enough. Figure this out to let us have $ to put into retirement.

275. Karie Atherton, Berkshire
I get my insurance from: Employer (self or household member)
My insurance company is: MVP
We can not afford an increase. Insurance is purchased through my husbands work. I am a 7th generation dairy farmer transitioning into full ownership. We have had 5 terrible financial years in this industry. While the older generation exits the industry, there is not enough money for me to draw an income. Our family has gone from a 2 income household to a 1 income household. Long hard working hours for no weekly pay.

276. Loreen Benner, So Burlington
I get my insurance from:
My insurance company is: I don't have health insurance.
My husband died, when he did there went my health insurance. I have checked around and it is outrageous that the so called "affordable health care act" is not affordable. If I try to get health insurance I can't the mortgage he left me with, if I don't get the insurance I will be penalized when I do my taxes next year. How am I to get health insurance at the current prices they are today and they want an increase? I have to work two jobs just to try to make it work. And neither job has given me a raise. One I work for I have been doing for 5.5 years and I have yet to see an increase in my paycheck. This system is horrible, prices are horrible and it is taking advantage of people that can afford it.

277. Gretchen Stern, Colchester
I get my insurance from: Employer (self or household member)
My insurance company is: Blue Cross Blue Shield of Vermont

As a nonprofit administrator this proposed price increase distresses me personally and professionally. Every year our organization strains to keep up with rising costs of health insurance, and every year we struggle more with how to adequately offset the high prices of insurance for our employees while also meeting the organization's budgetary needs. My concern is that health insurance price increases keep a faster pace than other economic increases which would offset this burden for both employers and employees.

278. Rosann Kramer, Underhill
I get my insurance from: Pay MVP directly
My insurance company is: MVP

It will make health care even more unaffordable. My current premiums are over $12,000 per year for just my husband and I, who are healthy, [redacted]. I have a high deductible and my one and only prescription is NOT covered by my insurance. My out of pocket costs for my [redacted] and then my deductible should I need to go into the hospital make my health care costs skyrocket. At this point my health care coverage is basically CATASTROPHIC coverage as long as whatever I get is covered and the treatment is not considered experimental or out of network. I do not feel I have a value for what I am receiving as coverage now, so I do not approve of any price increase.

279. Christiane Kokubo, Starksboro
I get my insurance from: Employer (self or household member)
My insurance company is: Blue Cross Blue Shield of Vermont

A few months ago I read in Seven Days how much the CEO of BCBS of VT made per year. Is this why they want to increase the premium prices? Do they know what the health care reality in a rural state like Vermont is? This is disgusting.

280. Debbie Deale, Charlotte
I get my insurance from: Employer (self or household member)
My insurance company is: Employer sponsored

It is already too expensive. I was forced to turn down a job opportunity because I could not have afforded to put my family on the BCBS VT plan - even with a high deductible plan, the cost is completely out of sync with current salaries. The whole point of ACA was so people would not be locked-in to their employer plans... but we are because the private plans are so incredibly expensive. When the cost of a even a HIGH deductible plan exceeds that of your mortgage - this should be HUGE concern to politicians who meddled with the health insurance/care industry and made it even more expensive than it was.

281. David Miskell, Charlotte
I get my insurance from: Vermont Health Connect
My insurance company is: Blue Cross Blue Shield of Vermont

The exorbitant price increases have to stop. I am retired after 46 years of farming and I can barely afford my present expenses. there is no way I can afford such health care increases. Tell the hospitals to cut their not needed expenses.

282. Marion Paris, Charlotte
I get my insurance from: Retired - Medicare
My insurance company is: Blue Cross Blue Shield of Vermont

I think the raise of 25.7% is to steep and should not be granted. I recognize that VT. 's population is older and perhaps costing more to meet their medical needs. Too many VTers are on a fixed income and can simply not afford this much of s jump. I would ask the Company Exucutives what they received for last year as a bonus and what they expect for this year, etc. Is there a decrease here or an increase! I would question where there might be cost savings in other areas thereby reducing the size of an increase in preminiums.

283. Darla Senecal, Bristol
I get my insurance from: Employer (self or household member)
My insurance company is: MVP

Health insurance costs are an issue for many people I know. Forcing decisions to work longer, more years, or hold more than one job in order to pay premiums or just not going to the doctor until you “really” need it. For fear you will be dropped or costs will increase,
Add this to high housing and food costs and that makes for a lot of stress and poor quality of life. Vermont cannot continue to tout being a great place to live if only a small percentage can afford to be heat. Please help Vermonters afford to stay here.

284. Ken Lerner, Burlington
I get my insurance from: Self pay
My insurance company is: Blue Cross Blue Shield of Vermont

Concern with added cost. Retired people on fixed income will be unduly effected by such an increase. We currently pay around $1200/month which is approximately 20% of our income. If any changes made it should be income sensitive.

285. Monique Hayden, Williamstown
I get my insurance from: Vermont Health Connect
My insurance company is: MVP

For 15 years I been on the nonclinical side of medicine, working with patients to schedule appointments, explain insurance, and obtain authorizations. I have also spent time transcribing visit notes and coding medical encounters. I have seen a lot of change in this time but not a lot of improvement. Paperwork has increased while the clinical side of medicine has decreased. It’s become more about forms and authorizations, obstacles to care, than thoughtful, personal plans of care. So, my first question is have these companies done anything to earn this increase. It concerns me that a majority of patient bills contain errors. Even when correct, medical bills are not patient friendly. We should insist that bills are correct and that patients can understand what was done, when it was done, what (each) insurance is paying for, and how much of what is left is owed by the patient. It concerns me that insurance is now increasingly dictating not only what drugs will be covered but what pharmacies must be used. Equally alarming is the frequency in which insurers stop covering specific drugs. We need to ensure stability for patients with chronic conditions relying on specific drug combinations, many of which took months of adjustments to refine. It concerns me that doctors’ clinical knowledge is being undermined through blanket insurance guidelines, requiring tests unwarranted for a particular clinical presentation. For example, it’s common to require a plain film x-ray before approving an MRI. Though x-rays may not be diagnostic in a particular case, the patient is being forced, by virtue of insurance

requirements, to be exposed to radiation before the diagnostically relevant test, the MRI, can be approved. This needs to stop. We need to curb these abuses of power routinely utilized by insurances to set the rules of the game, discouraging doctors and patients from accessing services deemed by insurance too expensive or too risky. These rate increase requests are an opportunity to begin addressing deficits on the insurance side and bring back into balance the doctor-patient relationship versus the herd mentality and preserving the bottom line of the insurance companies.

286. Finn Yarbrough, Ferrisburgh
I get my insurance from: Recently Employer, up until now, VHC.
My insurance company is: Blue Cross Blue Shield of Vermont

We cannot sustain or afford an increase in health insurance premiums. I was self-employed for 10 years with my own business and had to close it down in order to seek employment, primarily for health benefits for my children. Even so, as a part-time skilled medical employee, more than half of every paycheck disappears into health insurance premium. If this seems like a bad deal, consider: before I took this job, my wife and I (not including children) were paying $850 per month for catastrophic insurance with a $15,000 annual deductible. I understand that the problems with paying for healthcare in this country are larger than just what is happening in VT, but somebody needs to take a stand for us. If our public institutions won't do it, what recourse do we have?

287. Gardner Merriam, New Haven
I get my insurance from: Pay 100% myself
My insurance company is: Blue Cross Blue Shield of Vermont

Please dont allow the rate increase. As a retired person on a fixed income, this rate increase alone will cost an additional $1475/ year. Added to the increase in my property tax bill of [redacted], I will have an additional expenses of [redacted]. Not sustainable!

288. Chea Evans, Charlotte
I get my insurance from: Vermont Health Connect
My insurance company is: Blue Cross Blue Shield of Vermont

In the 8 years we've had Blue Cross Blue Shield of Vermont, our monthly payments have nearly doubled. For our family of 5, we are currently paying over $1,800 dollars a month. With a 15% increase, our monthly bill would come to over $2,000. We pay for insurance out of pocket, not through an employer, and the cost is already prohibitive and would be completely unreasonable were it to increase any further. With each yearly increase, our benefits either remain the same or decrease, it's more and more difficult to find quality care in a timely manner, and we're spending unreasonable amounts of money with a $5,000 deductible for very little benefit. This is outrageous, it's robbery, it's lining the pockets of the UVM health services and their monopoly, and the insurance company, and nothing else. I urge legislators to really think about what this means for Vermonters and for our state's economy--every dollar that goes to insurance premiums is a dollar that isn't being spent in our local stores, or donated to a local charity, or supporting our schools. I am STRONGLY opposed to any increase at all. Stop this madness.

289. Sherrie Lowe, Waterbury
I get my insurance from: Vermont Health Connect
My insurance company is: Blue Cross Blue Shield of Vermont

I am self employed. I work very hard. I dont spend outside my means. I cant afford to go to the dentist. My premium is $645.44 and it takes all I have just to pay that. I cant afford to get my eyes checked. [redacted]. I cant afford to go to the specialist because its $75 for every time to go to specialist for treatment. Its a very high premium in addition to raising the copays on everything. I ask you not to increase the rates. I say no. I had to increase the rates of my business and people fought against that for a $5 increase, and its just to pay my health care expenses. Thank you.

290. Beth Stern, Marshfield
I get my insurance from: Employer (self or household member)
My insurance company is: Blue Cross Blue Shield of Vermont

I am the director of a non-profit agency serving older Vermonters in central Vermont. Raising health insurance rates by 15% would be an extra $37,000 for my agency. What could we do with $37,000? That would buy an extra 10,000 meals on wheels for older Vermonters. Or we could pay for 1800 hours of respite for a caregiver of someone with dementia. We could hire a part-time nutrition assistant, or someone to help clients figure out Medicare Part D insurance. The money has to come from somewhere and our agency is not seeing federal or state increases to cover these costs, nor do we feel it's fair to pass them on to our staff. Please strongly consider drastically reducing these rate increases.

291. Michael Braun Hamilton, Middlesex
I get my insurance from: Employer (self or household member)
My insurance company is: Cigna

This is unreasonable. I feel that insurance companies and their administrators already have enough money. I want to say that if their budgets are tight, a 15.6% reduction in their salary would be a more viable solution; that if they are so hard-pressed to make a living they could lobby Congress to incentivize creating a more equitable health care system that benefits the majority, rather than the select minority, because that is what a civilization that is sustainable would do as best practice.

292. Maureen, E Montpelier
My insurance company is: I don't have health insurance.

They have a lot of nerve in requesting this HUGE rate increase! People cannot afford health insurance already. An increase just makes matters worse. It is way past time for the U.S. (or at least Vermont) to do an entire overhaul of the health CARE system. It is shameful the way things are now. The current system is all about the big companies and not about the people.

293. Karen Hart, Essex Junction
I get my insurance from: Employer (self or household member)
My insurance company is: Responding on behalf of the small business that I manage, we use BCBS

How are small businesses in Vermont possibly supposed to stay open and provide halfway-decent wages and benefits to our employees? The cost of health care is already prohibitively expensive for many. If my business raises our prices enough to cover the rising costs of employment and provide properly for our staff, our services become too expensive for a large majority of Vermonters to afford. How long can we fight this downward economic spiral? How can we afford to live here, let alone run businesses here?

294. Kirsten Nagiba, Colchester
I get my insurance from: Vermont Health Connect
My insurance company is: Blue Cross Blue Shield of Vermont

It is already way too expensive!!!! It is a real burden as is and these yearly increases on top of high deductibles, coy pays and prescriptions is just not sustainable. It takes up a huge chunk of income. Soon it will be impossible. There is no reason to increase it by so much every year.

295. Andrea Todd, Burlington
I get my insurance from: Vermont Health Connect
My insurance company is: Blue Cross Blue Shield of Vermont

I'm self-employed and the costs of insurance continue to be significant expenses. I currently spend a minimum of $8,000 a year, not including co-pays, AND that's for a $3,000 deductible. This money I'm spending is not building my business, it is not an investment in community, it is a major tax on my business. Another major increase will be too much!

296. Sharon Zukowski, Essex
I get my insurance from: Vermont Health Connect
My insurance company is: Blue Cross Blue Shield of Vermont

This is an issue with our current government sabotaging the health insurance system for political purpose, causing people to be uninsured or to limit important checkups, doctor's visits and procedures. In addition the system is so complicated that many aren't receiving benefits or premium supports as they don't know how to get them. These increases will make things worse.

297. Matthew Musgrave, Montpelier
I get my insurance from: Vermont Health Connect
My insurance company is: MVP

Absolutely not. The service provided by VHC are so bad. My personal health has been affected by their lack of commitment to people being covered. They made a mistake in billing which caused a lapse and I couldnt get necessary prescriptions. Now Ive again been trying to pay my bill for days now and not getting a response. It is criminal to think that giving these people more money makes any sense. I am already paying almost as much as my rent, and receiving zero benefits until I pay ridiculous deductibles and copays. Its time for the VHC to cut their fat instead of asking rate payers for more money with no justification. No new services, no better plans means NO MORE MONEY. There is no reason we cant abolish VHC and people needing subsidies can use the federal platform. Vermonters dont need their "own" portal.

298. Kelley Sachs, Norwich
I get my insurance from: Employer (self or household member)
My insurance company is: Cigna

Don't let them do this. The cost to insurers of doing business has not changed appreciably; there is no justification for these rare increases.

299. Rev. H. Michael Gruteke, Derby
I get my insurance from: It is provided for me as a disabled vermonter
My insurance company is: Medicaid/ medicare

I had much better Health Insurance when my father taught the only thing I would say is they ought to be monitored somehow, if there is nothing in place to do this , the rates ought to stay where they are.

300. Kristen, Burlington, VT
I get my insurance from: Employer (self or household member)
My insurance company is: Blue Cross Blue Shield of Vermont

The current costs of health insurance are already very high & if they increase many more will not be able to afford it.

301. Fran Graham, Alburgh
I get my insurance from: Employer (self or household member)
My insurance company is: MVP

Please do not increase it...we can not afford it and neither can the employers.

302. Sjon welters, Cabot
I get my insurance from: Vermont Health Connect
My insurance company is: MVP

It is inconceivable that health insurance premiums, which are already unrealistically high, would get even higher. It is the same as with college fees: the companies know the government is going to subsidize a large part of it, so why not charge as much as you can get away with. Immoral, unethical, and should certainly not be approved.

303. Peggy Roy Portelance, Williston
I get my insurance from: Employer (self or household member)
My insurance company is: Blue Cross Blue Shield of Vermont

As a Vermont educator for over 25 years, I am shocked that much of my career has involved negotiating over health care costs. In our district teachers have been paying 20% of their premium costs for the last 10 years. This cuts into our salary base substantially. Over this 10 year period my salary has increased a mere 2.3% annually on average (doesn't even meet inflation). Much of this percentage is due to the spiraling health care insurance costs. In recent years the addition of a deductible has further impacted my bottom line. BC/BS's increase request, if granted, will surely prompt our district to require a larger contribution from the teachers, again, impacting my take home pay and lifestyle choices. I am frugal and constantly prioritize my health care needs while attempting to address other areas such as food and home costs. I believe I am in the middle of the health care crisis, fully realizing there are others who are in far more grave situations than I in regards to their own health care insurance and health care needs. Our state and our nation at large must get a grasp on this matter before it implodes.

304. Gail Horne, Grand Isle
I get my insurance from: Personally
My insurance company is: Blue Cross Blue Shield of Vermont
Cost of insurance is already too expensive for many people. Any increase should be securitized by the GMCB

305. Christopher Reck, Vergennes
I get my insurance from: Employer (self or household member)
My insurance company is: Blue Cross Blue Shield of Vermont
Way too much. Go single payer and Medicare for All.

306. Julie Burns, Waitsfield
I get my insurance from: Vermont Health Connect
My insurance company is: MVP
I can't afford to pay health insurance now and am looking at dropping it.

307. Justin S Barrows, Burlington
My insurance company is: I don't have health insurance.
I think a price increase proposed by Vermont Health Connect will continue to illustrate that they support consumer's taking it on the chin. I am a full time manager at a recovery center, I am a student, I am an intern, I am an advocate. I can not currently afford insurance and do not have it. My mental health, medications, and self care are incredibly important to the work that I do. Instead of getting anything below a silver plan, where paying for insurance actually lowers my costs of care, I simply do not have it. I pay out of pocket and on sliding scales for my healthcare, therapy, and medications. If the mission of Vermont Health Connect is to connect Vermonters in need then how is raising the prices going to help me and other individuals who are already operating on a shoe-string-budget? This will be another strong indicator that Vermont Health Connect and the State of Vermont at large does not support an equitable and healthy community for it's at-risk and lower income citizens. Is that harsh? Maybe. But please, change my opinion. It would be welcome change to the status quo.

308. Barbara Bacchi, Shaftsbury
I get my insurance from: Self
My insurance company is: Blue Cross Blue Shield of Vermont
I am a self-employed 70-year-old and my husband is a retired 73-year-old. It is getting harder and harder to be able to afford health insurance and health care in general. Please don't allow premium increases again.

309. Sam Adams, Williamstown
I get my insurance from: Employer (self or household member)
My insurance company is: Blue Cross Blue Shield of Vermont
The BCBS request is grossly out of line with any cost of living or inflationary index. It is not possible for either employers or employees to absorb such an increase.

310. Mark Elvidge, Grand Isle
I get my insurance from: Vermont Health Connect
My insurance company is: MVP

This is unacceptable and we can not tolerate increases of this nature which outpace the CPI and wage increases. Rate increases need to be denied and these insurance companies need to better manage themselves. Bring in additional providers and increase the competition so real rates actually decrease.

311. Abbie Corse, Whitingham
I get my insurance from: Vermont Health Connect
My insurance company is: MVP

My husband and I have no access to workplace health insurance. And I have watched my parents; 5th generation organic dairy farmers spend their entire life paying out a third of their meager income to health insurance premiums and deductibles because they're self employed. My husband and I have years of credit card debt and loans to pay off from the years when we didn't make enough money to live. We both graduated valedictorian from our tiny school in Whitingham, both attended VT institutions for college (he UVM and I SMC on full tuition scholarships). We did what we were supposed to do. We traveled, became educated and CAME BACK. We are raising our children here in this tiny state that we believe in despite it's failings to make our existence here sustainable. I, as a farmer, make [redacted] despite working 25-55 hrs/week and raising my children. My husband is a talented local builder who built up his company into one that brings millions of dollars through our local economy and employs a full time crew of 7 as well as countless subcontractors. It took him all this time to build that company up during which time, thankfully, we were on Medicaid. I [redacted] and we have two young children so this literally made it possible for us to take care of ourselves. Building up a company requires everything, my husband to this day is still gone 7-7 most days including many weekends. And despite the years we had no savings (still Don't, as well as no IRA, etc) and HAD to rely on credit cards for fuel and food and gas the minute our income became something that we might have a chance to actually build up our financial security and get ahead, become responsible fiscal citizens we were slapped with the reality that we would suddenly have to put THOUSANDS of dollars into paying health care premiums and deductibles. We didn't have thousands. Our budget didn't have room for this sudden monthly bump of initially $700/month when we were with blue cross the first year and $100/month now with MVP with a $10,000 deductible. I don't take my kids to the doctor now because of the cost. I have tried to avoid my appointments to check in with my psychiatrist because I have to drive an hour and it costs $100. We have never had dental or vision. My parents have never made an income of over $45,000 and more often are lucky if they make $30,000 (yes combined) and a THIRD of that goes to health care premiums. But we are the family that I hear about all the time, the ones who didn't stay, who fled VT for bigger and better opportunity for themselves and their kids. We didn't and you are failing us. My family's farm has been here for over 150 years and I contemplate often the sacrifice I am forcing my husband and kids to make so I can farm. I can only contain my family's legacy here, and I can only do so subsidized by my husband's income. These premium hikes are just another example of a massive corporate structure trying to maintain their status quo while the rest of us scramble. Farmers and other small businesses trying to eke out a living in VT (and, I would advocate, maintaining the landscape and character of VT as a small, local, communal place) have to look at their balance sheets and P&L and they have to make impossible choices every year because they don't have enough money. Why don't we expect the same of these companies? Shouldn't they have to work a little

harder for us? Vermont has to do better for their farmers and their small businesses or they will cease to exist.

312. Debbie Creed, Rutland City
I get my insurance from: Employer (self or household member)
My insurance company is: Blue Cross Blue Shield of Vermont

The main concern in this proposed premium increase is will the benefits remain the same as they are currently or will there also likely be an adjustment in the terms of higher deductibles and out of pocket costs? As an employer we try to assist in the cost management of employee choices, realizing that are looking primarily at the bottom dollar cost to them in their monthly premium cost. If the premiums continue to rise at the 8 - 15+% increase and the deductibles and out of pocket costs increase at the same time, the employee is left paying for a plan they can "afford" on the monthly basis, but will go into debt to "afford" their care should they ever have the misfortune to use their insurance.

Rather than just simply passing the buck from BC/BS and MVP onto the insured's, let's work on reducing the costs associated with health care. Vermont's population can not afford to pay more for health insurance, nor can employers - somewhere it has to slow down or employers will be forced to get out of the insurance market and just "pay the penalty" as that will be the cheaper option.

313. Todd Keyworth, North Hero
I get my insurance from: Blue Cross Blue Shield Directly next year. Through an Association this year
My insurance company is: Blue Cross Blue Shield of Vermont

Health Insurance for my wife and I will be over $2000.00 per month. We operate a small store in the islands that is very seasonal. This is NOT affordable health care and may be, when combined with other actions taken by the legislature, the last straw when it comes to remaining open and staying in Vermont.

314. Matthew Pollock, Middlebury
I get my insurance from: Employer (self or household member)
My insurance company is: MVP

MVP is asking for an increase 4 times higher than the cost of living increase while BCBS want an increase 7 times higher. Both increases are to excessive. No other business can take these types of increases. Both companies need to work on controlling their costs versus increasing their premiums at a rate far higher than their actual costs are increasing.

315. Jeannine Kilbride, Hartland
I get my insurance from: Vermont Health Connect
My insurance company is: Blue Cross Blue Shield of Vermont

I recently canceled my insurance because I can't afford to use it! I had two tests done and two office visits and now I owe $1,200. I don't have $1,200. When you come up with a plan that has affordable co pays and deductibles that don't soak the consumer I will sign up again.

316. The Toscanos
BCBS absolutely must be stopped. They should be lowering their rates not raising them. All it takes is for my family to get one virus and its $150 in copays just to be seen. I want my kids to be kids but these health insurance companies are destroying us. They take close to 500 a month from our paychecks,

make them stop raising their rates every year! Please! It's getting to the point where if you dont stop them I will have to get another job just to pay the co-pays!

317. Sarah Toscano, Hinesburg, VT
I get my insurance from: Employer (self or household member)
My insurance company is: Blue Cross Blue Shield of Vermont
You cant keep doing this- just having my family get a virus is $150 in copays to be seen. And we are all being seen in the same room at the same time.
I cannot afford to allow my kids to just be kids, when I have to worry about the greed of our insurance company. We have the best insurance in the state... I'm sure you are making plenty of profit off of so many people. You need to start actually caring about people.

318. Jennifer O'Leary, Franklin
I get my insurance from: Employer (self or household member)
My insurance company is: Cigna
People pay way too much for healthcare. How much hardship are you going to put onto Vermont families. That's one of the reasons young people are leaving. Vermonter's pay way too high of taxes to be able to afford healthcare. My healthcare cost me almost as much as my house payment. I am not house poor but healthcare poor. Please DO NOT raise the rates!

319. Jennifer, Richmond VT
I get my insurance from: Employer (self or household member)
My insurance company is: Blue Cross Blue Shield of Vermont
No I pay to much already

320. Matt, Waitsfield
I get my insurance from: Vermont Health Connect
My insurance company is: Blue Cross Blue Shield of Vermont
This is an unstainable and inexplicable increase. Any premium increases need to come with reductions in executive pay with corporate profits paid back to rate holders.

321. Shannon Gilligan, Warren
I get my insurance from: Employer (self or household member)
My insurance company is: Blue Cross Blue Shield of Vermont
My reaction is that this is too high a cost increase. Workers bear the brunt even when an employer does provide coverage. Has quality of care gone up? Not by 15% in any sort of measurable way I suspect. I thought costs were supposed to go down as more people enrolled and paid for insurance. Where is this 8+% and 15+% increase being applied? Also, this is a large increase on top of several recent large increases.

322. Anonymous, Waterbury
I get my insurance from: Employer (self or household member)
My insurance company is: Blue Cross Blue Shield of Vermont
These yearly increases to already high premiums plus the impossibly high deductibles are making health insurance unaffordable for too many people. I have a hard time believing that BCBS is a not for profit corporation. We don't get much for our money.

323. Jocelyn, Waterbury
I get my insurance from: Employer (self or household member)
My insurance company is: Blue Cross Blue Shield of Vermont
These insurance companies are very profitable and are hurting the bottom lines of small businesses in Vermont

324. Amy, Derby
I get my insurance from: Vermont Health Connect
My insurance company is: Blue Cross Blue Shield of Vermont
Premiums are already too high and not affordable for many. The grace periods and notices for premium increases do not work - we have paid our premium on time every month and still been told we were past due and had insurance taken away. The system is broken!

325. Melissa Bounty, Waitsfield
I get my insurance from: Employer (self or household member)
My insurance company is: Blue Cross Blue Shield of Vermont
I work for a small company who has only recently been able to afford health insurance to our staff of 10. It is very disappointing to me that a 15.6% increase is being suggested for next year. We would push back on any vendor who provided services to our company and expected such a price hike, and it seems especially manipulative given BCBS's control of the marketplace. It will impact our ability to grow our business in 2020.

326. Karen Fahey Ross, Stowe
I get my insurance from: Employer (self or household member)
My insurance company is: Blue Cross Blue Shield of Vermont
Employees will be responsible for increases which will create less income direct to employees and the young adults will be hit hardest as good jobs and affordable housing is scarce. It will further effect young adults being able to work and live in Vermont

327. David Horton, St Johnsbury
I get my insurance from: Vermont Health Connect
My insurance company is: VT Health Access
I am 64 years old and still working about 30 hours a week and my total income currently makes me eligible for help from the state. However, I may need to work more whereby I will have to pay for insurance based on my income. I am able to pay most of my bills at this time and can do it by living simply. Please don't make health insurance premium rates so high that me and others have to sacrifice living expenses to pay for health insurance.

328. Evie, Stowe
I get my insurance from: Self
My insurance company is: Blue Cross Blue Shield of Vermont
I haven’t received a raise from my employer in 3 years! BCBSVT goes up every year - I don’t know how you expect working people to keep paying for these increases. BCBSVT services are not getting any better the request for this increase is outrageous.

329. Debra Sargent, Montpelier
I get my insurance from: Self
My insurance company is: Medicare/USAA
I receive payments from them. Patients will not access services

330. Mary Alice Bisbee
To all members of the Green Mtn. Care Board: Health insurance costs for all of us are pricing everyone out of the market! As an elder, not dependent on BC/BS or MVP these increases only affect me by seeing my younger friends, family and neighbors going broke or doing without under the current non-system. Yes, my copays to United Health Care are also atrocious, but at least they are comprehensive. Until Vermonters of all stripes, politically, economically and the large corporations are able to see that health insurance is a booby trap that only helps health administrators grow their personal bank accounts, we are in big trouble. This is at the expense of patients/consumers paying huge premiums and health care providers at all levels who are being cheated by rates that do not even pay for increased salaries for those working in the system. Administrative costs are rising exponentially! Until we can take the big step and free all businesses and individuals from paying premiums and instead pay for health care through a well regulated tax system that sets rates according to ones ability or inability to pay for services rather than fixed rates for procedures or per capita rates per patient served on the provider end, we are fighting a no win game that only makes things much worse. Capitalism and market rates do not work for health care. We are already losing providers, particularly entry level Primary Care Physicians with huge tuition payments. New M.D.'s are deciding not to even enter the field until there is more equity for them as compared to more highly specialized providers. Why do so many of our new providers receive their education outside of the U.S.A? Many of us had hoped that the GMCBoard would be our answer to this huge problem. Unfortunately, that does not seem to be the case. If you cannot hold down costs during this current period of huge uncertainty on all fronts, what can Vermonters expect in the near future? Please prove me wrong by denying these sky high rate increases.

331. Mary, Middlesex
I get my insurance from: Employer (self or household member)
My insurance company is: Blue Cross Blue Shield of Vermont
Paying almost $800.00 a month as it is now. Can't afford not to but don't know how much more I can pay! One person! Thank heavens hubby is finally on Medicare! Definitely couldn't afford both of us on this policy! Enough is enough!

332. Shannon Meckle
Town: East Dover
I get my insurance from: Employer (self or household member)
My insurance company is: Blue Cross Blue Shield of Vermont
We will have to take a plan that won’t cover what we need if this happens. We are barely covering our bills now with the premiums we pay. I have medical issues that require regular prescriptions and numerous specialist visits each year. I will have to stop treatments if we can’t afford insurance to cover them. If these insurance companies can’t run their businesses on the already ridiculous premiums they charge, then I would recommend the state (who mandated these programs) start looking into mismanagement of the companies.

333. The Rev. Kim Hardy, Essex Junction
I get my insurance from: Employer provides
My insurance company is: Blue Cross Blue Shield of Vermont is the "agent" of our national BCBS policy. I'm not sure what the difference is.

I would like to see health insurance remain affordable to all. I also don't want private coverage to go away or become so expensive that non-profits such as churches will no longer be able to afford it. These increases would make health care unaffordable for many. Please work to bring costs down including drug prices which apparently is one of the biggest issues. Drug companies are raking in profits at the expense of our health care system.

334. Karlinda King, Milton
I get my insurance from: Employer (self or household member)
My insurance company is: Blue Cross Blue Shield of Vermont

Do they really need an increase? Have the dividends that their investors get decrease by that much? Did they decrease at all? I get a 2.5% increase in wages why do they get 15%? If everyone would be honest and reasonable in the increases they need we wouldn't need a board to watch over everything. BCBS and MVP how much do you really need?

335. Mary, Bristol
I get my insurance from: Employer (self or household member)
My insurance company is: Blue Cross Blue Shield of Vermont

It's crazy between healthcare and taxes they are killing us

336. Gwyn, Shelburne
I get my insurance from: Vermont Health Connect
My insurance company is: MVP

We are on the upper limit of what we can afford monthly already and praying we don't need much co-insurance care though we know it's probably coming, this much of an increase will make the ability to have and use health insurance that much further out of reach for us. I have health issues and already some of the expenses I have to support those problems are out of pocket and not covered this could bring me to the point of having to choose, the things prescribed but not covered I know are important for me or coverage. But what good is coverage I can't afford to use?

337. Dian Foulds, Windsor, VT

I am a 68-year-old retired Vermonter. Would it be burdensome for me if Blue Cross Blue Shield of Vermont raised its insurance premiums by an average of 15.6%? Yes it would, and here's why. When I was working full-time I had a steady income. Being active and in excellent health, I never needed anything but the most basic and inexpensive health insurance plan. When I was jobless I qualified for Medicaid. But now that I've retired and my income has plummeted, I find that paying my monthly Medicare/ Medigap/meds insurance premiums is one of the biggest monthly expenses I face. I'm one of those people whose career path involved a lot of self-employment and never included pensions or golden parachutes or 401ks. I'm holding off on drawing Social Security, since it is essential that I get the fullest amount available to me, which means waiting another two years. I suspect I'm not alone when I say that many Vermonters can barely afford any health insurance coverage at all. I know at least two working-age Vermonters who feel they don't earn enough to afford the "luxury" of health insurance, so go without. At my age, I'm not willing to risk the financial devastation that could result from getting a

chronic disease while uninsured, and besides, the Affordable Care Act was better than nothing. But watching premiums rise a full 15% only three years after signing on with Medicare recipient is upsetting. It goes without saying that our nation is way behind the rest of the developed world when it comes to caring for its own citizens' health needs. I know that our legislature is working hard to address that. Until we succeed, It's essential that we do everything in our power to keep premium prices in check.

338. Kate Dodge, Hinesburg
I get my insurance from: Employer (self or household member)
My insurance company is: Blue Cross Blue Shield of Vermont

I feel that 15.6% is totally unreasonable, and if left unchecked, will result in even more Vermonters opting to go without insurance – a dangerous and risky proposition for our society/economy as a whole. Our health care system does not offer enough choices for small employers to offer to their employees, especially now that AHP's are off the market. There must be a better, more reasonable way to keep health care costs in check.

339. Geoff, Johnson
I get my insurance from: Vermont Health Connect
My insurance company is: Blue Cross Blue Shield of Vermont

Insurance companies have wa over stepped their bounds along with hospital fees. Doctors, insurance providers and hospitals need to get together in one large meeting, with drug manufacturers and drop prices immediately before they work themselves into a corner where n one will be able to afford their services...the percentages made on the the backs of the middle classes are unrealistic and also borderline criminal! I don't mind people getting a good salary or earning a profit but.....

340. Vicki Litzinger, St. Johnsbury
I get my insurance from: Employer (self or household member)
My insurance company is: Blue Cross Blue Shield of Vermont

I want to know how you can justify raising premiums when we already have the most expensive coverage in the world. How do you sleep at night? How many dollars in profits do you need? We already live paycheck-to-paycheck. Increasing my premiums would break us. Take a lower profit, please!

341. Glenn Fay, Jr., Burlington
I get my insurance from: Employer (self or household member)
My insurance company is: Blue Cross Blue Shield of Vermont

This rate increase would make insurance unaffordable for most working Vermonters. Unaffordability is the biggest barrier to access to care. Thank you.

342. Gloria Deeley, Essex VT
I get my insurance from: Employer (self or household member)
My insurance company is: MVP

The increases have a financial impact on the consumer as an employer, employee, and retiree- whose social security was increased 3% this year- so if MVP increases - there goes our 3%!!!!

343. Jerri Ryan, St Johnsbury
I get my insurance from: Supplement to Medicare
My insurance company is: Blue Cross Blue Shield of Vermont
I can barely afford it now.

344. Eri Avelle, Burlington
I get my insurance from: Employer (self or household member)
My insurance company is: Blue Cross Blue Shield of Vermont
Our healthcare already is more expensive than we can afford. Every year the premiums rise, the co-insurance rises and the amount of coverage seems to reduce. This is not sustainable for our family and most likely for most families!! Please don't agree to a raise in premiums!

345. Julia McDaniel, St. Albans
I get my insurance from: Self
My insurance company is: Liberty Healthshare
The cost of premiums got so higher we had to drop BCBS and turn to a health share program. It's obscene how much we had to pay for very basic coverage.

346. Jemima Talbot, Essex
I get my insurance from: Employer (self or household member)
My insurance company is: Blue Cross Blue Shield of Vermont
Health insurance premiums need to be significantly reduced not increased! The cost of health insurance and health care in general are crushing Vermonters.

347. Chris, Vergennes
I get my insurance from: BCBS directly
My insurance company is: Blue Cross Blue Shield of Vermont
I am on a fixed income and everything and I mean everything is increasing but my income is not.

348. Cybele Hantman, St. Johnsbury
I get my insurance from: Employer (self or household member)
My insurance company is: Blue Cross Blue Shield of Vermont
My husband and I already pay a lot for our medications and health care visits. If our premiums go up, we will be unable to survive financially. Health care needs to be more affordable, not less affordable!

349. Mary Claire DeHaven, LICSW, Starksboro
I get my insurance from: Employer (self or household member)
My insurance company is: Cigna
This price increase will make it more difficult for my mental health clients to pay their Insurance Premiums. If they don't have insurance, their mental health will suffer which can make it difficult to function well enough to be contributing members of the community and economy. In addition my private practice psychotherapy business income will decrease significantly making it difficult to continue providing enough care for these clients. Mental health Care as well physical health needs to be prioritized and affordable Insurance provides access to it.

350. Courtney Brown, South Burlington
I get my insurance from: Employer (self or household member)
My insurance company is: Blue Cross Blue Shield of Vermont

I am leaving my employer for a self employment position so carrying this insurance thru the federal care act is already insanely expensive monthly- an Increase of this amount would make me opt out completely - I am a healthy person that works out on the daily and this is just taking advantage of the consumers.

351. Susan Cartwright, North Ferrisburgh
I get my insurance from: Through MVP directly
My insurance company is: MVP

I don't see how the average vermonter can continue absorbing these increases.Are insurance executives compensation taken into consideration when rate increase requests are evaluated. If not, they should be.

352. Michael Neary, Milton
I get my insurance from: Employer (self or household member)
My insurance company is: Cigna

Everyone is already challenged with the high cost of care and medications. A rate cut would be favorable. It's just not right!

353. Erika Dodge, Morristown
I get my insurance from: Self-employed - purchased family plan
My insurance company is: Blue Cross Blue Shield of Vermont

As young, driven, self-employed entrepreneurs, my husband and I are constantly faced with the debilitating cost of living in Vermont. We recently chose Vermont to raise our family, but we have questioned if its economically viability for us to stay here. I am a self-employed architect and my husband is a self-employed builder. We are young entrepreneurs that will likely provide additional jobs to the area. However, the rising cost of healthcare and taxes make us seriously consider moving back to our home state of New Hampshire. As a young, growing family, we cannot afford a 15.6% or even 8.5% premium increase. It's unthinkable to think as a family of three, we will be forced to pay over $2,200 a month for a family healthcare plan with a high deductible of over $8,000. The incapacitating costs of health insurance for an inadequate plan are just one of the financial stresses Vermont has plagued young entrepreneurs like us. We sincerely hope the Green Mountain Care Board will consider young families like us that want to strive in Vermont, or we will be forced to leave this beautiful place we have learned to call home.

354. Michael Neary, Milton
I get my insurance from: Employer (self or household member)
My insurance company is: Cigna

Everyone is already challenged with the high cost of care and medications. A rate cut would be favorable. It's just not right!

355. Rubin Bennett, East Montpelier
I get my insurance from: Vermont Health Connect
My insurance company is: Blue Cross Blue Shield of Vermont

This is an impossible increase. Health care (premiums and deductibles) for our family already costs nearly a quarter of our household income. We make just enough that we receive no premium assistance, and a 15% increase is just not possible for us to absorb. Healthcare is already obscenely expensive and perhaps equally importantly, time consuming to deal with.
Since we have no leverage with providers, it's up to Blue Cross and MVP to address the supply side and stop the fiscal bleeding for Vermont families.

356. Armand Ferland Jr, Wolcott
I get my insurance from: Employer (self or household member)
My insurance company is: Blue Cross Blue Shield of Vermont

Since the enactment of VHAP which was to contain the cost of healthcare. There has been a request each year for 15 to 18 % increase. The program is either not working or financials of the companies need to be audited to explain where it is being expended. Is it a repeat of the financial bail out where $20 million dollar naming rights to a stadium were kept?

357. Lynn Brown, Bristol
I get my insurance from: Employer (self or household member)
My insurance company is: Blue Cross Blue Shield of Vermont

While I am sympathetic to the need for insurance companies to operate in the black I find it difficult to believe that BCBS needs a 15% increase in order to remain profitable. With reports in the media indicating that insurance companies are highly profitable I hope that the Green Mountain Care Board will look hard at BCBS's request and reject unreasonable increases.

358. Eric LaMontagne, South Burlington
I get my insurance from: Vermont Health Connect
My insurance company is: MVP

Before any increases are made, there MUST be demonstrated due diligence to show that this is absolutely necessary and will set the bar higher for Vermont health care. -Who gets the money? -What will the increased cost achieve? -What additional services can Vermonters expect for their money? -Can the businesses billing for medical costs be held accountable for increasing costs instead of putting the burden on Vermont employers and tax payers? -Who will be accountable for ensuring the money does what it is intended to do? If you want us to pay more, we need to trust you. Currently, we don't. Setting a paradigm of transparency and accountability will go a long way toward showing Vermonters you truly have our best interests in mind.

359. Irma, Ripton
I get my insurance from: Employer (self or household member)
My insurance company is: Blue Cross Blue Shield of Vermont

Can't afford increases

360. Marcy Wisnowski/Addison county commission sales inc., East Middlebury, VT
I get my insurance from: self employed small business owner
My insurance company is: Blue Cross Blue Shield of Vermont

Honestly can not even fathom this increase as it is health insurance is at close to 1000.00 a month for our 2 full time employees and it doesn't cover very much , high deductibles- are you sure this is not happening because so many Vermonters are getting "free" health benefits from the state, and those of us working our butts off are being forced to pay????? Ludicrous!!

361. Stephanie Lahar, Montpelier
I get my insurance from: Direct from BC/BS, as I'm not quite eligible for a subsidy
My insurance company is: Blue Cross Blue Shield of Vermont

I pay full price, out of pocket. Middle income, not eligible for a subsidy, and yet I'm having a hard time making ends meet and covering monthly expenses. It's the worst being in the middle, where all the costs are shifted to. I'm self employed and can't raise my rates above the market for my services to pay for an increase of this scale -- I just fall further behind each year.

362. Kerry Whalen, Fayston
I get my insurance from: Employer (self or household member)
My insurance company is: Anthem Blue Cross

I have been a health connector client in the past and will probably be next year. My annual income will not be going up 15%. My insurance will probably now be higher than my mortgage. How much more can people take before they start going UN-insured.

363. Mimi Buttenheim, Waitsfield
I get my insurance from: direct through MVP
My insurance company is: MVP

Our income is not keeping pace with these increases. We will have to drop down in coverage to be able to afford it. It already costs close to $600 dollars for one person, and our small company (10 people) cannot afford to offer health insurance. These prices increases make it more and more un-affordable for the company to even think about subsidizing insurance coverage.

364. David Cohen, Warren
I get my insurance from: BCBS
My insurance company is: Blue Cross Blue Shield of Vermont

We're paying more than anyone I've talked to from any other nearby state and because of the high deductibles, still paying lots out of pocket. We have even been forced to buy our drugs out of Canada. We were way better off before before the system changed several years ago, seemed a lot more fair. It must have been, or else our state employees would now be on the same health care plans we are forced to be on as hard working middle class Vermonters. It's becoming unaffordable to live here if you actually work, or don't have a trust fund. And why do our trust friend friends with no active income get a break on their health care plans????

365. J. Guy Isabelle, Barre Town
I get my insurance from: Medigap
My insurance company is: Blue Cross Blue Shield of Vermont

I just bought a medi-gap policy. It is already 12% of my income and the thought of it going up another 15% is beyond belief. I can go on about what is wrong but folks are good at that. They are just not good about fixing it.

366. Fred Ray, West Rutland
I get my insurance from: Employer (self or household member)
My insurance company is: MVP

I'll be lucky to see a 2% increase in pay. These insurance premiums cannot keep going up at the rate they are currently. I'll have to go back to getting fined for not having any if this keeps up because I won't be able to afford it again.

367. Joseph Caouette, Rochester
I get my insurance from: Vermont Health Connect
My insurance company is: I have VA my son is through Health connect

Absolutely not. It would only make health insurance costs more unaffordable for benefits that do not provide basic coverage. When Paying $800 a month there shouldnt be a $2,500 deductable.

368. Robyn O'Brien, Putney
I get my insurance from: Employer (self or household member)
My insurance company is: MVP

When I first offered Health Insurance to my staff, we were able to support Gold plans for every employee. Due to the skyrocketing costs of insurance premiums, fewer staff can afford the coverage they deserve. Should the premiums go up yet again at this high rate, not only will our company have to cut other benefits, our staff (including myself) will have to downgrade to lower coverage plan. We are all healthy lifestyle people here, and the premiums are onerous!

369. Kristina Coulombe, Winooski
I get my insurance from: Vermont Health Connect
My insurance company is: MVP

For the past few years, premiums have increased by a significant amount making it so hard for people who are on a tight budget to keep the insurance they have! This results in choosing a lower benefit plan with higher deductibles which have also risen every year. Please don’t raise the prices again when they were raised significantly last year.

370. Donald Miller, Essex
I get my insurance from: Self
My insurance company is: Blue Cross Blue Shield of Vermont

The increase will put an increased burden on my family & me since we are already struggling to meet the monthly costs, even with the highest deductible plans which we buy to try & keep costs low

371. Name: Jonathan Ebbers, South Burlington, VT
I get my insurance from: Employer (self or household member)
My insurance company is: United Healthcare

This is outrageous. Insurance companies continue to increase prices every year and the GMCB should work with the companies to increase efficiencies. Work with these companies as you would a teen - help them to prioritize effectively/accurately and spend their money wisely (rather than asking for allowance increases every year).

372. Rebecca Olson, Waterbury
I get my insurance from: I am the employer and pay full insurance for 6 employees
My insurance company is: Blue Cross Blue Shield of Vermont

I am a small business owner who feels strongly about paying full health insurance for my employees, but I am finding it increasingly difficult to do so. This 15.6% increase would result in an additional $7400 for 2020 (on top of the $48,000 I am already paying). Please stop these substantial increases or you will drive businesses like mine out of state!!

373. Warren Davey, Waterbury
I get my insurance from: Employer (self or household member)
My insurance company is: Blue Cross Blue Shield of Vermont

The price increases are due to the poor complicated accounting practices that the hospitals and doctors offices are required to do by our own government. An independent auditing firm should evaluate the process from start to finish and create effective efficient solutions to streamline the process!

374. Monique Gilbert, Jericho
I get my insurance from: Vermont Health Connect
My insurance company is: Blue Cross Blue Shield of Vermont

As a self-employed typical Vermonter who holds down 3 jobs to try and make ends meet AND pays $500 per month for health care just for me, no one else, I am against this increase. I already pay a huge chunk of my monthly income for health care; plus, anytime I do have to use a doctor, I have to pay out-of-pocket anyway (it is usually not covered), so an increase seems completely without merit.

375. Marilyn Fuller, Middlebury
I get my insurance from: Employer (self or household member)
My insurance company is: Blue Cross Blue Shield of Vermont

We currently have to pay out close to $20,000 in premiums and deductible annually merely to carry the cards in our wallets. How much more can you possibly imagine that one couple should have to pay for insurance?? This is madness!!

376. Joseph, Danville
I get my insurance from: Employer (self or household member)
My insurance company is: Blue Cross Blue Shield of Vermont

This is excessive, I see my paycheck go down every year despite increases because Insurance costs keep going up.

377. Ben, Sudbury
I get my insurance from: Employer (self or household member)
My insurance company is: MVP
Please do not do this, the average person cannot afford it. There must be another way.

378. John Peterson, Montpelier
I get my insurance from: Employer (self or household member)
My insurance company is: Medicare with BCBS as secondary
Way too much of an increase for either! One of my meds alone cost abt $1800 for a month at the start of the year, but after I get thru the donut hole it is "ONLY" abt $275/month. I'm 70 and at least I'm still able to work part-time as well as collect SS. Many of us other "older" folks are not as fortunate. I would recommend no more than half of the proposed increases by either insurer.

379. Reynolds, Morrisville
I get my insurance from: Employer (self or household member)
My insurance company is: Blue Cross Blue Shield of Vermont
With inflation at less than 2% why would they need 15%? They have already increased our co-pay.

380. Sheryl Stancliffe, Waterbury
I get my insurance from: I have supplemental insurance that I pay for
My insurance company is: Blue Cross Blue Shield of Vermont
If the raise in Premiums include supplemental, I am on a fixed income. 15.6 is too much. Please reconsider.

381. Alida Bomblies, Huntington
I get my insurance from: Colorado Public Employees Group Insurance for Retirees
My insurance company is: Blue Cross Blue Shield of Vermont
I was a teacher in Colorado and my pension is very low. With a premium increase of 15% I would theoretically fall below the poverty line, if it weren't for savings we fortunately have. I suppose there are plenty of people who have no savings to speak of, so how are they going to handle this unfair price increase, if I am already worried about future coverage? It is high time the insurance industry got their act together and scaled down the salaries of their ceo's and the pay-outs to their share-holders. A premium increase of 15% is outrageous. How does BCBS explain this as necessary?

382. David Harrington, Underhill
I get my insurance from: State of VT retirement
My insurance company is: Medicare w BCBS secondary
My concern about these rate increases is that it will harm small employers and individuals. The insurance companies mentioned have got to find ways to cut costs by improving the efficiency of delivery. Taxes are a huge burden on the same businesses and individuals you have targeted for increases. We are paying folks to move here but with the cost of living so high here in VT, it won’t be long before our bought population moves someplace else!

383. Nichole Bagley, Weybridge
I get my insurance from: Vermont Health Connect
My insurance company is: Blue Cross Blue Shield of Vermont

We are a middle-class self-employed family. We already pay just over $1,600/month for health insurance (no subsidies). A rate increase of this size could likely force us to explore another route e.g. Medishare. Perhaps BCBS could cut administrative costs — for example the number of sheets of paper that come with each explanation of benefits is cringe worthy.

384. Andrea White, Fairfax
I get my insurance from: Vermont Health Connect
My insurance company is: Blue Cross Blue Shield of Vermont

What ever happened to the idea of AFFORDABLE Health ???

385. David Jaacks, West Windsor
I get my insurance from: Vermont Health Connect
My insurance company is: Blue Cross Blue Shield of Vermont

Same story every year. Few business can raise prices 15% per year and keep customers. The concept we have a choice in health Care is false. It is actually a utility not a service - When there are only 2 options it is not a market place.

386. Becky Castle, Shelburne, VT
I get my insurance from: Employer (self or household member)
My insurance company is: Blue Cross Blue Shield of Vermont

The current price of health insurance is untenable. My family pays nearly $1,500/month in premiums and has a $14,000 deductible. While I don't scrimp on bringing my kids to the doctor, my husband and I frequently decide not to go to the doctor ourselves because it is just more out-of-pocket expense. A system that deters care-seeking is broken. I comb over the EOBs when they arrive and frequently find mistakes--never in my favor. The total cost of my annual insurance verges on ridiculous--I would need to pay nearly $30,000 before any appreciable coverage kicks in. Since my physician friends tell me that they are getting squeezed on negotiated payments, I do wonder about the cost drivers for this percentage increase. I continue to pay for insurance because we do not want to be bankrupted and need the catastrophic coverage.

387. Christine Ouellette, Middlebury
I get my insurance from: Employer (self or household member)
My insurance company is: Blue Cross Blue Shield of Vermont

With what we the consumer must pay for health insurance and then the high deductible that we're required to pay already makes health insurance difficult to afford. Continued increases will have more people being uninsured. Too many people will avoid proper health care as they can't afford it.

388. Lorraine Roberge, Winooski
I get my insurance from: As a suppliment to Medicare
My insurance company is: Blue Cross Blue Shield of Vermont

If my Social Security was going to increase at the same rate then I would approve of this increase. However, my supplemental insurance through BCBCVT) increases a little each year but the Social Security might only increase 2 or 3%. Someone needs to do something about the high cost of

health care (which seemed to not be as expensive back before someone decided PPOs and HMOs were a good idea) as people with limited incomes are able to spread their money just so thin between insurance coverage and increasing property/school taxes. It's gone way past ridiculous at this point. If they were asking for a 5% increase, that would be more reasonable. Hard to justify an 18% increase. If this is approved, does that mean I'll get more bang for my buck on my Program N coverage? Not likely and I'm sure the State would not be able to afford assistance to those of us now covered with them in some way without having to raise their premiums we pay.

389. Dave Thompson, Lincoln
I get my insurance from: Vermont Health Connect
My insurance company is: Blue Cross Blue Shield of Vermont
[redacted] led to losing job & insurance. Cost of injury expected to be $700,000 over next 13 years. Settlement will cover 7 years of premiums plus deductible, but not rehab much less losses. This is health care for all - minus me. I also expect to have to fight insurance for every treatment and medicine the specialists have prescribed.

390. Galen Perkins, Williston
I get my insurance from: Employer (self or household member)
My insurance company is: Blue Cross Blue Shield of Vermont
Insurance premiums are escalating at a rate that far outpaces what consumers can keep up with. Premium increases need to be kept to a level that is more in line with salary increases (which is nowhere near 15%). Astronomical rate increases mean that my salary actually decreases some years. High deductible plans means that we don't always seek medical care when needed. Increases at this level mean we will continue to have to make difficult choices about paying off debts.

391. Vic Dwire, Middlesex
I get my insurance from: Employer (self or household member)
My insurance company is: Blue Cross Blue Shield of Vermont
This increase is way out of proportion with retired 75 old income increase. BC/BS. pays for less Wants more I say no. Cut Don Georges salary.

392. Alexandra Kosiba, Bolton
I get my insurance from: Employer (self or household member)
My insurance company is: Blue Cross Blue Shield of Vermont
Health insurance is already costly to many. I, along with my family members and friends of mine, have deferred doctors visits or procedures due to the cost. Health care should not be something that is out of reach for most Vermonters. When wages don't increase, but cost of living does, there is a serious issue in our state. We cannot have annual increases of 15.6% without similar increases in wages.

393. Luke Ingram, Bolton
I get my insurance from: Vermont Health Connect
My insurance company is: Blue Cross Blue Shield of Vermont
Stop increasing the cost of health insurance without consideration to the many people this will negatively affect.

394. Mary Shepley, Peacham/ W. Danville
I get my insurance from: Vermont Teachers Retirement
My insurance company is: Blue Cross Blue Shield of Vermont
This will impact our fixed income a lot - why is this necessary, especially for senior citizens? actually health insurance is too high for everyone

395. Vanessa Zerillo, Essex Junction
I get my insurance from: Employer (self or household member)
My insurance company is: Blue Cross Blue Shield of Vermont
The Cost Of Living (COLA) in 2019 will be 2.8%; it was 2.0% in 2018. Although Health Care Costs are high, to have an increase that is over five times the general cost of living is much too high. Affordability for middle income families is most certainly compromised with such an increase.

396. Dana Davison, Stowe
I get my insurance from: Employer (self or household member)
My insurance company is: Blue Cross Blue Shield of Vermont
These rate increases are not sustainable. If Vermonters are getting their insurance through their workplace, they are certainly taking home less every year because the yearly increases in salary don't cover the insurance premium increases. BCBSVT and MVP need to come up with a way to offer AFFORDABLE health plans to Vermonters that work and make sense.

397. Ellen Kaye, Barre
I get my insurance from: Employer (self or household member)
My insurance company is: Blue Cross Blue Shield of Vermont
Please protect the people of Vermont from predatory insurance practices. People are going bankrupt due to health costs, and many of us have to decide whether to seek care or not, based on the cost. Many of our small businesses and colleges are going under due to health care costs. Please don't allow them to profit even more off of the people and small businesses of Vermont. Do your job, please!

398. Victor Prussack, Burlington
I get my insurance from: Employer (self or household member)
My insurance company is: Blue Cross Blue Shield of Vermont
Enough is enough. We have a broken system and insurers are part of the problem as are healthcare providers and drug manufacturers. Insurers say that they have to raise rates due to increases in health care costs, but what role do they play in this. Ask for example an OBGyn in private practice what they spend on staff just for billing as it relates to insurance companies. It's astronomical due to the arcane nature of billing practices and reimbursements. How and why is it that my salary has increased 1.5%-3.3% a year for the past 11 years and yet BCBS is "needing" a 15.6% increase. How much have their rates increased in the past 11 years and how does this compare to income in VT? I am lucky to be working for an employer who views health insurance and access to quality healthcare as a good business practice. Others are not merely as lucky. Thank you for gathering public input.

399. Rhonda, Montpelier
I get my insurance from: Vermont Health Connect
My insurance company is: MVP

I honestly cannot afford to pay any more. An increase of this size, any increase, leaves me to question whether or not health insurance fits in my budget. Any health insurance increase is not in line with an annual salary increase I may or may receive, and if I do receive an annual salary increase, that impacts my health insurance even more. There is a real flaw in the system when people receiving subsidies still cannot afford health insurance, yet are working full time both professionally and domestically.

400. Annalisa Parent, Colchester
I get my insurance from: Vermont Health Connect
My insurance company is: Blue Cross Blue Shield of Vermont

It would make having insurance impossible.

401. Maryann Willson, Fayston
I get my insurance from: Vermont Health Connect
My insurance company is: Blue Cross Blue Shield of Vermont

The cost of my sons current plan is already beyond his means. He receives no employer based insurance, not employer financial support for the same, Any increase could result in his inability to afford coverage. Without coverage he will be unable to obtain critical life saving medications. We need Medicare for all, now.

402. Heather Moore, Enosburg Falls
I get my insurance from: Employer (self or household member)
My insurance company is: Blue Cross Blue Shield of Vermont

Health insurance is already too expensive. The funds to cover the employer portion of my health insurance come from the after school program I work for. Every time the rates go up that is less money we get to spend on youth programming because my program has no means of increasing the budget. It is detrimental to our communities to raise rates causing other vital budget items in our lives to be cut.

403. Carolyn Bronz, Bakersfield
I get my insurance from: Medicare
My insurance company is: Medicare

I am writing on behalf of [redacted], who is recovering from a serious surgery. She is a [redacted] and has a BCBS Gold Plan. Here is her story: "I saw a doctor on April 30 for [redacted]. He ordered a [redacted]. The [redacted] was scheduled, but was denied as not medically necessary on May 10th. The Doc had to have a “Face to Face” talk with the company that BCBS has hired as a watchdog, AIM Specialty Health. The Doc told me that it was difficult to get this done as they were not available to him when he called. But, it eventually was allowed and I had the [redacted] done on June 4th. I had to have a REPEAT [redacted] before [redacted]. [redacted]. On June 5th the Doc called me and ordered [redacted]. The surgeon wanted the [redacted] before he saw me. On June 14th I received the first denial. The reason? The physician couldn't identify [redacted]. However, of course, it couldn't be identified [redacted] until the [redacted]. After

many phone calls, paperwork, mistakes made by the AIM and BCBS reps, papers misfiled, lost...On June 21st I received the 2nd denial [redacted]. I called BCBS on June 25th to file a grievance and talked to my Personnel department on June 28th. My personnel department emailed them and we were both stonewalled." Finally [redacted] PC physician went outside the box, contacted a surgeon on his own and showed the [redacted]. The surgeon stepped in to require an immediate [redacted], and the next day she had it. Reviewing [redacted], the surgeon scheduled [redacted], which happened Wednesday the 17th. We are waiting for [redacted] and next steps for this rare condition with uncertain prognosis. If [redacted] had been done in April as it should have been, if BCBS had approved the doctor's order in a timely fashion rather than stonewalling and obstructing - we don't know what the outcome of this situation will be but it is outrageous that she had to wait, to spend hours fighting and advocating, along with others on her medical team, spending their own valuable time trying to get her the treatment that they knew she needed, only to be blocked time and again. We vehemently oppose a rate hike for this insurance company, until they undergo a thorough review of exactly what is their mission? What is their protocol for working with the medical professionals who know what their patients need? Why spend money hiring a "watchdog"? Why do they deny [redacted] that not only could save a life but also save money by being done in time so that a condition does not get worse by waiting?

404. Michael, Calais
I get my insurance from: Vermont Health Connect
My insurance company is: MVP

And the State mandates we participate in this extortion. We need to find a better way before this system collapses.

405. Patricia Williams, Hardwick
I get my insurance from: Self
My insurance company is: Blue Cross Blue Shield of Vermont

These price increases are absolutely ridiculous. Are you trying to make it so those of us who have to pay full premium just can't afford to buy insurance. The people that don't pay, don't care. Do you just want more people that get fined for not having insurance so you can earn more off them?? This state is getting to be an unaffordable place to live.

406. Michelle Hobbs, Burlington
I get my insurance from: Employer (self or household member)
My insurance company is: MVP

This increase makes health expenses unbearable for middle income families. Wages are not increasing at the same rate. How can Vermonters see the benefits of this increase? Better access? Better quality of care? Any benefits to the customer are completely invisible in terms of customer payback. In fact, customer experience is becoming more complicated and restrictive, burdening patients with little flexibility on how they access good care, illegible coding in statements, and decreased empathy for complex health situations. How can any increase be justified?

407. Cara Montague, Winooski
I get my insurance from: Blue Cross Blue Shield
My insurance company is: Blue Cross Blue Shield of Vermont

I am amazed with the cost of health care premiums already. As someone who doesn't get any subsidies, I spend close to $19,300 yr on premiums alone. It is about 1/4-1/5 of our yearly spending. The only year my deductible was met was the year I had a baby- and the fact that delivery and hospital stays are not covered by insurance seems like the most blatant form of the pink tax, so we often spend above and beyond our premiums. I know that my health insurance is supporting other families that don't have as much money, which I support, but I also believe there needs to be more federal support for health insurance so that the burden is not left to the states to make up the difference. A %15 rate increase seems excessive.

408. Emily Trostel, Hinesburg
I get my insurance from: Employer (self or household member)
My insurance company is: Blue Cross Blue Shield of Vermont

Premiums in this state are incredibly high, especially in relation to wages. My employer generously covers my plan, but we are a small company. My wife pays out of pocket for insurance, and premiums don't seem to actually cover anything. If you are on the extreme end of poor or wealthy there is a plan for you, but those of us in the middle are really struggling. Healthcare bills often lead us to not seek medical care.

409. Brenda Travers, East Dorset
I get my insurance from: Online at the MVP website - I'm self-employed
My insurance company is: MVP

We pay over $1100 per month for health insurance, and our deductible is sky high. We had close to $20,000 out of pocket last year for insurance and medical bills. We're not close to Medicare age so we will continue to pay these outrageous sums for another decade. Vermont needs business owners like us to create jobs, but how can anyone afford this?

410. Dale Nixon, Warren
My insurance company is: I don't have health insurance.

Can't afford health care now - definitely will not be able to afford it with a rate increase. Guess I better hope someone drags me over the border to Canada if I get injured!

411. Coleen Healy, North Bennington
I get my insurance from: Vermont Health Connect
My insurance company is: Blue Cross Blue Shield of Vermont

We currently pay $1650+ monthly for health insurance with a large deductible for each of us which we have never met. This amount is larger than our mortgage and property taxes combined. Last year we had an emergency room visit and we are still making monthly payments to cover the $4800 bill. [redacted]. I work for a non-profit and my husband is self-employed with 2 employees that also struggle with the cost of health insurance. We should not be paying 29% of our income for health insurance that doesn't even cover an emergency room visit. The $20,000.00 plus that we pay now is outrageous enough. Next step would be no health insurance. VT needs affordable options!

412. Rosie Laquerre, Berlin
I get my insurance from: Employer (self or household member)
My insurance company is: Blue Cross Blue Shield of Vermont

Rather than increase rates, please look into the insurance billing/pay systems. My husband isn't able to see two providers in the same office ([redacted]) on the same day because insurance can't be billed that way, even though we are already there. Similarly, he had to be discharged from the hospital in order to participate in a long-scheduled specialist appointment. If he wasn't discharged, he would not be able to keep the appointment. Fortunately, he was "ready enough" to be discharged. Let's find a way to put some common sense back into the equation.

413. Sara, Colchester
I get my insurance from: Employer (self or household member)
My insurance company is: Blue Cross Blue Shield of Vermont

No! Healthcare is a human right. No one should go bankrupt trying to stay healthy.

412. Barrie Bailey, Salisbury
I get my insurance from: Retired Teacher & State Employees Retirement System
My insurance company is: Medicare

At 75 years old. I pay a range of $[redacted] a year for non-covered expenses, and my health insurance premiums, for myself and one dependent, already cost more than my yearly pension. Its scary! These requested increases will cause hardship and suffering. These requested increases are way above cost of living increases and are unsustainable for for young families, the working poor, and like myself, the elderly living on fixed incomes. It also discourages younger people who are being courted by the the state to relocate to Vermont, as other state have cheaper rates for health insurance.

413. Claire Hill, East Hardwick
I get my insurance from: Vermont Health Connect
My insurance company is: Blue Cross Blue Shield of Vermont

Premium are high enough, where does the consumer find this extra money to pay higher premiums??

414. Vincent Comegno, Jericho
I get my insurance from: Vermont Health Connect
My insurance company is: Blue Cross Blue Shield of Vermont

I think it is absurd especially since hthe CEO gets paid millions, I’s not about healthcare and hasn’t been for some time. Healthcare is being treated as a business for profits by both the insurance and the healthcare system. The executives are making all the money and dictating what procedures and medicines are covered while the Doctors and nurses are underpaid.

415. Jill Strube, Vergennes
I get my insurance from: Employer (self or household member)
My insurance company is: MVP

The rates are already too high and the insurance is not even any good. As of June 1st I had spent $[redacted] out of my own pocket and the insurance company had paid $1,110. I called MVP and asked why I was paying $600/month to pay twice as much as they did.

416. Julie Devins, Burlington
I get my insurance from: IBM Retired Employees
My insurance company is: IBM Anthem Blue Cross Blue Shield

Health insurance premium costs are already too high, even with high deductibles. I get most of my health care at the UVM Medical Center - the cost of care there is astronomical. Please demand that UVM Med and insurance carriers rein in costs. Start with the high salaries of the top executives and specialty doctors.

417. Virginia Callan, East Montpelier
I get my insurance from: Directly from bcbc
My insurance company is: Blue Cross Blue Shield of Vermont

The increase is too high and will be a hardship for many Vermonters to pay for this vital service.

418. Robert Devins, Burlington
I get my insurance from: Direct with BCBS
My insurance company is: Blue Cross Blue Shield of Vermont

No. It is already way too much. Reduce Executive Pay by 15% or more.

419. Bonnie Hudspeth, Putney
I get my insurance from: Vermont Health Connect
My insurance company is: Blue Cross Blue Shield of Vermont

Vermont families cannot afford increased premium payments. As someone living with a common chronic condition since I was 4, the number of times my family has had to fight to get coverage and basic healthcare needs for the medicine and care I need to keep me alive is not okay. Our premium payments are already high enough. Nearly every time I go to the pharmacy, the pharmacists apologize for how expensive [redacted], and we talk about the ridiculous profits being made are for this life saving medicine, and every year, BCBS adds to it's list of things it won't cover so I pay a ton for healthcare, and then receive mediocre care. We all know this healthcare system is broken: it's works to line the pockets of a few people in charge, not employees at your company, not families of our state. Instead of charging us, your community members, more premium money (and why?), work with all the drug companies that are putting profits over people's lives and get them to pay you more and come up with some generic options so people can get the care they need. Thank you.

420. Ute Talley, Hinesburg
I get my insurance from: directly from MVP
My insurance company is: MVP

The increase from 2018 to 2019 already hurt. PLEASE do not have another large increase. Since 2018 my income has gone DOWN by 15%. If you raise insurance another 11%, I will likely have to go uninsured.

421. Ashley Messier, Jericho
I get my insurance from: Vermont Health Connect
My insurance company is: MVP

As of last fall, I no longer qualified for Medicaid through VT due to our income. We had to purchase a plan through Vt Health Connect for my husband and I. My children were able to keep their Dr. Dinosaur with a monthly premium. I pay $270 a month and still have high deductibles and co pays. I

am barely able to afford the plan, let alone those. An increase would push me to lo get be able to have medical insurance. VT has made crossing the bridge from poverty to the working class almost impossible. Both my husband and I have good jobs, but we dont make quite enough to adequately pay for everything, let alone inadequate medical insurance.

422. Faith Lucas, Irasburg
I get my insurance from: Employer (self or household member)
My insurance company is: Blue Cross Blue Shield of Vermont

I think it can be a hardship to some families. Expenses add up quickly and it is important for families to have affordable healthcare insurance so their families health care needs can be met.

423. Rick Stevens, Stowe
I get my insurance from: Direct from BC/BS
My insurance company is: Blue Cross Blue Shield of Vermont

Insane! If I raised my prices to my customers by 11% almost every year like you folks do, I wouldn't have any customers!!! I'm already paying almost $1,600.00 a month now for just my wife and I and we'll certainly have to reconsider whether to go with out insurance... it's out of control!

424. Jennie Lutton, Williston
I get my insurance from: Employer (self or household member)
My insurance company is: Blue Cross Blue Shield of Vermont

I run a small business and we do provide health insurance for our employees. But it is a high deductible plan and not nearly as good as the plans we were able to offer in the past. If prices go up AGAIN we may have to rethink being able to offer this benefit at all. We DO NOT WANT to let go of this as it is a good way to acquire and retain employees. I have helped a few young people to get on VT Health Connect and it was a very difficult process that did not provide a good plan in the end. I do not want my employees to have to go through the same thing.

425. Richard Thurston, Montpelier
I get my insurance from: Employer (self or household member)
My insurance company is: Blue Cross Blue Shield of Vermont

Vt Health Connect is already more expensive than purchasing through an association, however I am under the impression that the associations that small businesses have used successfully for years are now illegal per legislation that was recently passed. Once again it is becoming far too expensive to do business in Vermont.

426. Kate Donnally, Hyde Park
I get my insurance from: Employer (self or household member)
My insurance company is: Blue Cross Blue Shield of Vermont

I find this potential hike deeply disturbing. Research has already shown that the CURRENT rates are unaffordable and unsustainable for the majority of Vermonters. There is no end in sight to this in our current system. Only a broken middle class and anemic VT economy. Something has to give. I would rather it not be the livelihood of Vermonters.

427. Lissa Robart, Fairfax
I get my insurance from: Employer (self or household member)
My insurance company is: Blue Cross Blue Shield of Vermont
That increase is going to put small business out of business!

428. Christina Wadsworth, Weybridge
I get my insurance from: Employer (self or household member)
My insurance company is: Blue Cross Blue Shield of Vermont
Price increases are causing teachers' compensation packages to erode and causing financial hardship for many employers and consumers. Price increases are not matched by increases in quality, but rather are a function of top heavy management, profit margins, variable pricing schemes, and pharmaceutical industry interests. Vermont should take a leadership role in addressing the public health crisis of healthcare. Say no to the increases!

429. Sally Stetson, Stowe, VT
I get my insurance from: Employer (self or household member)
My insurance company is: Blue Cross Blue Shield of Vermont
I am a single woman working hard to keep my bills paid. I rent. It is not easy to make a living in Vermont. I am a professional and currently pay a monthly insurance bill of about $600. I want to be able to take care of myself and be able to afford health insurance. Instead please cut the "fat" out of the health care system so that good health care is attainable.

430. Joanie Kavanaugh, Waitsfield
I get my insurance from: Vermont Health Connect
My insurance company is: Blue Cross Blue Shield of Vermont
A a healthy 53 year old and self employed, for my husband and I, whom is also healthy our Health Insurance premiums are OUTRAGEOUS! We pay $1100./month plus have a combined $7500. deductible and get NOTHING for it. We are struggling to pay for our health insurance as it is, adding 11% or 1% for that matter will push us into our food allowance. In Vermont, our grocery's are more expensive, eating our which we seldom do is very costly, our property taxes which have just gone up are expensive and our mortgage. We are 2 healthy people making a decent salary, but can barely save any money. PLEASE do not raise our premiums, and in fact consider lowering them or eliminating the deductible.

431. Susan Stock, Shelburne
I get my insurance from: it is an ACA plan bought via the carrier
My insurance company is: Blue Cross Blue Shield of Vermont
Insurance prices in Vermont are unsustainable. The problem may be insurance companies. It is also the number of mandates and the monopoly position of FAHC. I cannot afford my plan and it is only a bronze plan. God knows what others with beter coverage do.

432. Mike Hannigan, Shelburne
I get my insurance from: Business group
My insurance company is: Blue Cross Blue Shield of Vermont

These are absurd. The cost we're paying is already absurd. We own a small business, and our biggest expense is insurance, and it's not sustainable. It wasn't sustainable 3-4 years ago. Going up 15%?!?!? Give me a break. The rate of inflation is next to nothing; what could possibly justify these increases? There's no f'ing way for small businesses to keep up. This system - along with its cost - is BROKEN.

433. Julia Curry, Burlington
I get my insurance from: Employer (self or household member)
My insurance company is: Aetna

I sit on the board of an organization with over 300 employees. Our executive director notified us that the expected health-insurance price hike will hurt our ability to raise wages. These are mainly service jobs that don't need a college degree. We know our employees struggle with the high cost of living in Chittenden County. We want to pay more; we also want them to stay healthy, which means providing insurance they can actually use, i.e. without prohibitive co-pays. The continual rate increases pose an impossible choice to us and all employers in the state. Please do not let this continue.

434. Nathan Shepard, Starksboro
I get my insurance from: Employer (self or household member)
My insurance company is: Blue Cross Blue Shield of Vermont

Our insurance is very good, but expensive and cumbersome. I understand inflation, and we want to maintain quality, but why does insurance have to be so expensive? Why does it need to be tied to our employment or obliged by law?

435. Keren Johnson, New Haven, VT
I get my insurance from: Vermont Health Connect
My insurance company is: Blue Cross Blue Shield of Vermont

The overall health of our nation will decrease if increases continue to happen because we, the average American worker, cannot afford these prices! We are refusing to go see the doctor when we really need to because we cannot afford the bill. We are running into medical debt in spite of working long hours. If the prices continue to increase I can guarantee that myself, as a mother of two small children, will be unable to afford medical care when I really need it. Why are we resorting to policies and prices that are bringing us back to third world medical care? Help Vermonters succeed and not suffer! We can and will help build a strong Vermont economy, but we cannot do that if we cannot afford the care necessary to keep our own bodies strong and healthy.

436. Joseph Citro, Windsor
I get my insurance from: Medicare and BC/BS of VT
My insurance company is: Blue Cross Blue Shield of Vermont

No one gets a 15.6% or 11% raise in their salary or Social Security. So to pay these price hikes Vermonters will have to go even more into the hole. With so many places -- taxes, groceries, heating , and more -- competing for our money, many of us feel under attack and insecure. And on top of that we have to worry about devastating illness and bankruptcy! I am a 71 years old and semi-retired. There is just about zero chance of a monetary raise at this point. With added financial burdens my quality of life

can go nowhere but down. (And I am far from alone in this sinking boat. Too many Vermonters can't afford health insurance at all; they are forced to see it as an expensive luxury.) I think the very fact that BCBS and MPV feel that they need so much extra money does not demonstrate that WE need to pay more. Rather, it is just another clear indication that there is something terribly wrong with our healthcare "system". I have made significant contributions to the state by writing about our history and folklore, but to do so I have been self-employed, never benefiting from pensions, golden parachutes, or 401ks. I am living in a "genteel poverty" where my biggest monthly expense is healthcare! Many of us are making do with what we have. BCBS and MPV should do the same. I am opposed to the raise in premium cost and feel that their planning, not our paying, is the answer.

437. Raquel Aronhime, Burlington
I get my insurance from: Employer (self or household member)
My insurance company is: MVP

I used to have BCBS but switched to MVP because it was less expensive, though I had to give up [redacted]. Even with this slightly more affordable carrier, my net take-home income each month is about $200 less than it was 5 years ago (I've been in the same job and received cola increases each year). I also am [redacted]. I pay multiple providers minimum amounts each month (totalling about $300-400 monthly; thank goodness I have an HSA account to which both my non-profit employer and I contribute). This is unsustainable. Essentially, I work to cover the cost of healthcare for my family. I feel fortunate to have coverage and an employer that does what they can for employees, but I am making less money each year and carrying more healthcare debt. It's ridiculous.

438. Kate Clem, Colchester
I get my insurance from: Employer (self or household member)
My insurance company is: Blue Cross Blue Shield of Vermont

Salaries are not increasing enough in my large workplace to help with the increasing cost of living. The additional health insurance hike will be a hardship. We consider ourselves incredibly lucky to be covered with contributions from my employer - but they will have to pass this cost on.

439. Judy Hettena Wright, South Burlington
I get my insurance from: I am self-employed and provide insurance through my business
My insurance company is: Blue Cross Blue Shield of Vermont

This is an unreasonable increase!

440. Emmanuelle Soumeilhan, Montpelier
I get my insurance from: Employer (self or household member)
My insurance company is: BCBS of California

It is wrong. They are not the only culprit though. The drug industry and the whole health care system needs a complete overhaul.

441. Joe Weinmunson, Waterbury
I get my insurance from: Employer (self or household member)
My insurance company is: Blue Cross Blue Shield of Vermont

This isn't sustainable. We cannot continually raise rates, year after year, above the general rate of inflation and above the rise in wages. [redacted]. No person, no state, no society can continue to function like this.

442. Victoria M, St George
I get my insurance from: Self directly from MVP
My insurance company is: MVP

As a self-employed resident with no access to employer-offered insurance and no access to subsidies, I find the proposed rate increase to be unsustainable, particularly as we've seen rate increases year after year. If the rate goes through as proposed, my family, which includes two small children, will be forced to reduce or cancel our coverage. We simply cannot afford to pay more than what we consider to be an already outrageous expense.

443. Jennifer Garber, Waterbury Center
I get my insurance from: Vermont Health Connect
My insurance company is: Blue Cross Blue Shield of Vermont

Our health insurance premiums for the silver plan with HSA and deductible are a higher bill than any mortgage we've had. Last year with the premiums, deductible and co-pays cost our cost for health care ran 18-20K. The proposed premium increase seems very excessive to us.

444. Donna Lyons, Richmond
I get my insurance from: Vermont Health Connect
My insurance company is: Blue Cross Blue Shield of Vermont

I am on SSDI I get 2% increase. Where is the other 9% supposed to come from?

445. Monica, Waterbury
I get my insurance from: Vermont Health Connect
My insurance company is: Blue Cross Blue Shield of Vermont

This is highly distressing news. Our health insurance is already a huge burden to pay for, even with any discounts, and even though we don't have very high coverage. It's our biggest expense by far--even more than our mortgage. Every year it goes up we struggle with how we are going to afford to sign up again, what else we will have to give up. This is increase is simply unexceptable. I beg you please to stop making hard-working Vermonters choose between health care and their other basic necessities. It's inhumane. Taxes keep rising, food gets more and more expensive, keeping a car on the road and oil in the furnace is a continued challenge. And the medical industry and hospitals keep getting bigger, more expensive, and more confusing to navigate (not to mention, less and less personable!)
I know there are many moving into Vermont who can afford the price hike, but this middle class Vermonter is not one of them. And please let us not forget those who are even more vulnerable. Leaving anyone behind puts us all at risk in the long run. As an insurance provider, I do hope that fact is not lost on you. Thank you for the opportunity to voice my concern.

446. Karlinda King, Milton
I get my insurance from: Employer (self or household member)
My insurance company is: Blue Cross Blue Shield of Vermont

I want to tell you about my experience with BCBS when it came getting s medication this year. This is a medication that I have been using for several years. I had to make several phone calls to the insurance company and to my doctor's office to get this medication. Not only did it need the usual prior authorization but it then needed another prior authorization, which my providers office knew nothing about, because it's expensive. This is the actual reason that it was held up, it is expensive. Of course it is it's a biological, there is not another medication that works. Believe me I tried everything less expensive. [redacted]. I have been at the same employer for 4 years prior to this and have had this medication for all of those years so that BCBS not only knew that I was taking it but knew why I was am taking it. I don't think they use their money wisely. I think they are unethical in how they treat their customers and I think they do not need to be rewarded with an increase when they saved money by not allowing people to have their medications. I was not the only one this happened to, their were many at my place of employment that this happened to.

447. Denise Green, Waterbury Center
I get my insurance from: Employer (self or household member)
My insurance company is: Blue Cross Blue Shield of Vermont

The increase is too high, let's not forget BCBS also is the only insurance coverage offered to thousands of State if Vermont Employees which you have to ask is this appropriate for one local company to have this corner of the marketplace and then want increases ? Where's the competition?

448. Sharon Paige, Middlesex
I get my insurance from: Employer (self or household member)
My insurance company is: Blue Cross Blue Shield of Vermont

Being on a fixed monthly income I have come to realize that premiums go up and coverage seems to go down. Cost of living increases are few and far between. And they seldom match the insurance premium increases. The 15.6% increase is excessive. I encourage the board to negotiate a lower increase so I can continue to keep my babe of VT insurance.

449. Erin, Hinesburg
I get my insurance from: Employer (self or household member)
My insurance company is: Blue Cross Blue Shield of Vermont

It is WAY TOO LARGE of an increase! I do not see me getting a 15% increase in my earnings next year, so this increase will immediately affect my income.

450. Karen Bunnewith, East Calais
I get my insurance from: Employer (self or household member)
My insurance company is: MVP

Are you people crazy? Why would you even consider a rate hike? We are being bankrupted by the health insurance industry!! Seems to me, they know the end is coming for them and they are trying to get every penny they can! Medicare for all, it's coming! Can't stop it!

451. Kimberly Kimball, Barre
I get my insurance from:
My insurance company is: I don't have health insurance.

I currently do not have any health insurance due to the fact that I can not afford the monthly premiums. With the proposed rate increases I will never be able to afford insurance which in turn has an effect on my health. Thanks for signing an early death certificate for many Vermonters!

452. Meg Spicer, South Newfane
I get my insurance from: Employer (self or household member)
My insurance company is: CBA Blue

That looks like an exorbitant price increase, and one that will make health insurance costs impossible for many people. I essentially take a cut in pay every year because my salary only increases by 1% but health insurance costs increase by much larger amounts every year. [redacted] I can't imagine how I could pay for a 15.6% price increase on my insurance. It would also place undue burden on my employer (Landmark College), which is already under the same pressures that other small colleges in VT face, some of which have already closed. We have over 200 employees there, which would be a lot of people out of a job if the college were to close.

453. Glen Kavanaugh, Waitsfield
I get my insurance from: Vermont Health Connect
My insurance company is: Blue Cross Blue Shield of Vermont

Health Insurance is currently and has been completely UNAFFORDABLE for many years. It is absolutely absurd to pay $12,000 + a year for a couple and then have an outrageous deductible and out of pocket maximum. It is essentially a catastrophic plan with a VERY HIGH premium that you get absolutely NOTHING for. Last year, we had the misfortune of hitting the family maximum of $13,000 + bringing our cost of healthcare to $25,000 +!!! Who can afford to pay this!!! And now, like every year, BCBS is asking for another steep yearly increase. You, the Green Mountain Care Board, should NOT approve ANY increases in premiums and deductibles or out of pocket maximums. We, like many Vermonters, have to ask whether we can continue to have insurance as it has a HUGE impact on our finances. A reminder of your role: The Green Mountain Care Board, created by the Vermont Legislature in 2011, is working to ensure that our health care system provides quality, AFFORDABLE health care to all Vermonters while reducing waste and controlling costs. Any increase will make insurance more unaffordable. There is nothing affordable about health insurance.

454. Mary, Starksboro
I get my insurance from: Vermont Health Connect
My insurance company is: Blue Cross Blue Shield of Vermont

As a single person, I would have to give up my insurance if the rates go up. I can't afford it even with the subsidy from the fed and vermont.

455. D. Martin

If I could have come to the meeting I probably would have been one of the people crying. Unbeleivable, I don't get help. Struggle to hold a parttime job because of health problems yet don't qualify for help because as a married person our household income is too much. In five years we will have to refinance our house to pay medical insurance. Is this what you are aiming for? , to bankrupt

everyone who pays out of pocket? Or are you just trying to drive everyone that isn't on Medicaid out of state? Please for once just deny the rate hikes , and maybe the CEO's can tighten there budgets.

456. D. Wendy Scitt, Enosburg Falls
I get my insurance from: Teacher retirement
My insurance company is: Blue Cross Blue Shield of Vermont

It is shameful that in the richest country in the world people have to resort to Go Fund me pages to pay for medical bills. Our medical system needs a complete overhaul and raising the cost of it now is terrible. I have medical insurance to cover me for my doctors appointments now but if I or my husband were to get seriously ill I don't know what we would do.

457. Carol Chenevert, Charlotte
I get my insurance from: Employer (self or household member)
My insurance company is: Blue Cross Blue Shield of Vermont

Premiums are ridiculously high already, and out of pocket continues to climb.

458. Victoria M, St George
I get my insurance from: Self directly from MVP
My insurance company is: MVP

As a self-employed resident with no access to employer-offered insurance and no access to subsidies, I find the proposed rate increase to be unsustainable, particularly as we've seen rate increases year after year. If the rate goes through as proposed, my family, which includes two small children, will be forced to reduce or cancel our coverage. We simply cannot afford to pay more than what we consider to be an already outrageous expense.

459. Martha Douglass, Moretown
I get my insurance from: Vermont Health Connect
My insurance company is: Blue Cross Blue Shield of Vermont

We are already paying $1800 plus per month for insurance and one of our sons will be 26 this year and will need his own policy. He can't pay for one so we'll ALREADY need to be adding that to our expenses also without any reduction in our premium. We also end up paying thousands per year in deductibles and there is no coverage for dental or optometry so we pay those costs on top as well. This greatly impacts our ability to plan and save for retirement - quite simply a rate increase is prohibitive and our premiums are already SO much that we are working to pay for insurance and can't save for our upcoming retirement at all. Pretty poor in a state and country with so much wealth available to some.

460. Nicole, Essex
I get my insurance from: Employer (self or household member)
My insurance company is: Blue Cross Blue Shield of Vermont

We have to figure out how to control these costs! Why are insurance companies not considering alternative approaches to better health outcomes? It would be much more cost effective for insurance companies to provide wellness coaches and pay a monthly allowance for healthy groceries for people to learn how to care for themselves better than to defer expensive chronic disease costs to the system, which we can no longer afford, but more importantly, chronic disease is exploding with no relief in sight. Most people have a rough idea of what they need to do to be healthier, but compliance and costs are real issues. People need an ongoing, supportive approach, along with education and accountability. Why

not invest there? A 10-minute doctor's visit offers nothing in this arena. Ask any doctor how they feel about addressing patients with chronic disease and they will report how frustrated they are with the lack of patient improvement and no compliance. How can this be expected without a more comprehensive approach? This is where pharmaceuticals enter the picture, which do not considerably improve health outcomes and cost a lot of money. If we don't start approaching this differently, no one will have insurance - we won't be able to afford it (as citizens and employers). BTW, [redacted]. Oh, and I paid quite a bit out of my own pocket to get here - 1) because my deductible is so high and 2) my insurance wouldn't cover some of the most simple of wellness needs. After several jaw-dropping costly visits to [redacted]. The difference was insane. Most people don't even know this option is possible. It can be done. Vermont is leading the nation in non-affordability and having only two health insurance companies and their outrageous premiums to choose from doesn't help. It's time to stop talking about the growing issue and do something about it.

461. Liz Scharf, Middlesex
I get my insurance from: Employer (self or household member)
My insurance company is: Cigna

There's a price to pay for improvement in technology and cures for diseases and prolonging life. If we are going to continue to demand services that require the latest and greatest technology, and we want it now, then I can see the increase. However, I don't understand how we have the best medical technology in the world but the worst health outcomes. Clearly having better technology doesn't equate to better health outcomes. I currently pay $650/month out of my paycheck for my family of 4 plan with Cigna. My employer pays something like $1200/month as their portion. It costs about $24K to insure our family and we usually don't use it. (Plus there's a 5K deductible that my employer and I share). So, Health care is a big part of my budget--but, for our salary, our share is only about 5% of our gross income. But, we also make more money than the average Vermont family of 4 ($[redacted] for two of us). Here's something I noticed when my mother was diagnosed and treated [redacted]: UVM medical center kept an [redacted]. I am certain they kept her in the hospital because there was supplmental BCBS health insurance (a very good plan from my dad's former employer) in addition to Medicaid. [redacted] and I am convinced it was because she was a cash cow with the health insurance. My mother-in-law, in comparision only had medicaid and was shut down pretty quickly for health care life extensions when she [redacted]. I totally felt that the extremes UVM medical center went to were too much--and I think it was because they could charge for it. I think we need to focus on health care--putting money toward helping people live healthier livestyles--removing sodas and junk food from 3 Squares, promoting exercise, and improving the food that is given out at food shelves. Prescriptions for healthy foods!

462. Emily Neilsen

To Whom it May Concern: I write this not just for myself and my family, but because I believe rate increases to VHC plans will negatively impact Vermont's economy.
First, the personal: I currently make about [redacted] year and I pay $952.17 a month for my son and I to be insured through MVP. This was the most affordable plan I could select, when I weighed our likely medical needs. In total, we will likely have spend around $15K this year on medical expenses, assuming we don't have any health emergencies or accidents. My husband makes about [redacted] year and is insured through the VA, which is less than ideal since we live in Hyde Park and neither White River, nor Burlington are very convenient for medical visits. In total, we will spend close to 20% of our combined gross income to insure 2/3 of our family, or 50% of my gross income to insure 2 people. According to the ACA, a family should not spend more than 9.69% of its income on health insurance premiums. If they spend more than that, it is unaffordable. https://www.vtlegalaid.org/sites/default/files/HCA-The-Cost-of-Health-Insurance-Quantifying-the-Vermont-Affordability-Crisis_V3.pdf In addition, the plan I have is a high deductible plan, which often leads us to wonder whether or not the treatment that is advised by health care providers is "worth" it. Of course, opting out of treatment tends to be cheaper in the short term, but more costly in the long term. Eventually, we risk being bankrupted by the very insurance that is meant to cover and protect us. These are the choices we face this year, at the current, unaffordable rates. If MVP and BCBS follow through with proposed increases, we may face the terrible decision of whether or not we can afford insurance. What then for the health outcomes of my two-year-old? For me? What is the stress on the entire system (health care and beyond) when we, and many others, cannot afford to access health insurance and treatment? And, imagine where this puts people like myself: After taxes, I take home about [redacted], $15K of which will go to health insurance. The remaining [redacted] does not cover childcare needs. What choice would you make in this case? Would you continue to stay in the workforce? Or would you opt out to save money for your family because you'd qualify for benefits? If you believe I am someone who arrived at this moment because of a lack of education, you are wrong. I graduated Phi Beta Kappa from Skidmore College and later graduated with a 4.0 in a Master's program from Bowling Green State University. Work in rural Vermont is not always easy to come by, especially in certain fields, and some work is remarkably undervalued. I love this state for its beauty, its grit, its connection to the earth and its people. The current state of affairs with these plans is not sustainable; I fear a rate increase may crash the program entirely. But, even if it doesn't, these increases will have detrimental impacts on many Vermont families and the ripple effects will be felt for years.

463. Bob, Montpelier
I get my insurance from: Vermont Health Connect
My insurance company is: Blue Cross Blue Shield of Vermont

Insurance companies and PBM's are making large profits and squeezing dollars out of individuals and businesses in Vermont. They are causing something that is already unaffordable to be even more so. How about instead of raising rates to Vermonters some of these executives to consider a pay cut of their exorbitant salaries?

464. Sue Hoxie, Brandon
I get my insurance from: I buy direct form BCBS
My insurance company is: Blue Cross Blue Shield of Vermont

I am self employed and buy insurance direct from BCBS. My household income is too high to qualify for subsidies. Health insurance is now for catastrophic illnesses. If my premium for a silver plan

with moderate deductibles costs $700/month, it is not sustainable. That's more than a mortgage payment. I will seriously consider going without insurance coverage and take my chances. Why can't we figure this out as a country? (rhetorical question)

465. Susan Bettmann, Middlesex
I get my insurance from: Employer (self or household member)
My insurance company is: Blue Cross Blue Shield of Vermont

BCBS of Vermont has raised their prices every year in what looks like a case of pure greed. Most Vermonters that I know don't get a 15% annual pay raise. I ask you not to let BCBSVT raise their rates this much. It just creates a hardship for working Vermonters. It doesn't improve health coverage or health care.

466. Eric von Wettberg, South Burlington
I get my insurance from: Employer (self or household member)
My insurance company is: Blue Cross Blue Shield of Vermont

Please no. Executives do not need bonuses to buy third homes. This hurts real vermonters and is unjustified.

467. Karen Boyce, Northfield
I get my insurance from: Employer (self or household member)
My insurance company is: Blue Cross Blue Shield of Vermont

The prices are already way too high, their cheapest policy is $500.00 a month for an individual. When you don't get insurance thru an employer most VT's can't afford that and now they want to make it harder for us to get health care. If you can afford the premium then you can't afford the deductible. Please fight for us who want to afford to stay and live in VT.

468. Jeffrey Flagg, Waitsfield
I get my insurance from:
My insurance company is: I don't have health insurance.

Their programs were already unaffordable before the increase and make no economic sense for people who don't take drugs m

469. Cecile Gebo, Vergennes
I get my insurance from: Genworth/Aetna
My insurance company is: Medicare (1st) Genworth/Aetna (2nd)

My insurance is going up as of 8/1 by 17.5%`

470. Carrie Riker, Worcester
I get my insurance from: Employer (self or household member)
My insurance company is: MVP

I know that the issue of health care costs is a very complicated one and that these insurance companies are just trying to cover their costs. But a good portion of my paycheck already goes toward health insurance. I am moving this coming month and my rent will be going up. Additional costs for insurance will make my funds extra tight. My co-pay is high as is my deductible so when I do get health care, I am still paying! I am working on a bill still for care I received last year that I had to put into a payment plan.

471. Mike Talbert, Glover
I get my insurance from: Vermont Health Connect
My insurance company is: Blue Cross Blue Shield of Vermont
The current cost is prohibitive, 15 percent increase in one year seems totally excessive. As it is $1500 monthly for a childless couple is beyond reasonable. We need to address this national issue, now!

472. Missy, Wolcott
I get my insurance from: Vermont Health Connect
My insurance company is: Green Mountain Care
I pay for my husband's VHAP monthly. Will this increase affect that payment?

473. Robert K. Wright, Burlington
I get my insurance from: Employer (self or household member)
My insurance company is: Blue Cross Blue Shield of Vermont
Don't allow these increases! Make it clear that major haircuts of upper level administration at BCBS must occur.

474. Carrie Riker, Worcester
I get my insurance from: Employer (self or household member)
My insurance company is: MVP
Additional thoughts to add to earlier! I do get support from my employer toward my health insurance. This support happens in part because of the fees we charge to schools and families who participate in our programs. If my health insurance goes up and my employer (non-profit) wants to help defray this increase, the only way to cover it is to pass the costs along to schools and families. An increase in one place leads to an increase in many places. Do these insurance companies really need more of my salary to cover their costs?

475. Paul Sciortino, Jeffersonville
I get my insurance from: Employer (self or household member)
My insurance company is: Aetna
I would like more breakdown of the purported data. they cant just say prescription prices have gone up! break that down, is it cancer drugs, is the last 6 months of life drugs? what about generic drugs, what is the increase for that group versus branded. what data do they have if any to show economic models that show if use drug X it prevents hospital admission or relapse of condition. some drugs save the health system money. you wouldnt say cars have lousy gas mileage rates, you would break them down by model, i.e. compact, truck, etc i would also like a breakdown on insurers own administrative costs and salary. how much of a raise did their organization increase. how many more employees did they hire. i also want to hear a position statement on how the monopoly of UVM healthcare system has on stifling competition to help reduce cost. if this was back in the 1980's UVM would be sited for kickbacks, federal law broken. they refer all patients to their own, diagnostics, lab work and referring specialist. there is no pathway or process for UVM to be fair balanced on how a patient could use different services/vendors that cost less than their own. i.e. MRI cost half as much outside UVM. finally the public needs to have access to the data, transparency. this should not be behind close door data. because than all the public hears is what the media and the players portray but can not be contested or argued.

476. Jessica, Hyde Park, VT

Please don't allow for over a 15% increase of BCBS. My family struggles to pay for child care and make ends meet with two full-time jobs. I already pay a significant portion of my paycheck for health insurance and cannot afford anymore. The cost of living is too expense and the rate of pay too low in VT for families to continue to afford living here!

477. Karen Wiseman, Worcester
I get my insurance from: Medicaid
My insurance company is: Medicaid

This happens with not only the insurance companies regularly, but also companies like Comcast. Every year, the rate increases are at a minimum 5%. Liberty Mutual increased my home owners insurance over 10% every year for seven years until I found a new company and when I told Liberty, they basically didn't care. People are not getting 5, 10 or 15% raises every year. Most people either are not getting ANY raise regularly or a pawltry 2, 3 or 4%. These companies need to figure out how to balance their budget just like every household in Vermont. I suggest cutting the CEO and Executive pay. In fact, total compensation for Daniel Loepp, CEO of Blue Cross since 2006, hit $19.2 million in 2018. That was up from his $13.4 million payday in 2017 and $9 million in 2015. Loepp is now among the five highest-paid CEOs of any Blue Cross Blue Shield insurer in the nation. If you took every Vermonter's premium and completely put it towards ONE person's pay, we wouldn't even make a dent in this YEARLY salary. Come on, enough is enough. I can see quite well where these rate increases are going. He should figure out how to run his company without rate increases for a few years to actually deserve a $6 million dollar raise over two years. Other companies don't continually increase their prices of goods, they figure out how to control their budgets. Say no. Enough. Average Vermonter's are trying incredibly hard to balance their budgets and live within their means but simply finding another insurance carrier isn't feasible for many as it comes along with potenitally changing doctors, specialists, medications, etc. The HUMAN energy, time and resources is simply mind boggling when it comes to navigating insurance. Just shouldn't be this way for the amount paid in premiums.

478. KAISA LEWIA, STOWE
I get my insurance from: Employer (self or household member)
My insurance company is: Blue Cross Blue Shield of Vermont

Unaffordable and unreasonable.

479. Earl Mongeon, Westford
I get my insurance from: Employer (self or household member)
My insurance company is: Blue Cross Blue Shield of Vermont

This increase is unfair to working people and all Vermonters, because the Majority of Vermonters do not get increases of this kind in income.
It's that simple and these increases should not be allowed.
That's why we need single Payer Health care and put these Insurance companies out of business to stop the price gouging of Americans and Vermonters.

480. Kermit R. Spaulding, Stowe
I get my insurance from: State
My insurance company is: Blue Cross Blue Shield of Vermont

Cannot afford the insurance now! Increase means at 83 years of age I will have to get another job!

481. Kyle
I get my insurance from: Employer (self or household member)
My insurance company is: Aetna

Vermonter's are obviously not earning a 15.6% wage increase, so this is a massive blow to cash flow for individuals and families. To reduce costs, they should look into offering consumer-driven health plans coupled with HSA's, or another form of high deductible plans. Clearly it's unsustainable to see the rate of increase in health care premiums that we've seen from BCBS. If healthcare costs are truly increasing at a rate many multiple times higher than inflation then the plans need to change accordingly.

482. Mary and Fred Lower, Middlebury
I get my insurance from: Employer (self or household member)
My insurance company is: Blue Cross Blue Shield of Vermont

Public school teachers' salaries do not go up enough yearly to cover the yearly increasing amounts taken out for health insurance. Between rising real estate taxes and health insurance, our income is dwindling-- we are sinking.

483. Monica Litzelman, Montpelier
I get my insurance from: Employer (self or household member)
My insurance company is: CIGNA

The Blue Cross Blue Shield of Vermont proposed price increase has resulted in my employer selecting an alternate health insurance company for the new fiscal year. Transitions cause disruption and confusion. My employer's new insurance company does not cover the same providers so there is an immediate disadvantage. A 15.6% premium price increase will result in even more citizens having less insurance coverage. Salaries are not increasing at a similar rate and the cost of insurance coverage will be out of reach for many people.

484. Annette Small, Lake Elmore
I get my insurance from: Employer (self or household member)
My insurance company is: MVP

I am concerned that insurance profits are growing or staying the same, while employers are being forced to share cost increases to employees. Vermont businesses are not seeing an 11% or 15.6% increase in profits to cover these increases. Employees are not seeing 11% or 15.6% increases in pay either. I fear continued increases will force more people to abandon insurance. Insurance is the largest uncontrollable expense we face.

485. Tracy Lambert, Stowe
I get my insurance from: Employer (self or household member)
My insurance company is: MVP

This is unaffordable to the average working person.

486. Rebecca Plummer, Montpelier
I get my insurance from: Employer (self or household member)
My insurance company is: Blue Cross Blue Shield of Vermont

The rate increases requested by Blue Cross Blue Shield of Vermont and MVP are unacceptable. People and employers cannot afford them. At my non-profit employment, we repeatedly have to choose between chipping away at our already-too-low salaries, reducing staff who do important work, and/or passing along the health care cost increases to employees who cannot afford them, year after year. This cannot go on. Please rein them in.

487. Dena Keith, Elmore
I get my insurance from: Employer (self or household member)
My insurance company is: Blue Cross Blue Shield of Vermont

Outrageous, nmore and more young adults are now opting out of have health care due to cost, others are not fully covered. Vermonters cannot afford to pay higher rates to get coverage, and no one employed here gets a 15 reidiculous rate increase in a year. BCBS should beheld accountable to properly manage our money invested.

488. Susan Nicholas, Waterbury Center
I get my insurance from: I am self employed and a sole proprietor
My insurance company is: Blue Cross Blue Shield of Vermont

I have a Bronze plan for $504. a month that has a 7550 deductible. I am at the top amount of what I can pay monthly for any plan. I have to include my husband's income in the formula which put me into an income category just out of reach of help. He pays for Medicare, supplemental, and dental and we cannot place that into our budget equation because of premium stacking built into the law. If rates increase and I cannot get help from the exchange I will drop health insurance for two years until I am eligible for Medicare. This has caused us much hardship in our later years. Now that there is no tax implication I would simply drop coverage. There is no other financial burden that has so completely changed our lives and our ability to stay in Vermont than this cost. I have had to buy a single person individual plan using his income for 6 years since he was on Medicare. I contacted many legislators early in this mess and was told that there was nothing that I could do. Not one professional group that I belong to will cover me in Vermont.

489. Anne & Joseph Tisbert

Dear Board members, We are not able to sustain the increasing costs of health insurance.
It is obvious that the insurance companies are not looking out for the patients' best interests.
Please stop the insurance companies from their tricks of now adding " "Exclusions" to their policies for anything deemed medically necessary. We understand the cost of Health Care in our country is outrageously expensive. We have previously paid for plan increases with the expectation of full service when paying for these plans. We are not willing to have benefits excluded to save the insurance companies money. Insurance is about having coverage for expensive procedures that are "Medically Necessary". Insurance companies have found loopholes that protect themselves legally from paying for medically necessary procedures, medically necessary medicines, medically necessary equipment, and medically necessary therapies. The public can not even get support from "VT disability law", because these insurance companies have found ways to "Legally" remove necessary services from their plans by calling them "EXCLUSIONS". Insurance companies have a game they are playing where they can list policy exclusions and they do not have to pay for medical equipment that is in fact deemed medically

necessary. Soon they will exclude anything that is expensive, but wait, isn't this why we have medical insurance?? Isn't Insurance there to soften the big expenses that are medically necessary correct? Whether it is a visit to the E.R.. a surgery, medicines. therapies, or procedures that do cost a lot of money, Isn't insurance supposed to cover the unexpected medically necessary things in life. They have now found loopholes so they can list exclusions to these medically necessary procedures and items and pick and choose what they will cover based on the costs. Here are several examples:
Speech devices for those that cannot speak, Chemotherapy treatments. Certain drugs and drug therapies. Certain A.L.S. treatments. Ceiling lifts to transfer patients in and out of bed into wheelchairs and tubs for bathing. Ramps to get a wheelchair into an inaccessible home. Therapies that cannot show significant progress. Our personnel struggle: [redacted] Then began the nightmare of hearing he may permanently lose his health insurance if he ever missed a payment, and then not able to receive coverage or be listed as having a previous condition so it was then 20 years ago when we chose to pay for the top health care insurance plan so his needs would be medically covered. Blue Cross Blue Shield, we thought, this would be the best way to go forward and make sure he was going to always be covered to provide for his needs [redacted]. There is no way to appeal and no way to even fight for his needs. Insurance companies have found a legal way to remove these and many other costly items from their policies. A policy he has paid into for over 20 years and now when his needs have increased they are going to stop his ability to receive what he medically needs. [redacted] I would hate to think that the government would allow the insurance companies to continue to use any exclusions if there are written doctor recommendations demanding these medical necessities for patients. It is obvious that insurance companies are not looking out for their patients' medical needs. Please stop the insurance companies

from their tricks of now adding " "Exclusions" to their policies for anything deemed medically necessary. Thank-you

490. Name: Lyne, Williston
I get my insurance from: Vermont Health Connect
My insurance company is: Blue Cross Blue Shield of Vermont
It is already too expensive, it should be reduced not increased

491. MARILYN GAUL, WARREN
I get my insurance from: Employer (self or household member)
My insurance company is: Blue Cross Blue Shield of Vermont
What will the increase by BCBSVT be needed for? That would be helpful to understand why I will be required to pay an increased rate.

492. Maddy Willwerth, Vergennes
I get my insurance from: Employer (self or household member)
My insurance company is: Blue Cross Blue Shield of Vermont
Our family of 4's health care costs are already the 2nd most costly item in our budget behind our mortgage and we don't have any "pre-existing conditions" or ailments that require anything more than regular checkups.

493. Rick, Morrisville
I get my insurance from: Employer (self or household member)
My insurance company is: Cigna
It's an insane price jump on an already expensive item. These large rate increases occur far to often.

494. Terry McGreevy, Coventry, VT
I get my insurance from: Vermont Health Connect
My insurance company is: VA health care
This health care insurance is for my wife. We have the silver plan.
Mostly a good plan, just has to high cost for doctors visits, my wife waits long periods of time before seeing the doctor because of cost. I'm asking please don't raise the cost. I'm retired, a veteran with service connected disability, on SS. So my income is limited, she works full time as a restaurant manager. We have 5 grown children and 12 grandchildren. All but 4 not living here. This state is the best for raising a family. Please let us keep it this way. Thank you for listening. The McGreevy family.

495. Gale Martin, Morrisville, VT
I get my insurance from: Employer (self or household member)
My insurance company is: MVP
I receive a annual 2% cost of living increase. I CAN NOT afford an 11% increase!!!

496. Cynthia Huard, Middlebury
I get my insurance from: Employer (self or household member)
My insurance company is: Employer

The health insurance through Vermont Health Access has been good. The price has gone up every year. It was a reach this last year. If the increase goes through I will decline insurance or get the least coverage possible. Also, as a friend noted to me: I choose not to go to the doctor even with the expensive premiums I pay because the copay, deductible and co-insurance costs are very high. Thank you

497. Samara Mays, Montpelier
I get my insurance from: Vermont Health Connect
My insurance company is: Blue Cross Blue Shield of Vermont

Premiums are barely affordable for my family as it is. I am self employed and own and operate a preschool program in Montpelier. My husband is a self employed granite sculptor in Barre. [redacted]. Our family will be paying over $20,000 total for health costs this year, and likely much more next year as we may no longer qualify for premium assistance. [redacted]. I have no idea how we would pay for insurance if there were a 15.6% increase. If I close my preschool program to find a job with health insurance, there are 26 families who will not have much-needed high-quality childcare -- for which there is already is shortage in our area. The cost of health care is a huge challenge for other early educators, I know. I am a native Vermonter -- we are a family with two children. My husband and I both work really hard at jobs that contribute so much to our communities, but we are faced with very hard decisions when our heath care costs comprise such a huge percentage of our income, and with no relief on the horizon. [redacted] Being able to access affordable health insurance is critical to continuing to be business owners in this state. I beg you to consider families like mine when considering your decision.

498. Allison, Montpelier
I get my insurance from: Vermont Health Connect
My insurance company is: MVP

Insurance rates are already very high and border on prohibitive for even middle class income folks, let alone poor and working class. Increases of this amount would push more people into a situation of not being able to afford insurance and that is not a reasonable direction to continue in.

499. Mary McQuiggan, Montpelier
I get my insurance from: Employer (self or household member)
My insurance company is: MVP

The proposed increase in premium prices will have a direct negative impact on families and individuals across the state. So many Vermonters struggle to meet their monthly health insurance fees

and increasing it further will only increase the burden on families or result in families needing to choose to go without insurance because they can no longer afford it. Vermonters are not receiving wage increases that align with this increase in cost.

500. Ruth Miller, Richmond, VT
I get my insurance from: Vermont Health Connect
My insurance company is: Blue Cross Blue Shield of Vermont

I've worked at a non-profit, public access TV station for 11 years covering 3 rural towns. All 3 employees are part-time, and only the Dir. gets health insurance. I have never qualified due to being offered only 60% of FT. We get a 3% COL raise each year. My state insurance was $60/year, then $120, then $140; now $171. [redacted] Quickest way to become bankrupt is due to a lack of, or high-deductable, or no health insurance at all. They are slowly pricing me out, but I don't qualify for Medicaid. Trying to figure out next what to give up in order to afford $27 more per month if this goes through. Probably my landline....

501. Laura, Montpelier
I get my insurance from: Employer (self or household member)
My insurance company is: Blue Cross Blue Shield of Vermont

Find another solution to your out of control cost like, oh, I don't know look at executive compensation for starters. It's outrageous that providers continue to price people out of health care in the richest country in the world. Instead I raising rates, trim the fat and start supporting Medicare for all. At some point the protest will come to your door. The American people cannot continue to absorb the costs so that greedy executives and oligarchs can continue to enrich themselves.

502. Dana Kaplan, Burlington
I get my insurance from: Employer (self or household member)
My insurance company is: Blue Cross Blue Shield of Vermont

Providing premium health care to our hard-working staff is of utmost important to Outright Vermont. As an organization dedicated to ensuring LGBTQ+ youth thrive, our staff must role model healthy behaviors. We know that LGBTQ+ people are at higher risk for health disparities, and as such, we pay for the premium package, so that our most valuable asset - the team - gets the care they need to in turn serve Vermonts' youth. A 15.6% increase would cost us an additional $10,000 per year - which is significant for a small non-profit. I urge you to think about the impact that this proposed increase would have, and the compromised position it forces many organizations to navigate with regards to the level of care we provide our staff.

503. Dale Hackett

well the obvious comment is both rate requests are not really affordable, sustainable, but more important, the trend is not sustainable... my comment may of seemed extreme,,, but the point i was trying to make i don't think was an exaggeration. healthcare is not just about what our present population can afford, it is a trend of cost passed on to our children.. therefore the comment has validity, do you want to save bcbs, mvp, and give up our children who will need to move out of state, or

do we say no to the requests, trend, and seek ways to make vt affordable , for us and our children so they have the choice to live in vt if they wish to? did you notice a difference in their attitude this year? they were wearing their sentiments on their sleeve, there definition of affordability, it was a definition of selfishness. granted these were rate hearings. but the number of times they repeated with ease , that definition of affordability was that they remain sustainable. just them, no one else.. weird, i could almost say they were experience that feeling of lack of affordability they have been dumping on us for so many years, and downplaying how devastating that scenario is to consumers. yet I've seen consumers in that same situation with more empathy than they were showing. i do question if they hyped some of their claims in the analytics... especially as to risk assessment. i do not trust this year they were truthful as to their cost... but then again what they were obsessed with was solvency.. there spooked buy coy as to the reasons why. it is true , i believe some companies, think tanks i worked for, would be all over this situation for the oppurtunities that exist. so why the stagnation? actually its inertia,, as i referred to during sims, the real problem down the road, would actually be institutional inertia... the analytics have screamed change needed a very very very long time.. my guess would be, these companies, the system has set themselves up in silos that have so many regulations in them, by default they are the only players in the game... but they lost control of the game and are about to becomes victims of the very game they created. unfortunately they will take us with them, how much pain they inflict on us depends on our courage to respond to the challenge, and our perception of what is of value. it could be true that more people would of dropped healthcare by now but the reality is, its as precious as the food we eat... then again so isn't housing and look how complacent society is now in accepting homelessness? the question not asked is, how many did manage to keep healthcare, but what is it they sacrificed to do so because it wasn't affordable,.. but we do not measure really, what people do to pay for healthcare? we measure really only , do they have it, don't have it, are they under insured, not what they sacrificed. OPINION, I COULD NOT HELP BUT HAVE THE THOUGHT AT TIMES THAT DUE TO BOTH COMPANIES ATTITUDE AT VERY LEAST DROP MVP, BUT GET RID OF BCBS TO, COMPANIES WITH THAT ATTITUDE THEY SHOWED, ARE HURTING THEMSELVES AND GOING TO TAKE WITH THEM EVERYONE THEY CAN.. to you i ask the question, could the above be true? could the brat be a healthcare company that developed a very bad attitude? none the less validity to the fact solvency is an important issue, and just as important attitudes presented in how this problem gets solved. more to point without the right attitude, its not a solvable problem? the testimony at public hearing, "hear we are again a year later" and while the stories are different, they are not really that different as to what they all have in common? that same system asking for rate increases, is not functional!!!!!!! or maybe it is, consider, and this won't be pleasant, lets go back to 2001, classic story with healthcare insurance was, if you get sick you lose coverage from exclusions. we all knew why? they sold insurance and severely limited their risk they were responsible fore... anyone with a disability, you just didn't have healthcare most of the time. and easily had unpaid bills... and could not get insurance without paying, unaffordable premiums. fast forward, is it possible healthcare companies recreated the exclusion but did so through general cost to everyone? what happens next is a sqeeze play, they force you, or us, legislature, to create again the exclusions. ???? i think i can see the writing on the wall where this could happen.. pharmacy didn't exactly create exclusions, more like we will enslave you then blackmail your life, pay us for these drugs no matter how it affects you , if it kills the person they don't want to know, if it means they can't eat, they don't want to know that.. pharm is even milking the health insurance companies???? the hospitals? etc. but in the end, its us that suffer.. of course if you make enough money, none of this is real to you? there are plenty of people that just don't seem to react as if none of this is a problem?

if the problem is as severe as is suggested, where is everyone when its time to attend public hearings, meetings, etc.. ???????? do most of them write comments? like i said, you can't take this to the state house and get minimum wage increased by that much in one year.. you can't use a wider distribution of cost through taxes to cover cost increases of double digit every year? its a tough sell to see if Vermonters want to pay for healthcare with distributed costs, they will not want to pay to save bcbs or mvp. will they want to pay to increase subsidies, but cut medicaid services, oh yes in the end its a squeeze play, like in the move wargames,,, as professor Falken says, i could never get joshua to understand futility. we press on, seeking better solutions,, i simply don't believe savings mvp and bcbs with these premium rate increases, really will work.. but you have far more info to know what is really happening than i do, i hope you have something that shows a more hopeful picture than i have watched be painted.

504. Kathleen Hart, Montpelier
I get my insurance from: Employer (self or household member)
My insurance company is: Cigna

I firmly reject the proposed increase on insurance rates for Blue Cross Blue Shield of Vermont and MVP. At a time when the public conversation is focused on affordability of healthcare or more to the point, the UNaffordability of healthcare in the United States, the proposal of a rate increase is particularly heinous. Already too many of Vermonters are struggling to meet their healthcare costs or are going into debt because of their health. In my own family we are greatly restricted in choices of employment, housing and general quality of life because of healthcare costs. I am not a customer of Blue Cross Blue Shield of Vermont or MVP, however I know many people who are, and there are a great deal of employers in the area who offer benefits through these companies. Already these companies are struggling to provide their employees with valuable benefits at a cost that does not create hardship. These costs will create great hardship for small employers all around Vermont. I urge the State to reject the proposed increases.

505. Dirk Peter Luyckx, Montpelier
I get my insurance from: Employer (self or household member)
My insurance company is: Blue Cross Blue Shield of Vermont

In countries with universal healthcare, our contribution to the system is a tax. Here, with our private system, it's called a "premium," "fee," or "price", which doesn't seem quite right when you're paying more than $20,000 a year without subsidy just for the premium (not including the deductible). It's more like a tax, one that is much larger than property taxes in Montpelier. These exorbitant health plan taxes are what's killing people who are working for themselves (and people who are for some other reason have to buy an individual or exchange plan). Now Blue Cross Blue Shield is asking permission to hike up our health insurance tax even more, by an average of 15%, which can add another 3 grand or so to our current outlay. (Our family of three pays $21,000 just for the privilege of having coverage. Blue Cross doesn't pay a dime towards our healthcare expenses until we hit our deductible.) We are among the many people in Vermont trying to make a living off our wits and multiple gigs and small businesses, and would be hit hard by this tax hike ("price increase"). Sure, there are business justifications. But when we do the math and our budgets, we see that our income isn't increasing at the same rates. Something doesn't add up. We're already paying close to $30,000 a year for health care. That's quite a share of our income as freelance writers who make just too much to qualify for a subsidy. Adding another $3,000 makes this an ever greater burden. I strongly urge you to completely reject these price hikes that will hit self-employed Vermonters hard. Putting a disproportionate burden on people who

happen to be in a smaller (generally less-healthy) pool of insureds is not fair and unsustainable. Where will it stop? When we pay $40,000 a year? $50,000? The actuaries who ask for these increases also know this: When costs skyrocket, many people drop their plans altogether, putting them at risk in terms of their health and finances, especially in the individual market where there are no subsidies. That also means an even smaller risk pool that will lead them to ask for more increases in the future. This has to stop. Another way has to be found to spread the risk and healthcare costs more fairly.

506. Pamela Cowan, Williston
I get my insurance from: Employer (self or household member)
My insurance company is: Blue Cross Blue Shield of Vermont

The rate of increase of healthcare is so far and above the cost of living, this is ludicrous. Healthcare providers in Vermont operate as though they have competition, but are really a monopoly. The cost of services at UVM Healthcare are so out of proportion to the service being offered that it's ridiculous. The consumer is powerless to do anything to stop this. I can cite many signs that this is the case. Why can't Green Mountain Care Board see this? Example #1: UVM Healthcare offers spouses a voucher for lunch when someone is undergoing a procedure. This must come at a cost to all of us. Example #2: When provided any other service that we must pay for, we have to sign for it in order to create a legal requirement to pay for it. If healthcare providers were required to present to consumers the cost of services at the time they were rendered, industry spending would be more controlled and less billing errors would happen. I have had hundreds of dollars of items incorrectly billed removed from my bill that my insurance company didn't and couldn't have recognized as errors. These would be caught at the time of rendered services if we all had to sign for our services.

507. Erica Walch, Newfane
I get my insurance from: Vermont Health Connect
My insurance company is: MVP

I'm really disappointed to hear this. I currently work one part-time job that doesn't offer health insurance and I also work as a consultant (self-employed). I *had* two part-time jobs that didn't offer health insurance but when I got my MVP re-cert pricing, it went up from $120 per month to over $600 per month. I quit one of my jobs and became a consultant, because I could not afford this increase. My monthly payment is affordable now, but I consider the rates a disincentive to working for people who put together a job out of various gigs. If it goes up again, I may just stop having health insurance. I never go to the doctor, but I'm getting older and I want to have health insurance "just in case", but the cost is getting to be too much..

508. Rod Sanborn
Hi I’m grateful for my health insurance as a retired state employee [redacted] A sizeable increase in insurance premiums will be detrimental to my health Please reconsider and keep insurance costs down as much as possible

509. Lauren, Colchester
I get my insurance from: probably will buy through Vermont Health Connect, as finding a job that offers insurance has been hard.
My insurance company is: BCBS of Indiana...under my fathers insurance, I will age out this coming Feb. After that, I will be uninsured.

Health insurance is ALREADY UNAFFORDABLE FOR AN ENORMOUS AMOUNT OF PEOPLE. Myself and most of my (local) friends and family included. Raising healthcare insurance premiums is an abomination and gross mis-use of power that runs on the illusion of scarcity. It is immoral to do so. It benefits the wealthy--insurance companies/execs--and condemns the rest of us. If you are indeed a Green Mountain Care Board that CARES, choose to put people before profit. We, the people, can't afford an increase, it would put even more lives at even greater risk. In fact, a decrease is urgently needed. THAT SHOULD BE REASON ENOUGH. I do not know how I am going to afford health insurance come next year, when I can no longer be insured under my father's work health insurance.

510. Lorrie Fundis, Bristol
I get my insurance from: Vermont Health Connect
My insurance company is: MVP

Insurance cost is a costly struggle monthly. I pay 250.00 a month now, I can’t afford an increase i won’t be able to pay my heat for my home this coming winter.

511. Jen Peterson, Waitsfield
I get my insurance from: Employer (self or household member)
My insurance company is: Blue Cross Blue Shield of Vermont

Even with good coverage, the increase would create a hardship on our family of 5.

512. Emily Tompkins, Burlington
I get my insurance from: Vermont Health Connect
My insurance company is: MVP

This makes it very difficult to afford healthcare as well as the cost of living. I've already talked to several people who pay the fine instead of having healthcare because they can't afford a plan. Please don't put more people in this situation. Another result is that people will work less in order to qualify for medicaid and I don't think that this is a trend that will benefit our communitites.

513. Mary Becker, Bennington
I get my insurance from: Vermont Health Connect
My insurance company is: Blue Cross Blue Shield of Vermont

I will have to quit my job because 2/3 of my pay now goes towards my insurance payment! Now I understand that there is no longer "middle class" citizens. ...I CAN'T AFFORD INSURANCE..PLEASE DON'T INCREASE. Mine goes up every year..Now I see why people move to Canada and other countries with universal health care....All this increase means is the higher up company employees are getting raises off of us now "low income" people!

514. Gloria DeSousa, Burlington
I get my insurance from: Vermont Health Connect
My insurance company is: Blue Cross Blue Shield of Vermont

I thought ObamaCare was suppose to control the insurance companies!! I can not continue to put up with more premium increases. I think what I pay now is exorbitant. Please put the focus on where the money is going - executive salaries?? I probably would cut back on insurance coverage in order to meet the new premiums just to make the monthly payment.

515. Meg Hourihan, Warren
I get my insurance from: Direct from BCBSVT
My insurance company is: Blue Cross Blue Shield of Vermont

Premiums are already incredibly high for individual coverage. I don't get insurance through an employer and pay to cover myself and my kids. Over 15% increase?! That's insane. They've been increasing prices every year and it's not possible for people to afford premiums at this rate, esp those who have incomes that don't allow for discounted policies through exchanges. An untenable situation is just getting worse. Please do not allow a raise this high. Even 5% would be a lot, given how high my premiums already are! Thank you.

516. Judith, Morristown
I get my insurance from: Employer (self or household member)
My insurance company is: Blue Cross Blue Shield of Vermont

The cost of medical care, even with insurance, is prohibiting me from accessing health care I probably need right now; an increase in premiums would further limit that. Despite the fact that I have employer-provided insurance and pay a premium, I STILL cannot afford to go to the doctor. What possible rationale can BCBS have for increasing premiums except that the health care system is so badly broken no one knows where to start to fix it except to limit the number of people who can actually access health care by increasing premiums to the point where no one can afford to pay the premium and seek needed medical care?

517. Mark Walker, Morrisville
I get my insurance from: Employer (self or household member)
My insurance company is: MVP

I think it is just another scam for more money?

518. Benjamin Beatty-Owens, Burlington
I get my insurance from: Employer (self or household member)
My insurance company is: Blue Cross Blue Shield of Vermont

We need to stick to the inflation increase this year, as healthcare is already outrageously high here. Every time there is an increase significantly above inflation, it is evidence that BCBS can't handle healthcare and, or the role it fills in this state. This continuous increase is evidence that we need a public option/ universal healthcare.

519. Alison
I get my insurance from: Employer (self or household member)
My insurance company is: Blue Cross Blue Shield of Vermont
Health care costs continue to go up annually. It makes it more and more difficult to afford.

520. David Wilkens, Stowe
I get my insurance from: Direct from BCBS
My insurance company is: Blue Cross Blue Shield of Vermont
What a rip off! In 2019 I will pay > $17,000 per year for a high deductible health insurance product from BCBS for a family of four. One consolation: it does allow me to use an HSA to which I religiously deposit the maximum amount allowable. Thankfully, I can afford to pay for this coverage and maximize my HSA, but I pity the family who is saddled with such ridiculous costs for not much in return. Perhaps when one of my family members gets hit by a bus, needs a lung transplant or gets cancer I will be thankful. Then again I won't know what BCBS covers until it happens. I'll keep my fingers crossed. Despite the universal contempt citizens of all political creeds have for the economic rents charged by healthcare and insurance companies, it seems like a problem no elected official has the cajones to tackle. Chuh-ching!

521. Stephanie, Stowe
I get my insurance from: Vermont Health Connect
My insurance company is: Blue Cross Blue Shield of Vermont
These price hikes would be a complete robbery of Vermonters. These increases would make some monthly premiums more than people's monthly income. It's ridiculous to pay this much for plans that don't even cover basic things like dental or eye care. Why are we paying insane amounts for plans that seem only cover very specific items? I would have to drop my insurance if this increase happens, as I'm sure many Vermonters will also have to do.

522. Selina Rooney, Morrisville
I get my insurance from: Vermont Health Connect
My insurance company is: Blue Cross Blue Shield of Vermont
That rate of increase is ridiculously high. That should not even be considered!

523. Margaret Morin, Tinmouth
I get my insurance from: Employer (self or household member)
My insurance company is: Blue Cross Blue Shield of Vermont
I am desperately hoping that BCBSVT is not allowed to again raise their premiums for supplemental insurance for those on medicare like myself. They have asked for a raise almost every year during the many years I have been a customer, and it is a real financial hardship on senior Vermonters - those of us who are enrolled in the less than top coverage option are paying more and more, and getting less and less coverage at the age when our incomes are lower, cost of living is higher, and we are more vulnerable to medical problems. I am grateful for the opportunity to plead my case.

524. Lori Biamonte, Jeffersonville
I get my insurance from: Employer (self or household member)
My insurance company is: Blue Cross Blue Shield of Vermont

I am currently working two jobs and currently work 60 hours per week in order to afford and be provided with the opportunity to have insurance for myself and my family. I'm increase of that magnitude will trickle right back to me and make an already tough situation become mission impossible. Medicare for All. Increases paid to insurance companies just feed a really broken system and basically prolong the agony. Medicare for All. Invest in the people please and not the corporate entities.

525. Lisa Senecal, Stowe
I get my insurance from: I purchase my insurance directly from BCBS
My insurance company is: Blue Cross Blue Shield of Vermont

These price increases are unsustainable. As a single mother of two, I pay more than $1000 a month for health insurance. This year, [redacted] If my family has no additional health costs for the remainder of 2019, [redacted] we will be at a minimum of $20,000 for healthcare for a healthy family of three in one year. Next year, with a 15% increase in premiums, that would be $21,800. Our health care system is beyond broken and it is breaking the financial backs of Vermonters and Vermont employers.

526. Monica Bailey, Bridport
I get my insurance from: Vermont Health Connect
My insurance company is: Blue Cross Blue Shield of Vermont

Insurance is already forced, with the threat of penalties. It's expensive enough for the value of what we pay for.

527. Concerned Vermonter
I get my insurance from: Vermont Health Connect
My insurance company is: Blue Cross Blue Shield of Vermont

Please no, I already can't afford it between my premiums and $4100 deductible. My take home pay keeps going down every year because of it and it's getting harder to make ends meet. Enough is enough!

528. Wendy Harlin, Ripton
I get my insurance from: Vermont Health Connect
My insurance company is: Blue Cross Blue Shield of Vermont

As a self-employed family, our insurance is already a big part of our budget (even one of the "budget" plans offered.) An increase of almost 16% is likely to be untenable for us. Please reconsider this huge increase. Thank you.

529. Suzanne McCoy, Hinesburg
I get my insurance from: direct from mvp
My insurance company is: MVP

Unbelievable, unfair, insane. How about addressing the issue of the broken health care system in the US? Premiums are outrageously high. Coverage is questionable and difficult. Copays, deductibles. We need a solution, not higher rates!

530. Erin Ryan, Worcester
I get my insurance from: Vermont Health Connect
My insurance company is: MVP

Allowing these companies to raise the price even more will mean people like me are further underinsured and will not seek health care. Already I have a 6,000 deductible and because of this I have not used my insurance or seen a doctor for 3 years.

531. Erika L Dodge, Morristown

I attended the public forum but neglected to mention a few items. I am a self-employed architect and my husband a self-employed builder. The rising costs of living in Vermont are going to push us out of this state. It is CRIMINAL that BCBSVT and MVP would consider a rate hike when we already pay SO much. It's incomprehensible that as a family of three, we currently pay $19,092 a year in health insurance premiums with a $8,250 deductible. We pay so much money each month, and yet we still get a $336 bill for when [redacted] and misses daycare for the week (another $325…and I didn't get to work that week because I was home tending to a sick baby). Tell me, what are we even paying for? The chance that God forbid we get terminally ill or in a car accident? Our healthcare costs are already 28% of our net income for a HIGHLY inadequate plan (assuming we have a profitable year in business). We are hardworking individuals who do not qualify for any subsidies but live paycheck to paycheck after healthcare, daycare, mortgage payments, and taxes. We CANNOT afford any increase. If you increase the rates, families like ours will be forced to leave this state. My husband suggests we go without health insurance, but I have a sickening feeling living without since we have a one-year old daughter. This should NOT even be a topic of conversation in our household. We need more competition in the healthcare industry. Why does Vermont only have two options for providers? They can charge whatever they want, and we have NO option but to pay a ridiculous premium or go without coverage. It is incredibly frustrating for entrepreneurs like us that feel helpless. We shouldn't even be having the conversation of raising rates, we should be looking for ways to lower the current rates. Corporate greed in the insurance companies is taking over and we need to put an end to this. I urge you to consider young, hardworking families like ours because the future of this state depends on it.

532. Deborah Boocock, Richford
I get my insurance from: Military / Government
My insurance company is: Tricare for now.

This is ridiculous. You're looking at a rural state where most people make minimum wage, have to drive long distances to work, pay high taxes so the nonworking can have health care for nothing. The increase will probably mean someone will have to choose to go without. Aren't Vermonters paying enough already?

533. Pamela Fournier, Braintree
I get my insurance from: Employer (self or household member)
My insurance company is: Blue Cross Blue Shield of Vermont

Increasing my health insurance premiums will greatly affect my bottom line, my quality of life. I feel like I am working so hard and barely make ends meet to pay all that I need to keep my home and my health.

534. Laurie Childers, Addison
I get my insurance from: Employer (self or household member)
My insurance company is: MVP

How many years will this double digit increase continue? When is something going to stop this insane inflation happening in our healthcare system? We have fewer people insured and it continues to be insanely expensive to keep insurance. And the care we are receiving is no better than 20 years ago when this trend started and yet we pay more.

535. Lewis H Dodge IV, Morristown

My family cannot afford our current healthcare premiums as they are. If cost increase we will be forced to live without health insurance. I urge the board to consider families like mine when deciding about healthcare costs. If anything we should be looking for ways to reduce the burden on hardworking, middle class, Vermont families.

536. Alice Silverman, Montpelier
I get my insurance from: I buy through BCBS directly
My insurance company is: Medicare with BCBS as secondary

I am a self employed physician and am strongly opposed to the rate hike. Our system of premiums is regressive and places the most severe financial burden on those with the least financial resources. This makes no sense and under the present system there are absolutely no cost controls. Health care is a public good like roads and libraries and there is no need for the middle man insurance industry that is wasteful. I am happy to pay my fair share through taxes for a program that includes everyone and therefore is excellent. I am happy to pay more because I can afford it. I also want my less affluent friends, neighbors, patients and others to be able to have peace of mind knowing they are insured as well. The only sane approach is a single payer medicare for all and not endless insurance company rate increases which amount to a regressive tax. IT is time to fix this.

537. Ashley Anne Strobridge, Montpelier
I get my insurance from: Parent
My insurance company is: Federal Blue Cross Blue Shield

Soon I may be an employee of the State of Vermont, which utilizes Blue Cross Blue Shield of Vermont, so that would be my health care company if I get this job. However, the job doesn't pay very much, and I have a disability and so need to work part time. I can barely afford my rent and bills as it is, and that's without having to pay for health insurance because my mom pays currently. I am on food stamps as it is. So if this rate hike goes through, on top of having to pay for insurance for the first time, I will have to pay even more? This is ridiculous! If I got this job and it turned into something with benefits, I'd still need to apply for Medicare to be able to afford health insurance, and at that point I may not qualify...I'd be stuck in limbo between being too poor to afford health insurance and too privileged to

qualify for aid! [redacted] Murder by state. It's not on! I say NO to this rate hike!

538. Sara Lourie, Cambridge
I get my insurance from: Vermont Health Connect
My insurance company is: Blue Cross Blue Shield of Vermont

Health care should be a universal right, not something that only the rich can afford. A >15% increase in premiums is likely to push many people to a point that they are unable to afford insurance. No job offers that kind of income increase, and many people are struggling as it is. This is only going to increase the struggles, and increase the deleterious health effects of financial insecurity. Please reconsider this huge increase.

539. Tammy Monk, Montpelier
I get my insurance from: Employer (self or household member)
My insurance company is: MVP

It is extremely unfortunate for everyone EXCEPT BCBS of VT and MVP executives. The price of health insurance is already astronomical for most Americans and if prices went up by 11 and 15.6 percent just who is this benefitting except the executives of BCBS and MVP. The price increase most certainly would not provide greater coverage for Vermonters.

540. Margaret Laughlin, Williston
I get my insurance from: Private. It is my medicare supplemental insurance.
My insurance company is: Blue Cross Blue Shield of Vermont

Not sure if this will affect retirees who purchase their medicare supplemental insurance through BCBS of VT, but it will be a huge hit for those of us on a fixed income.

541. Alexander Katz, Fairfax
I get my insurance from: Vermont Health Connect
My insurance company is: Blue Cross Blue Shield of Vermont

I will be switching to Medicare before the price increase takes place (I am turning 65 before the end of the year). I'm glad to miss out on the increase.

542. Rainwalker, Vergennes
My insurance company is: I don't have health insurance.

Why are the prices increasing? But more importantly, why don't more people talk about actual health when they are speaking about health care, health insurance, and medical payments?! I do not want any drug users in my insurance pools unless those people are on a three month timeline to quit. This means we need to have a revolution, for instance, in understanding how to stop the Attention Deficit crowd from uselessly trying to self medicate with marijuana and cigarettes. I sometimes am happy to give away my disposable income to benefit others, but please don't let sloppy liberals with no standards or spine take away our disposable income only to waste it ineffectively on unhealed and unrepentant drug users. I know personally people who are supposedly too poor to pay for their medical care, but they still find money for drugs, and they still get care even while continue to use drugs which destroy health. That's unacceptable and wrong, and we need better enforcement and higher standards.

543. John B, Montpelier
I get my insurance from: Employer (self or household member)
My insurance company is: Blue Cross Blue Shield of Vermont
that increase doesnt make as much sense when it will be hurting the little guy more. they can increase but tie it to cost of living adjustment or something as that is 4-5 times more than that.

544. Anne MacLeod, Winooski
I get my insurance from: Vermont Health Connect
My insurance company is: Blue Cross Blue Shield of Vermont
This is an unconscionable proposal. My budget is already stretched thin to pay for my health insurance. Prices need to go down, not up.

545. Patrick Kearney, Shelburne
I get my insurance from: Employer (self or household member)
My insurance company is: Blue Cross Blue Shield of Vermont
A profound disgrace. BCBS has kept reimbursement rates to Independent Providers stagnant while they continue to siphon off money from the Public. Our Governor is completely blind or doesn't care as to what is going here. We need to rid ourselves of BCBS and open the doors to outside competition.

546. Fred, Northfield
I get my insurance from:
My insurance company is: I don't have health insurance.
I'd say health care / insurance has learned a lot from state government with failed policies and bloated workforce. "Free" healthcare to illegals, and we pay through the nose for THEM, yet we're strapped with 500 - 1500 a month premiums, and half a years salary in "deductibles". State will "ok" it, because they're in bed together, so bend over, me, I can't afford two mortgages, the one we have is enough, and frankly, I rather rot than pay thieves

547. Ken Brown, Montpelier
I get my insurance from: Employer (self or household member)
My insurance company is: Blue Cross Blue Shield of Vermont
This has got to stop. Year after year increases at much higher than the rate of inflation. My income is only going up 1.5% in the same timeframe.

548. Jenn D., Montpelier
I get my insurance from: Employer (self or household member)
My insurance company is: Blue Cross Blue Shield of Vermont
Have you looked at Ohio? Their auditor went after the PBMs when they found out they were pocketing $224 million! Transparency is key!

549. JoAnne Ring, Hyde Park
I get my insurance from: Direct through BCBS
My insurance company is: Blue Cross Blue Shield of Vermont
The prices are too high already. A price increase will mean more people who cannot afford health insurance. Just for the silver plan... my family pays over $1600 per month. That is more than my mortgage and taxes. Outrageous.

550. Jen, Arlington
I get my insurance from: Employer (self or household member)
My insurance company is: Blue Cross Blue Shield of Vermont
Please, I beg you, do not raise the cost of health insurance! People are already suffering and barely able to afford to get medical treatment/medicine. Put people over profit.

551. Rob Willis, Jamaica
I get my insurance from: Vermont Health Connect
My insurance company is: Blue Cross Blue Shield of Vermont
I believe that a any increase should be based on my increase in salary with as of now is 0%.

552. Cheryl Grandfield, Middlesex
I get my insurance from: Employer (self or household member)
My insurance company is: Blue Cross Blue Shield of Vermont
They do not need an increase. I have a $5000.00 deductible. My employer pays 50% so I have a huge premium and owe medical bill so there is no more money to pay bills. BCBS processed my claims wrong on the wrong benefit plan and a flexible spending account- they reversed claims and. Payments on my plan in both myself and my husband that messed Up the flexible account restacking those cost and I have no clue and looking at a big mess And somehow my out of pocket increased And I could not make sense and neither could the hospital—it is still a mess! If they can make that big of mess on me - I can't imagine what they did to others so maybe don't mis manage what they have and they won't need an increase!!

553. Cindy Herrmann, Sunderland
My insurance company is: I don't have health insurance.
It is ridiculous!

554. Lisa Maynes, Colchester
I get my insurance from: Employer (self or household member)
My insurance company is: Blue Cross Blue Shield of Vermont
Though I get my insurance through a generous employer plan, [redacted] - the cost is a huge factor already. This year I tried something different and went with a high deductible plan for the lower premium cost. I've struggled to pay the nearly $1,000 out of pocket expenses in addition to the monthly premium out of my pay check. In fact - I didn't go to the doctor on at least three occasions when I thought I should because of the cost. If it's more I could easily see myself not going at all, even though I know that this has a high liklihood of causing bigger expenses in the future if something gets worse. Frankly, many of us are busy living day to day and week to week in survival mode. It's difficult to think long term, and easier to "gamble" even when we don't want to be having to make that choice.

555. Coleen Kearon, Montpelier
I get my insurance from: Employer (self or household member)
My insurance company is: Blue Cross Blue Shield of Vermont

Insurance companies are making record profits and gauging employers and consumers with their constant premium hikes. We should have a decrease in premiums, not a another increase, with poorer services offered. My bills are the polar opposite of what they used to be, with BCBS paying $10.86 and me paying $220. Come on now.

556. Francine Levine, Montpelier
I get my insurance from: Employer (self or household member)
My insurance company is: Blue Cross Blue Shield of Vermont

Health care is very expensive for retirees getting Medicare but also paying for BC/BS. For families and younger workers, the high taxes and other costs make it increasingly difficult to stay in Vermont.

557. Cindy, Brattleboro
I get my insurance from: Employer (self or household member)
My insurance company is: Blue Cross Blue Shield of Vermont

WHY does the cost of health care keep falling on the insured and the employers? WHY do the CEO's etc need to make so much money per year? WHY do we need PMP's? WHAT do they do for us for the amount of money that they make off of Vermonters? Vermont is one of the highest costing states to live in and gets more expensive daily - to raise the rates for health care is certainly not going to entice new residence to come or current residence to stay.

558. Laura Macieira

To Whom It May Concern, Health care rates should not be controlled by health insurance companies. Health care (primary and preventive) is a human right; people and employers should not pay the monthly rates that all insurance companies are currently charging. The increase proposed from BCBS will affect the employers and public negatively because the existent rates are already outrageous. Even though the health care industry and insurance companies employ a lot of people, the increase of jobs cannot be justified on charging people for a basic human right of receiving primary and preventive health care. My challenge for the people in charge would be to study what Scandinavian countries do with their health care system and re-invent and health care system that provides for the basic health needs (primary and preventive) of Vermonters and Americans. It seems to me that insurance companies dictate what a person's health needs are, instead of allowing the individual to decide what is best for its own health. The cost of deductibles have been increasing these past couple of years and the prices keep going up. The minimum wage isn't increasing to 18%, nor regular salaries, so why an insurance company should be allowed to increase their rates?

559. Stuart Hurd

I am a municipal manager. Our employee group is enrolled in a BCBS plan on the health exchange. I find it untenable that BCBS would seek such an increase. We are all aware of the importance health care plays in our lives. In some cases, it is the single most important benefit an individual or a family has. Most municipalities have moved to the high deductible plans to keep costs reasonable for taxpayers. Now we face a double-digit increase in that cost after our budgets are set for the coming fiscal year FY2020. I encourage the Board to use care in its deliberations. We hear talk of drug price

control legislation coming from Washington. And while that may be a pipe dream, it would certainly address the reasons for this proposed increase. Thank you for your time.

560. Dr. Vernon R Temple, Bellows Falls, Vermont

MVP has continued to raise rates while failing to increase reimbursement to chiropractic physicians even for more than 5 years. They will not even discuss reasonable cost of service increases. They will not negotiate with their providers and fail to even respond to multiple written communications. The decision to leave the carrier will only be detrimental to my patients.
With one of the solutions to the opioid crisis being utilizing conservative care, we have seen a large increase in MD referrals, at a rate that would be unsustainable if not for the fairer practices of other carriers. Please discuss this with them. Conservative chiropractic care is more cost effective and efficient and ends up saving health care dollars, but only if that care remains available to the citizens of Vermont. Thank you

561. Therese Mageau, Montpelier
I get my insurance from: Self
My insurance company is: Blue Cross Blue Shield of Vermont

I am one of the lucky few who can weather a rate increase (although if they keep happening at this rate my ability to absorb the increases may change). I write on behalf of my neighbors and friends who are getting crushed by these annual, and not insignificant, increases. What does it take for someone to see the obvious truth that health insurance is becoming unaffordable? And soon people will just stop having insurance? And what will that do to health care costs and conditions in this state? I don't know what the answer is to the state's rising health care costs, but the answer isn't raising rates on the people, yet again. Especially as the service of BCBS leaves something to be desired. I have been dealing for two months with a "known defect" in the BCBS system that has potentially cost me many dollars. The frustration I have had working with the BCBS system is maddening. And I am retired, college educated and not ill. I can't even imagine how someone who is working, dealing with health issues, and unaccustomed to reading complicated -- and incorrect --health insurance statements could handle this. Or feel like they are getting their money's worth. And BCBS wants to raise rates?

562. Holly Killary, Salisbury, VT
I get my insurance from: Vermont Health Connect
My insurance company is: Blue Cross Blue Shield of Vermont

The idea of a 15% increase causes great anxiety and frustration. My husband and I are self-employed and we pay almost $1300 per month for our 2 person policy with a high deductible. We have faced ongoing increases for years and the only end in sight is when we hit the age for Medicare. It's disgusting that one has to look forward to aging in order to save money on health coverage only to likely spend more is medical bills as the body ages. I would really like to see our premiums drop or stay stagnant.

563. Janice A. Nicklas, Ph.D., Associate Professor of Pediatrics, retired, University of Vermont

I have just heard that BCBS has asked for a 15.6% premium increase. This is just way too high compared to the cost of living increase (2.8% for 2019). These high rate increases are just not sustainable. Since a lot of what BCBS pays out must be to the University Hospital and the hospital seems to have a large surplus every year, perhaps BCBS should negotiate better with hospital to keep rates down.

564. Stephen Moyer, Plymouth
I get my insurance from: Employer (self or household member)
My insurance company is: MVP

Many of the employees in our business are already under extreme financial pressure due in part, at least, to rising health care costs. Hefty premiums and then still confronted with high out-of-pocket expense potential. All we are getting is major medical insurance. The insurance companies answer seems to be place the burden on the insured rather than work to address what is driving the cost of care sky high.

565. Robert Pittala, Westford
I get my insurance from: Employer (self or household member)
My insurance company is: Blue Cross Blue Shield of Vermont

Universal health care

566. Deborah Hryckiewicz, Cavendish
I get my insurance from: Employer (self or household member)
My insurance company is: CBA Blue

It sickens me that insurance companies want to increase their rates 11-16%. I am sure most of the people you insure will not be getting a 11-16% raise in their paychecks next year. Some people even had to take a 4-10% decrease in their paychecks this year.

567. Michael T Charter, Jericho
I get my insurance from: Employer (self or household member)
My insurance company is: Blue Cross Blue Shield of Vermont

Do not allow this increase. We can not afford double digit increases. Instead of this we need to combat increasing costs.

568. Ann, Underhill
I get my insurance from:
My insurance company is: I don't have health insurance.

Are you out of your minds?

569. Magan, Orange
I get my insurance from: Employer (self or household member)
My insurance company is: Bcbs of ma

People are struggling now with current prices. A 11%-15% is going to make those working families struggle more. I know our incomes aren’t going up 11%.

570. Ken Parrot, West Windsor
I get my insurance from: Self
My insurance company is: Medicare

Premiums are high enough. I'm thinking of dropping my supplemental BCBS policy due to the current pricing.

571. Brenda Warman, Burlington
I get my insurance from: Vermont Health Connect
My insurance company is: Green Mountain Care

I ask the board of Green Mountain Care to reject the proposed premium increases on health insurance plans offered through Vermont Health Connect. An increase in premium costs will make healthcare even more inaccessible for many low-income vermonters, who already struggle to afford the ever-increasing cost of living while our wages remain stagnant. It is unjust for insurance companies to continue to raise premiums to cover their own costs and increase profits, while executives of these companies take home millions of dollars every year. Please take a stand against the greed of the for-profit healthcare industry, and ensure that Vermonters continue to have equitable access to healthcare, a basic human right.

572. Elizabeth Dodge, Pawlet
I get my insurance from: BCBS as s Medicare suoplement
My insurance company is: Blue Cross Blue Shield of Vermont

15% far exceeds cost of living or increase in doctors or other medical charges, and is therefore totally unreasonable. Seniors are still left with vision and dental bills to pay which is excluded from medical coverage. Prescription drugs are increasing but again not covered by BCBS as a supplement to Medicare. There is no actual cost basis for this extremely high raise other than profit motive for BCBS. Increased participation should spread insurance based risk. This raise will decrease participation which is counter to public good.

573. Lisa Daudon, Starksboro
I get my insurance from: Directly through BCBS as single person business. Health connect kept not forwarding our payments in time.
My insurance company is: Blue Cross Blue Shield of Vermont

My husband is self employed and I don’t get benefits at my job. Our rates and deductibles are already very high. It is a hardship on those of us who don’t get coverage through an employer and it is ridiculous that the Green Mountain Care Board keeps allowing the insurance companies to raise rates as often as they do when rates are already so high for individuals and small businesses. I don’t know anyone who has ever gotten a 15% raise. How can individuals keep up with that? It would be much better for so many people if the insurance companies made their process more efficient and focused more on helping people than trying to make big profits. Not only does it make it more complicated for individuals but we end up being charged more by medical providers who have to hire extra staff just to deal with insurance issues. I hope you will take care of the citizens of Vermont rather than bowing to the pressure from insurance companies. Please help contain medical costs by denying this request.

574. Shawna Brule, Marshfield
I get my insurance from: Employer (self or household member)
My insurance company is: MVP

My husband and I both work full-time as a Systems Administrator and a Senior Designer. We're both lucky enough to have a portion of our premiums paid for by our employers. That said, substantial raise to our premiums would take what little we have left in our pocket. Also, with child care being unaffordable to the point where we can't have a second child, raising our premiums would destroy our chances of providing many things for our one daughter, like healthier food choices.

575. Michael Abrams, Montgomery
I get my insurance from: Vermont Health Connect
My insurance company is: Blue Cross Blue Shield of Vermont

We have a Silver Plan and our already very costly insurance with its many limitations and high copayments and deductibles means that we are paying a lot for very little. A 15.6% increase is unjustified, absurd and should be opposed. It seems to me that these companies' main product is price-gouging. Without the adoption of single payer in the US, which is the only "developed" country that does not have some form of it, we will always be at their mercy.

576. Michael Sweeney, Essex
I get my insurance from: Vermont Health Connect
My insurance company is: Cigna

They want to raise prices. How much more will the president's make. That increase is too much for everyone but the upper management of these insurers.

577. Nicole Paquette, Saint Albans
I get my insurance from: Employer (self or household member)
My insurance company is: Blue Cross Blue Shield of Vermont

This proposed premium 15.6% hike would mean $40 more a month. That's alot--way over the cost of living. Personally, as a retiree, it means a 2% decrease in my take home income. Consider phasing the increase over 2 years (e.g. 7.8% per year)?

578. Mark Robinson, West Bolton
I get my insurance from: Military
My insurance company is: Tricare

It’s horrible but this is what happens when the government starts messing with the free market. Allow insurance companies to compete fairly nationwide, allow drug companies to compete with the big pharma companies etc...

579. Marsha Cloutier, Barton
I get my insurance from: Direct through MVP
My insurance company is: MVP

Way too much increase. My pay increases each year less than the cost of living increase. How am I going to pay for mandated insurance?

580. Julie Dederer, Hinesburg
I get my insurance from: independently, not via VHC
My insurance company is: Blue Cross Blue Shield of Vermont

I've been quietly absorbing the annual increases as I believe in a program that allows more Vermonters to have insurance than previously could. Yet as a middle class, single self employed person, this increase pushes the costs to borderline not-affordable. Please consider all levels of your customer base, some of those who may be in peril of having to drop insurance who previously were not at risk.

581. Kendra Lawton, Middlebury
I get my insurance from: Vermont Health Connect
My insurance company is: Green Mountain care

Vermonters can't afford health insurance increase. Our rents are high and more than 60% of my income.

582. Emily Seifert, Montpelier
I get my insurance from: Vermont Health Connect
My insurance company is: MVP

These proposed increases are outrageous. I pay a premium of $1,200. per month for my family of four for a high deductible plan ($5,500 per person) from MVP. After housing, this is my family's largest expense. We receive very little benefit from the insurance plan unless we exceed the deductible, which is unlikely to happen. We are paying a HUGE amount of money for what amounts to almost no coverage of our medical care. I find it completely unreasonable that MVP is requesting an 11% increase on premiums that are already nearly out of financial reach. MVP should look within their own organization to find efficiencies and non-essentials to cut, just as households are forced to do when faced with balancing their budgets. My family can not afford the proposed increases, nor do we feel it morally acceptable for insurance companies such as MVP and Blue Cross to charge such high premiums for access to health care, a basic need of every person. I oppose the requested increases and urge the GMCB to refuse them. Thank you.

583. Lesa Cathcart, Hardwick
I get my insurance from: Employer (self or household member)
My insurance company is: MVP

Insurance for small employers is unaffordable now. I buy it, but rarely use it. It would be worth it if they offered coverage for holistic and homeopathic medicine, which costs much less and actually heals people, not to mention mostly eliminating pharmaceutical costs. They spend a lot of money on client health supports that would be better used to lower consumer rates.

584. Madeline, Woodbury
I get my insurance from: Employer (self or household member)
My insurance company is: MVP

My workplace has only 2 employees that are on MVP. Raising the insurance premiums by %11 would cause a hardship to this small employer. During the recession when good paying jobs were scarce, many of the unemployed in VT opened small business to survive. To penalize those small business owners that helped VT and the US out of the recession is ethically wrong as we'll as a bad financial decision.

585. Nick, Marshfield
I get my insurance from: Employer (self or household member)
My insurance company is: Blue Cross Blue Shield of Vermont

Too much! Who gets a 16% raise in one year?

586. Jared Pendak, Bradford
Hello, Now is NOT the time to consider allowing health insurance providers to raise rates in Vermont. Many of Blue Cross Blue Shield's and MVP Healthcare's customers work for small employers who would pass added expenses associated with rate increases directly to workers -- at a time when many Vermonters simply cannot afford extra expenses. As Chief Health Care Advocate Michael Fisher has noted, Vermonters too often are forced to make significant financial decisions when it comes to health care. When weighing the arguments of insurance executives who want these rate increases, please remember that you have pledged to Vermonters to work toward reducing health care costs.
This is a wonderful opportunity for the Green Mountain Care Board to join working Vermonters in standing up against corporate health care organizations whose practices placing profits before people have contributed so mightily to the plight of so many. Let's take a stand to help limit its proliferation.
Thank you,

587. Judith McGraw, Manchester Center
I get my insurance from: Vermont Health Connect
My insurance company is: Vt medicaid
Stop with the greed! Doctors need to stop having you come in 5 times for one thing and stop ordering tests that won't show what they need! Stop the waste and you won't need a rate hike. How about the higher up people stop getting the gross raises and bonuses!

588. Leah Costello, Hinesburg
I get my insurance from: Employer (self or household member)
My insurance company is: Blue Cross Blue Shield of Vermont
The insurance rates are already prohibitive for our my hard working family. Continuing to increase the rates makes it hard for us to afford living in VT.

589. Vera Ryersbach, So. Starksboro
I get my insurance from: Soc. Sec. and State Teachers Retirement
My insurance company is: Medicare
Vt. Health Connects already has very high premiums. If raised, more people will choose not to have any insurance at all.

590. Elisha Johnson, Colchester
I get my insurance from: Employer (self or household member)
My insurance company is: Blue Cross Blue Shield of Vermont
Please don’t make these increases. Many people will suffer until wages start to increase in VT.

591. Karin Vossler
I get my insurance from: Employer (self or household member)
My insurance company is: MVP
I am trying to retire from my job of 35 years and one of the reasons that makes me stop is the cost of insurance. If it continues to rise, how can anyone afford to have the basic necessities and a little bit of comfort for a much deserved retirement?

592. Susan Egerton, Plainfield
I get my insurance from: Vermont Health Connect
My insurance company is: Blue Cross Blue Shield of Vermont
This is a hugh increase for people on fixed incomes, such as the elderly.

593. Lisa Schermerhorn, Fayston
I get my insurance from: Vermont Health Connect
My insurance company is: Blue Cross Blue Shield of Vermont
I'm a divorced single woman and I can barely afford my healthcare. On top of that I have a very large deductible. I recently had a minor test done and my out of pocket expense was over $400. The doctor wants me to have the test done every 6 months to check my progress and I said no, I can't afford it. A 15% Increase is a significant increase to me.

594. Brenda Granger, St. Albans
I get my insurance from: Vermont Health Connect
My insurance company is: MVP
I am a single income household, I make just above [redacted] year, my current Insurance premiums are just under $720 per month. I am 54 years old. I just cannot afford more and I can't afford to purchase a plan less that what I have, because I have no backup money if I have a serious illness or need surgery. A high deductible is not an option. Vermont has a problem with to much free Health care, at the cost of those who have to pay their premiums. Please Please Vermont..put on the brakes.

595. Marni Leikin, Montpelier
I get my insurance from: Vermont Health Connect
My insurance company is: Medicaide, soon to switch back to BCBS
These increases are untenable. My salary has not increased to cover the difference. every year our taxes, utilities increase, but salaries don't...there is no way to manage! single payer health care is needed!

NORTHEASTERN JURY RESEARCH PROJECT

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e-mail: jurysearch@gmail.com

By email: gmcb.board@vermont.gov July 24, 2019

Green Mountain Care Board
144 State St.
Montpelier, VT 05602

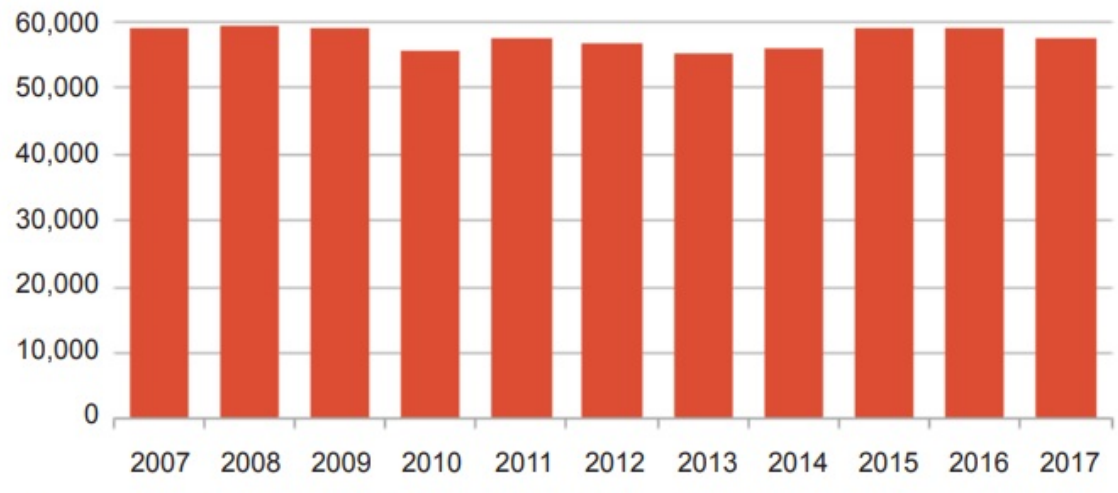
Re: Proposed Insurance Premium Rate Increases by BCBSVT and MVP

Dear Chairperson Mullin and Members of the Green Mountain Care Board:

I am a Vermont small business owner who provides health insurance for my two employees through Blue Cross Blue Shield of Vermont. I am writing to express my serious concerns about the premium rate increases proposed by BCBSVT and MVP.

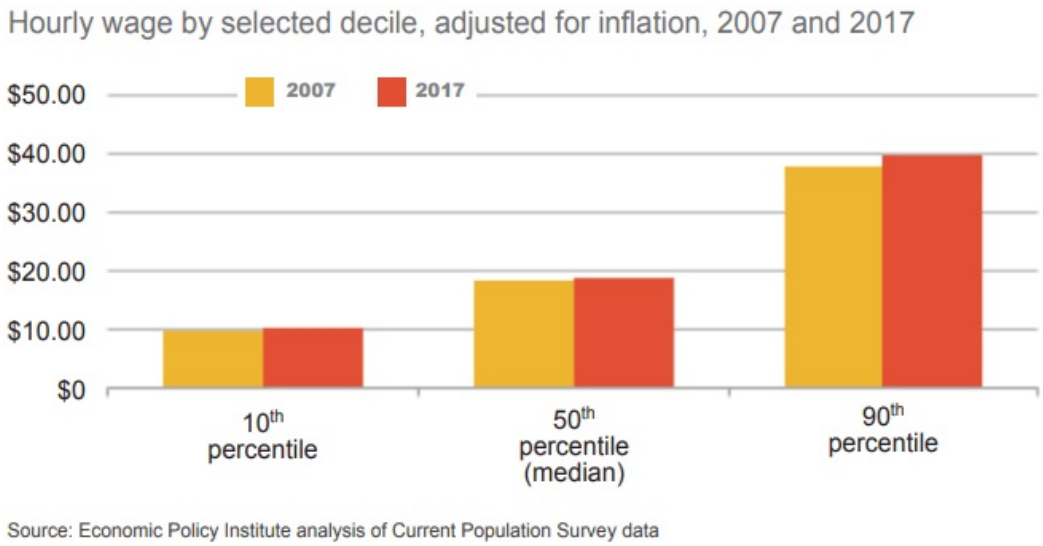
I believe that it is important for employers provide health insurance for their employees. Over the past ten to fifteen years, however, fellow small business owners and I have seen health insurance premiums and out-of-pocket healthcare costs skyrocket. Between 2014 and 2019, the cost of a mid-tier standard "Silver" BCBSVT plan for a single person has increased from $5,100 per year to $7,740, an increase of almost *52%*.

Meanwhile, for the ten years from 2007 through 2017, median household income in Vermont, adjusted for inflation, has remained stagnant:



Data source: U.S. Census Bureau, 2007-2017 American Community Survey 1-yr estimates

Vermonters' real wages have likewise barely budged over the past decade:



Source: Economic Policy Institute analysis of Current Population Survey data

Continuing this trend, Vermont's median household income *dropped* 2.7% from 2017 to 2018

Given stagnant household incomes and wages in Vermont, I don't see how approval of double-digit or near double-digit rate increases can be reconciled with the Board's mandate to ensure that health insurance is affordable and accessible. As an employer, I am worried about my continued ability to provide health insurance to my employees.

I understand that the Board bears the responsibility of weighing the concerns of ordinary Vermonters about affordability and access to health care against insurers' concerns about financial solvency. As a business owner, I recognize that the insurers' financial health is important, and that it may be easier to analyze insurer solvency than it is to assess whether health insurance is affordable and accessible for Vermonters and Vermont employers.

However, ensuring the affordability of health insurance remains at least equally important to your mandate. I urge that the Board carefully and conscientiously exercise its power and mandate to ensure the affordability of health insurance for both employers and employees. Your fellow Vermonters are counting on you. Thank you.

Sincerely,

Todd D. Schlossberg, President

July 24, 2019

To the Members of the Green Mountain Care Board,

Rural Vermont has supported, organized, and advocated for farmers, other members of the working lands, and the communities of which they are a part for 34 years. Rural Vermont's mission is to lead the resurgence of community-scale agriculture through education, advocacy, and organizing in support of Vermonters living in deep connection to one another and to the land that nourishes us all.

Locally and nationally farmers and members of our rural communities are identifying healthcare as a significant issue affecting their farms, livelihoods, and communities; and are asking farming organizations to represent them in the policy making process. In the HirednAg 2017 National Farmer and Rancher Survey, 72% of respondents wanted the USDA to represent them in national health insurance policy discussions. In Rural Vermont's 2018 Issues Survey - in which we identified a number of policy and / or organizing opportunities which we could focus on, and asked respondents to prioritize them - Healthcare ranked highest in over 200 responses. It is our intention to honor these voices - and to work alongside others to organize agricultural, food systems, and rural economic development organizations (among others) to understand healthcare as an integral issue for their members, to advocate for their communities, and to help to bring them and their voices to conversations about the future of healthcare in Vermont, the greater northeast, and nationally.

Rural Vermont feels there is sufficient evidence to support the position - our position - that the proposed rate hikes submitted by Blue Cross Blue Shield and MVP, and ongoing significant rate hikes on a yearly basis, are unaffordable, excessive, and inequitable.

The following are some of the HirednAg 2017 National Farmer and Rancher Survey Findings:

- Health Insurance is a National Farm Policy Issue - Health insurance is tied to farm and ranch risk management, farm viability and economic development.

- Over half of the households (55%) are not at all or slightly confident that they could pay for the costs of a major illness or injury without going into debt.

- 22% of the farm households had a medical or dental debt of over $1,000.

- Over three-fourths (79%) of these households said health insurance was a risk management tool.

- Almost half of farmers and ranchers (45%) are concerned they will have to sell some or all of their farm or ranch assets to address health related costs such as long-term care, nursing home, or in-home health assistance.

- Just over half of farmers and ranchers (52%) are not confident they could pay the costs of a major illness such as a heart attack, cancer or loss of limb without going into debt.

- Farmers are particularly vulnerable to healthcare needs (avg. age of app. 58 years, type of work, etc.)

The USDA forecasted avg. national net income for farmers is projected to be -$1,449.00 for 2019. This will be an improvement from 2018.

The Vermont Farm to Plate Annual Report from 2015 presents the following data with respect to farm based income:

- 79% of farms under 220 acres—4,491 farms— got <25% of household income from farming.

- 67% of farms over 260 acres—893 farms (the number is reduced substantially at this point) —got >25% of household income from farming.

What we'd like to point out about this information is the low bar set at 25% of household income for farms of both scales, as well as the great number and percentage of farms in both categories which make less than 25% of their household income from farming. This further attests to the economic challenges faced by farms, farm families, and farming communities.

Dairy farmers have been one of the most economically devastated sectors of farmers over the last few years - and over the last number of decades. According to data provided by the Vermont Agency of Agriculture, the number of cow dairy farms in Vermont has dropped from 1,015 in 2010, to 728 in 2018. From January to July 2019 the number has dropped from 700 to 675. In the last couple of months we have seen conventional milk prices rise for the first time in approximately 5 years - yet they are still below the cost of actually producing the milk on most farms. The Organic milk market has remained closed to new producers for well over a year, has asked many producers to produce less milk, and has in many cases also reduced its payments to farmers. Damien Boomhower, a farmer milking an app. 60 cow Organic dairy herd in Franklin County told me in November 2018 that he is losing more than $1,000 / cow this year and is not sure if he wants his children to take over the farm or become farmers. The past few years have seen milk processors sending out suicide prevention notices with paychecks to farmers - and a substantial number of dairy farmers taking their own lives nationally, including in Vermont.

Rural Vermont strongly believes that general trends in farm income, farm viability, and rural economic health need to be justly considered in your deliberations concerning these proposed

rate hikes and their affordability, and how access to - and quality of - healthcare in VT is affected by the high costs of premiums, deductibles, and copays.

Given that health insurance costs affect farm viability and the choices farmers make (as established in the testimony of farmers which Rural Vermont has heard, as well as the surveys and data provided in this testimony), here are just a few of the potential impacts of raising rates:

- Environmental impacts: the Farm and Water Coalition - as well as many organizations locally and nationally - have identified a nexus between farm viability and water quality (among other environmental outcomes). Farms which have a stable income and profit are able to invest in methods of agriculture which provide more protection of - if not generation of - ecological integrity (which also affects human health).

- Compromising Farm viability (as attested to above)

- Worse health care outcomes for individuals, families, communities (including mental health). Testimony the GMCB has heard suggests that people already choose not to visit healthcare providers or take necessary medications with the current cost of their healthcare. This will only increase with further rate hikes - leading to unnecessary worse health outcomes.

- Diminished rural community vitality and economic viability: less time available for volunteerism, poor small business viability, etc.

It is inequitable and unjust for many sectors of the economy (in this case, farmers and many local small rural businesses), of society, to be told by regulators, industry, and policymakers that they can not be afforded the cost of doing business, or of providing necessary healthcare to themselves and their families (as with many people who live in Vermont) - while allowing another sector assurance of its profits in the form of rate hikes well above inflation rates and at the expense of the general public.

This proposed rate hike will without a doubt affect the affordability of, and access to healthcare for many Vermonters who are currently struggling to even afford the costs of their current healthcare.

At the Blue Cross Blue Shield hearing, a representative of BCBS stated: we are “on our way to a more sustainable healthcare system” through this process. This is certainly not true for a public which is currently being asked to afford some of the most expensive healthcare with some of the poorest healthcare outcomes in a “developed” nation globally. And though it is not the purview of this particular hearing, Rural Vermont feels that a publicly funded universal health care system is the only sustainable path forward, and the only path which assures the affordability of, and access to, healthcare for everybody.

This same representative said that “solvency [for his industry and company] is the most fundamental factor in consumer protection”. He said - to paraphrase - that individual Vermonters may struggle to afford healthcare - but better to struggle than to lose access. These statements, and those in the previous paragraph, belie the disregard of BCBS for the testimony which people - its members - provide year after year to this Board in relationship to its proposed rate hikes, their access to care, the affordability of care, and the quality of the care they receive. Rural Vermont understands that people do lose access to healthcare when healthcare is not affordable.

He also said that healthcare is as expensive as it is because BCBS must provide rates based on a “community” vs. individual basis in VT. We know that our community members are struggling to afford their premiums, deductibles, and insurance regardless of age or whether they are on medicare.

He said that because there is “no penalty” for not carrying healthcare in VT - BCBS will lose clients. BCBS and MVP may lose clients, however it is because they offer unaffordable and inadequate coverage, and many people have experienced poor quality of care. Many of the fees suggested over time for not purchasing healthcare have been less expensive than the excessive costs of healthcare itself.

As Blue Cross Blue Shield has pointed out - there are many rising costs in the healthcare industry from pharmaceuticals to hospital executive salaries which affect their rate projections. We recognize these factors and agree that they are problematic and must absolutely be addressed - and we feel it is unjust and inequitable to pass along the cost of these problems to the rate paying public when most of this industry and its players enjoy profits and salaries well above most Vermonters.

Lastly, we recommend that this Board suspend the end date of this public comment period - and conduct public hearings like this across the regions of Vermont outside of normal work hours. This hearing and process itself is relatively inaccessible to those who need to work regular work hours, or travel in order to have their voices heard in person.

Sincerely,

Graham Unangst-Rufenacht
Rural Vermont Field Organizer

7/12/19

To The Green Mountain Care Board

My name is K. Lucille Whitney. I am 77 years old. My income is [redacted] Social Security. I have a small amount of savings but it does not generate much interest.

My Blue Cross is supplemental to Medicare now.

Last year my premium was raised $30 per month. It is now 272.72 per month. If you raise the premium another $45 per month it will be prohibitive.

I have pre-existing conditions which would make it difficult to find a new insurance company.

Hospitals charge more for people who have insurance so they can care for the poor who do not have insurance.

Ironically I have insurance but I also, am the poor.

Please consider very carefully before you allow this rate increase.

Thank you!

Phone [redacted]

K. Lucille Whitney

[redacted]

Consumer Reports lists ACA health insurance costs in all 50 states for 2019, citing insurer rate filings and other sources. For comparison, the report used the second lowest cost Silver plan for a 40-year-old male who doesn't receive financial subsidies.

Vermont's example was an HMO plan with a $622 monthly premium, a $1,550 annual deductible, an out-of-pocket maximum of $6,650, and total exposure including premiums up to $14,111.* The increase for this example from 2018 was 23.2%—the highest increase in the U.S. Not only was Vermont the highest, but Vermont and North Dakota were far outliers—the only states with increases above 20%. Only four states had increases between 10 and 20%. 23 states had only single digit increases, while 21 showed no change from 2018 or posted decreases, including Tennessee that decreased a hefty 26.2%.

I understand that the Blue Cross and MVP filings are an average of many plans within a range of increases. But I assume Consumer Reports uses this benchmark for a reason, as an indicator of how affordable health care is in the various states. Why then is Vermont so high?

Another study, by United Benefits Advisers, found Vermont to have the 4th highest premiums in the U.S. for an individual in 2016. And while our better than most, average annual deductible somewhat offset the high premium prices, we still ranked among the more expensive half of states when monthly premium and average deductible were factored together.

In 2013 we started spending the $45 million federal SIM grant. More federal money was poured into setting up ACOs and the advent of OneCare was heralded as something that would control costs and improve quality. Neither has occurred. We are now in year 2 of the All Payer Model, which no one can define or understand. Our premiums and our taxes that support health care evaporate in a cloud of opacity.

I recently heard about a state employee who went to the Waterbury Urgent Care Clinic for an attached tick. The tick was easily removed and the patient was given 200 milligrams of doxycycline. The charge was $1,300.

In my view, the changes the Care Board has ushered in are only feeding the monster: the hospital expansion projects, the many new consultants, overpaid administrators and contractors; the new IT systems, and OneCare. The changes have resulted in rapid consolidation and monopolization on the provider side, which has in turn led to less insurer bargaining power and higher charges.

The Care Board should limit hospital prices to the Consumer Price Index, as Rhode Island has done. Or index hospital prices to Medicare, as proposed in North Carolina. Or hold hospitals to a global budget, as Maryland has done. The Care Board should also examine why there are huge variations between hospitals in what commercial insurers pay for the same services.

We are in danger of losing rural hospitals. We are losing primary care providers in some locations. Independent practices have all but vanished. There's been a decrease in primary care visits among Medicaid recipients in the ACO. There's been a notable deterioration in the quality of primary care as clinicians hurry patients in and out, stare at the computer (which is all about coding and billing), and practice "to the test."

The reason for our high commercial insurance rates isn't the aging population or the "cost shift." These are red herrings that are easily debunked. I would like to leave you this article, published yesterday in JAMA, that pins the blame for high commercial rates on insurer secrecy and big hospital greed. We have a medical-industrial complex that is out of control and that will not restrain itself despite the rhetoric of accountability. The only restraints we have—rate review, CON, and hospital budget review—are proving inadequate. The Care Board needs to get tough and creative.

Ethan Parke, Montpelier citizen

VIEWPOINT

HEALTH POLICY

The Commercial Differential for Hospital Prices
Responses From States and Employers

Christopher F. Koller, MPPM, MAR
Milbank Memorial Fund, New York, New York; and School of Public Health, Brown University, Providence, Rhode Island.

Dhruv Khullar, MD, MPP
Department of Healthcare Policy & Research, Weill Cornell Medicine, New York, New York; and Department of Medicine, Weill Cornell Medicine, New York, New York.

The prices paid for hospital services have long had a strange dichotomy. For the 37% of the population insured by Medicare or Medicaid, prices are publicly available and generally increase slowly. By contrast, prices for the commercially insured population are privately negotiated, proprietary, and confidential. These rates are closely guarded by health plans, who are convinced that negotiating with clinicians and health care organizations on behalf of consumers is a source of competitive differentiation.

However, the black box of commercial insurer prices is slowly being pried open. Aggregated claims data have allowed for a deeper understanding of the size and variation in payments to hospitals, in particular, which represent the largest component of overall health care costs at approximately 40%. Commercial hospital prices are high relative to Medicare and vary considerably both within and between markets. These price discrepancies are larger than for physician services, are increasing over time, and are responsible for a substantial proportion of overall commercial insurance premium growth. Current commercial contracting models and antitrust authorities have not been effective in curtailing this trend, and state officials and public employers are responding with greater oversight.

Medicare prices are an important reference for evaluating the effectiveness of commercial payer negotiations with hospitals. Medicare sets consistent prices nationally, adjusting them to account for regional differences in the costs of living and the training and research functions of hospitals. Employers appear to pay hospitals twice as much as Medicare for inpatient services and 3 times as much for outpatient services (Table). Yet, these averages mask significant variation: different hospitals in the same market command very different prices for the same services.

Hospitals have traditionally justified these differential prices by citing the need to cross-subsidize care for uninsured patients and patients enrolled in lower-paying public programs. Commercial insurers maintain that they have to pay more because the government does not pay enough. A growing body of research raises questions about whether Medicare payments are actually insufficient for financially efficient hospitals to provide high-quality care. In addition, lower rates of uninsured individuals resulting from Medicaid coverage expansion under the Affordable Care Act reduced the amount of uncompensated care provided by hospitals.

Rather, high commercial prices appear attributable in part to the relative size and market power of hospitals. When it comes to negotiation, size matters—larger hospitals command higher prices, and hospital costs appear to rise to the level of revenue negotiable rather than to quality of care. The negotiating leverage enjoyed by consolidated hospitals stands in contrast to the much smaller differential available to most physicians. A 2018 study of physician payments from the Congressional Budget Office documented commercial-to-Medicare payment ratios of 110% for office visits, 130% for cataract surgeries, and 180% for knee replacements and colonoscopies, which were substantially lower than commercial-to-Medicare payment ratios for hospital services.[8]

The prices paid by commercial insurers to hospitals have driven growth in overall health care costs, as utilization rates have remained flat and, in some cases, declined. Between 2007 and 2014, commercial insurance prices for inpatient services increased 42% and prices paid for hospital-based outpatient care increased 25%, both of which were far greater than general inflation or the increase in Medicare or Medicaid prices during the same period.[2] More recent studies from White et al[4] and the Colorado Department of Health Care Policy and Financing[7] suggest this trend is continuing. Money spent by employers on health benefits for acute health care services is money not available for prevention, employee wage increases, or business expansion.

The commercial differential for hospital prices is less of an issue in Maryland. Unlike other states, Maryland did not disband its hospital rate-setting mechanism amid the deregulation that occurred in the 1980s and persisted with a process by which public and private insurers pay the same price for hospital services. Average commercial health insurance premiums in Maryland are the lowest in the Northeast.[9] In 2014, under a revised agreement with Medicare, hospitals in Maryland converted to a global budget model, taking responsibility for both price and utilization. Starting in 2019, the model expanded to include payments to non–hospital-based clinicians in the global budget agreement with Medicare.[10]

As awareness has increased regarding the role of commercial hospital prices in driving health care growth, other states have started to take action. The Rhode Island Office of the Health Insurance Commissioner and the Massachusetts Attorney General both used their investigatory authority to document large variations in case-mix–adjusted prices paid by insurers to hospitals within the same markets, with larger hospital systems consistently commanding higher prices. Having documented these differences, Rhode Island used its regulatory authority to limit further increases in hospital prices to the Consumer Price Index, leading to a significant reduction in insurance premium growth rates.

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Table. Studies Documenting Commercial Insurer Payments to Hospitals Relative to Medicare

Source	Study Scope	Inpatient Prices, % of Medicare	Outpatient Prices, % of Medicare	Relative Price Variation, %
White and Whaley,[1] 2019	25 States (2015-2017)	204	293	200 Between the highest and lowest state
Cooper et al,[2] 2018	National (2007-2011)	220	NA	229 Between the 10th and 90th percentiles for knee replacement
Maeda and Nelson,[3] 2017	National (2013)	189	NA	380 Between the 10th and 90th percentiles
White,[4] 2017	Indiana (2013-2016)	217	359	384 Between the highest and lowest hospital for inpatient; 290 for outpatient
White et al,[5] 2013	13 Markets	125-350	NA	280 Between the highest and lowest market
Kronick and Neyaz,[6] 2019	California (2015-2017)	208	208	1367 Between the highest and lowest hospital
Colorado Health Care Policy and Financing,[7] 2019	Colorado (2017)	240	240	121 Between insurance rating regions in state

In Massachusetts, legislators have pursued a broader response to the state's hospital pricing findings by establishing a Health Policy Commission that sets targets for the rate of overall spending growth (although the commission has limited enforcement capacities). Delaware and Rhode Island followed the Massachusetts example with a similar target-setting effort, and there is pending legislation in Oregon to do the same. Public purchasers are leading the employer response to rising commercial prices. In 2017, Montana's public employee health program announced it would limit hospital payments to 234% of Medicare rates. North Carolina's treasurer followed suit, proposing a figure of 182%, and Oregon passed legislation capping hospital prices for public employees at 200% of Medicare rates. Washington's newly passed "public option" for its health insurance exchange sets its hospital prices at 160% of Medicare.

Private sector employers are also becoming involved. A 2019 survey of 1300 self-insured businesses cited by the Society for Human Resources Management indicated that 12% were considering reference-based pricing for their benefit plans. A group of self-insured employers donated their claims data and helped fund a 2019 RAND study documenting the variation in 25 states.[1] A coalition across Wisconsin, Illinois, and Iowa is now negotiating contracts with hospitals directly based on Medicare prices. These public and private purchaser actions likely need to become widespread to have systemic effects on health care spending over time. An Executive Order from the Trump administration, issued June 24, 2019, may contribute to these efforts. It directs the Department of Health and Human Services to issue rules requiring hospitals to disclose "information based on negotiated rates" in an "easy to understand" format.

However, the black box of commercial pricing will not yield data easily. North Carolina hospitals, for example, have mounted vigorous legislative and social media responses to the state treasurer's proposal to index prices in the state employees' health plan to Medicare rates. In Colorado, a public advisory board refused to sign off on the state's hospital pricing report in response to hospital concerns. Many hospital associations are carefully following the billing legislation being debated nationally, understanding that any "percent-of-Medicare" figure written into law risks establishing a reference price for the industry.

Commercial insurers likewise have had little interest in revealing their rates. Representatives have criticized the recent Executive Order, warning of decreased competition and higher prices, and will likely contest what constitutes "easy to understand" and "information based on negotiated rates." Many price analyses rely on voluntary claims databases, in which insurers decide the rules of disclosure. UnitedHealthcare, for example, announced earlier this year that it will no longer submit data to the Health Care Cost Institute, leaving the database with only 3 national plans. In 2016, the Supreme Court interpreted federal Employee Retirement Income Security Act laws as exempting the administrators of self-insured health plans from requirements to submit their clients' claims data to state all-payer claims databases, and large employers have thus far been reluctant to submit data voluntarily.

Regardless of whether the United States adopts Medicare-for-all, recent state and employer action suggests that it may move toward "Medicare-reference-pricing-for-more." Using some multiple of fee-for-service Medicare rates as a common standard for assessing and setting commercial insurer prices increases institutional accountability and public awareness. Higher-paid hospitals are forced to justify their generous payment levels and important public conversations occur regarding health care value and funding priorities.

Policy discussions about the adequacy of Medicare rates, the price differential paid by employers and individuals, and why that markup should differ among hospitals and physicians caring for the same population of patients should be informed by data-driven analysis and vigorous public debate. The current system, in which private contracts are shrouded in secrecy, leads to costs tethered to the negotiating leverage of health care organizations instead of the value they offer, and patients and employers are paying the price.

ARTICLE INFORMATION

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Conflict of Interest Disclosures: None reported.

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My Sister's Story

I am writing on behalf of [redacted] who is recovering from a serious surgery. [redacted] at a local hospital and has a BCBS Gold Plan. Here is her story: "I saw a doctor on April 30 for [redacted]

[redacted]

[redacted]

Finally my sister's PC physician went out of the box and contacted the [redacted] next steps for this rare condition with uncertain prognosis. [redacted] had been done in April as it should have been, if BCBS had approved the doctor's order in a timely fashion rather than stonewalling and

obstructing - we don't know what the outcome of this situation will be but it is outrageous that she had to wait, to spend hours fighting and advocating along with others on her medical team only to be blocked time and again. We vehemently oppose a rate hike for this insurance company, until they undergo a thorough review of exactly what is their mission? What is their protocol for working with the medical professionals who know what their patients need? Why are they hiring another company as a watchdog? Why do they deny a scan that not only could save a life but also save money by being done in time so that a condition does not get worse by waiting?This system is broken! Do not put more money into it without an overhaul!

Carolyn Bronz
[redacted]

Submitted to the GMCB Public Hearing
Montpelier, VT
7/23/19

The Dr. Richard A. Sleeman Center

Bennington Project Independence
Adult Day Service
614 Harwood Hill, P.O. Box 1504
Bennington, VT 05201

July 17, 2019

Green Mountain Care Board
144 State St.
Montpelier, VT
05602

Dear Members of the Board,

We, at Bennington Project Independence, Adult Day Service, would like to request that the Green Mountain Board deny the 15.6% increase in health insurance premiums requested by Blue Cross Blue Shield for 2020.

Bennington Project Independence has been proud to be able to cover 100% of the BCBS insurance premium for our Adult Day employees for many years. Each year it becomes more and more of a struggle to provide that benefit with the low reimbursement ($16.72 an hour) we receive for our services.

Covering 100% of our employees' premium has been a major incentive to attract and maintain quality caregiving staff. A 15.6% increase would make that benefit impossible for us to provide for our employees.

Asking our direct care employees to make up the difference between what BPI might be able to afford from their low healthcare wage would be crippling and result in the loss of talented caregivers for our elder and disabled Adult Day participants.

We ask that the Green Mountain Care Board deny the 15.6% increase in insurance premiums.

Respectfully,

Linda Wichlac

Linda Wichlac
Executive Director

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JUL 22 2019
Green Mountain Care Board

Phone: (802) 442-8136 • Fax: (802) 447-8291
www.bpiads.org • *info@bpiads.org*

Sharon Gutwin PT and owner of the RehabGYM
373 Blair Park Rd
Suite 203
Williston, VT 05495

July 24, 2019

To GMCB

Regarding BCBS and MVP Rate Increases Requests

I want the GMCB to know that over the past 8 years that the board has regulated Health Insurance rate increases, while rates increased on average approx. 6% per year, the reimbursement rates paid to **private** providers in physical therapy have not gone up at all. Please let this sink in. Over actually 9 years, as verified in our records of payments, while insurance companies have been allowed more in revenue, they have not attributed any added revenue to private providers. In fact, when higher deductibles and copay/coinsurance is factored in, insurers have paid LESS as their customers pay more. The only exemption is UVMMC who has benefited from receiving higher reimbursements for reasons nor more justified than that of private providers. We all face higher costs in living and in doing business that require having to raise rates.

Add to this pay inequality, hospital budgets have been raised over 4% on average each year over this same time period.

I respect that, in part, the GMCB hands are tied in that their regulatory duties are of hospitals and insurance companies, but I challenge the thought that the board must remain blind to other providers of health care. I see no reason why in discussion with both the hospital and the insurance companies that you not address concerns of private business as it relates to your decisions. To not recognize a decision's impact on private health care businesses perpetuates hospital monopolization as more and more small businesses struggle to financially survive.

Returning to the present issue of insurance rate increases… the absence of any revenue flow through to private business is only part of my concern. The increasing financial burden Insurers place on consumers is another. It is not like visiting the doctor occasionally where copays are relatively insignificant. With PT services requiring on average 10 visits and copays set at $50 or more, you don't need to be a math major to understand how the average person cannot afford care. Copays for treatment in rehab must be lowered. Research is abundant in showing the value of PT. To put a financial barrier to PT only places a patient at higher risk for more expensive medical care in the future.

In summary I present 3 requests.

1. Recognize and respect the financial costs to small business when approving insurance rate increases.

2. Recognize and respect the added financial burden of patients in affording higher out of pocket costs insurers are placing on rehab services.

3. Recognize and respect that allowing one part of the health care market (hospitals) to raise their budgets takes a direct toll on small business both directly with insurers having to divert higher payments to hospitals and indirectly in that higher budgets allow the hospital to pay employees higher salaries whereas the private companies have no added revenue makes recruitment and retainment of employees a real challenge.

I appreciate your consideration.

Respectfully,

LAKE CHAMPLAIN REGIONAL
CHAMBER OF COMMERCE

RECEIVED
JUL 26 2019
Green Mountain Care Board

July 22, 2019

Kevin Mullin, Chair
Green Mountain Care Board
144 State Street
Montpelier, VT 05602

Re: MVP and BCBS Requested Premium Increases

Dear Chairman Mullin,

The Lake Champlain Regional Chamber of Commerce asks that you please consider the mounting cost of operating a business as you further deliberate Blue Cross Blue Shield of Vermont's proposed 2020 premium increase of 15.6% and MVP Health Care's increase proposal of 8.5%. The substantial increase considered in this rate case could represent significant financial stress for businesses providing health insurance, and for their employees.

The cost increase from higher premiums must be looked at in the aggregate, alongside the upward trend in cost pressures experienced by Vermont businesses ranging from payroll and other benefits, taxes, energy costs, and raw materials. In a report released this past week by WalletHub, Vermont ranked 43rd in a ranking of Best and Worst States to start a business. Among the metrics, Vermont came in almost last, at number 49, in average growth of small business and 41st in cost of living.

Faced with a rise in the cost of health insurance premiums, in addition to other cost pressures, employers will be faced with hard decisions to balance their books. We are hopeful that the Green Mountain Care Board can develop a path forward that shields employers from a substantial increase. that. Please, never hesitate to consider the Lake Champlain Regional Chamber of Commerce a resource to call on when considering the health of the Vermont economy.

Sincerely,

Thomas Torti, President
Lake Champlain Regional Chamber of Commerce

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Public Comment on BCBS rate increase
Comment by: Rebecca Chalmers
Date: July 22, 2019
Docket No. GMCB-006-19rr **SERFF No**. BCVT-131936226

Most BCBS health insurance plans **completely exclude** the primary health care need of **hearing disabled Vermonters**. This practice is unjust, unfair, and inequitable. Exclusion of my disability populations' primary, defining health care is unfairly discriminatory to the hearing disabled. The practice is completely unsubstantiated by medical or science research. The practice provides inadequate health care coverage and is detrimental to the public good. It reduces the quality of care across Vermont.

Hearing loss is a national health care problem. Hearing loss "has been associated with negative health outcomes, including cognitive decline,[3] incident dementia,[4] falls,[5] depression,[6] reduced quality of life,[7] and an increased number of emergency department visits[8] and hospitalizations.[9] However, fewer than 20% of adults with hearing loss report using hearing aids.[10] Hearing loss recently received recognition as a national public health concern.[11-15] Reports from the President's Council of Advisors on Science and Technology[12] and the National Academies of Science, Engineering, and Medicine[11] have called for policy changes to better understand the influence of hearing loss on health in the United States and to address the condition." (Reed et al 2018).

Preventative medicine is always cheaper than waiting for problems to develop to critical levels. Hearing health care is no different. The **cost benefit of covering hearing health** is at least $1,431. "The subgroup of individuals with a diagnosis of HL who received hearing services had significantly lower overall mean costs ($1,431 lower for Cohort 1, $1,648 lower for Cohort 2, $3,431 lower for Subcohort 3, all p<.001) than those who did not receive hearing services after adjusting for the cost of hearing services in each of the 3 cohorts." (Simpson et al 2018). "Untreated hearing loss was associated with $22 434 … or 46% higher total health care costs over a 10-year period compared with costs for those without hearing loss" (Reed 2018).

I urge the GMCB to **deny the rate increase until** the company has ceased excluding the basic health care needed by the hard of hearing population and fully included hearing health via:

a) **full coverage of hearing health at the same rate** as other durable medical equipment and medical services. Any payment to the patient of a lesser copay/limit is a plain face discriminatory practice that essentially creates a much higher copay for people with a disability.
b) covering hearing health devices including hearing aids, bone anchored hearing aids, batteries or rechargers, and remote microphones designed to couple with hearing aids
c) covering hearing health services, including hearing tests, counseling, hearing aid fitting, and aural rehabilitation

I urge the GMCB to consider asking actuaries to revise analyses to include cost savings of covering hearing health. The claims cost benefit of covering hearing health is at least $1,431 (Simpson et al 2018). This is not even the benefit to Vermont of having healthier people able to work longer and communicate better, this is just the raw claims data.

Vermont has one actuarial report that shows the minimal cost of covering hearing aids--and it does not even include the claims cost benefit of $1,431 or better! Please note, the actuarial report uses the figure of $1,500 which might be a rough average cost. A $1,500 price *limit* on hearing aids is not equitable or medically substantiated as a cap. Some individuals (typically those with severe hearing loss) require more technically advanced hearing aid prosthetics, whereas others (typically with milder hearing losses) might be successful with cheaper hearing aids. A base price of a set of binaural hearing aids averages $3,300-$6,000 (Strom 2013) and lowest-priced pair of devices average $2,070 per pair (Strom 2018). Prices are getting lower in some venues, for example Costco just released a pair of hearing aids for $1,499 (Hearing Health and Technology Matters 2019). Over The Counter hearing aids will be released after federal regulations are finalized in 2020 (Bailey 2018). OTC aids are expected to be considerably cheaper.

People **with hearing loss have lower lifetime earnings** due to their hearing disability and are thus especially vulnerable to rate increases. "In a systematic review of the economic effects of [hearing loss] HL, [a] study found consistently higher costs and expenditures for individuals with HL, with a very high cost of forgone earnings and lifetime expenditures.[29] " (Simpson 2018). Hearing health costs are much lower than many health care costs; it is only high for the disabled individual and not for the health care system as a whole. Other routinely-covered services and medicine costs substantially more: arthritis treatment costs 40k a year (Faher 2019), while hearing health care coverage saves money.

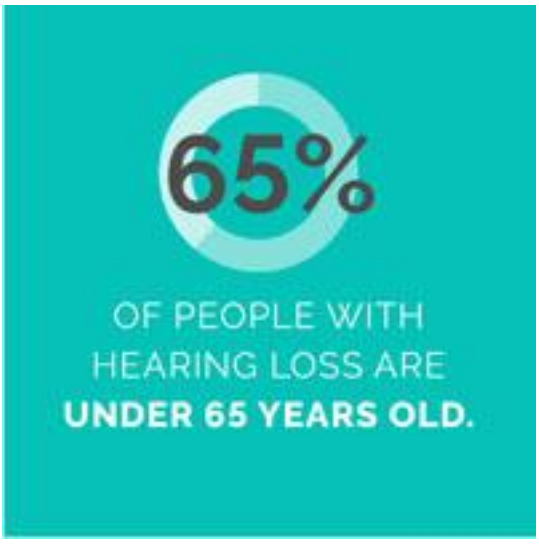
Treating hearing loss allows patients to **hear their doctors** and pharmacists accurately, a necessity for informed consent and a bedrock of quality care. Treated hearing loss allows Vermonters to stay in the work force, stay connected to other people, and avoid dementia and other debilitating ailments. The "marginalizing effects of hearing loss, such as social isolation, may be creating higher rates of substance use disorders" Michael McKee, M.D., MPH (Gavin 2019).

Many states already cover hearing health for patients of all ages. New Hampshire has for many years! Arizona does (2017-2021 EHB Benchmark Plan Information), as do Hawaii, Nevada, New York, Rhode Island, Texas, and Wisconsin. Federal BCBS plans routinely cover hearing health. Why short-shrift Vermonters?

A substantial rate increase, coupled with complete lack of coverage of the primary health care need of our disability population, exacerbated by the lowered income of hard of hearing individuals, is devastating to hearing disabled Vermonters.

I urge GMCB to reject rate increases until a successful rate increase package is submitted: one that provides improved quality of care, improved equity, and reduced costs—via full coverage of hearing health.

1 in 5
AMERICAN TEENAGERS
NOW SUFFER FROM
SOME TYPE OF
HEARING LOSS.


65%
OF PEOPLE WITH
HEARING LOSS ARE
UNDER 65 YEARS OLD.

"Hearing the softness goes right to the soul."

"When my son speaks, I need to hear him."

ADULTS WITH HEARING LOSS ARE UP TO
5 TIMES
MORE LIKELY TO DEVELOP
DEMENTIA

PEOPLE WITH
HEARING LOSS HAVE
50%
MORE
ACCIDENTAL INJURIES

HEARING
connects us
TO EACH OTHER AND
OUR PHYSICAL WORLD.

PROTECT
INNER-EAR
HAIR CELLS AGAINST
EXCESSIVE NOISE

Hearing loss affects more
than individuals.
It's a public
health concern.
Improving access to and affordability of hearing
health care means finding solutions that span society.
Learn more at nas.edu/hearing. #NASEMhearing

Green Mountain Care: A Comprehensive Model for Building Vermont's Universal Health Care System

Report Appendices

Submitted by Governor Peter Shumlin to the Vermont State Legislature December 30, 2014

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Appendix A-1: 5-Year Comparison of Vermont Populations under ACA and GMC

	2017		2018		2019		2020		2021	
	ACA	GMC	ACA	GMC	ACA	GMC	ACA	GMC	ACA	GMC
Non-group Insurance	49,000	-	51,000	-	50,000	-	49,000	-	49,000	-
Medicaid Primary	141,000	-	142,000	-	141,000	-	141,000	-	140,000	-
Employer Sponsored Insurance	296,000	31,000	289,000	15,000	287,000	2,000	286,000	2,000	283,000	2,000
Private ESI	216,000	31,000	212,000	15,000	211,000	2,000	210,000	2,000	208,000	2,000
State ESI	26,000	-	26,000	-	26,000	-	25,000	-	25,000	-
Local ESI	14,000	-	14,000	-	13,000	-	13,000	-	13,000	-
Muni ESI	40,000	-	38,000	-	37,000	-	37,000	-	37,000	-
Federal Government Employee Insurance	10,000	-	10,000	-	10,000	-	10,000	-	10,000	-
Uninsured	17,000	-	18,000	-	18,000	-	18,000	-	18,000	-
Medicare	140,000	140,000	144,000	144,000	148,000	148,000	152,000	152,000	156,000	156,000
Individuals Supplementing Medicare	36,000	36,000	37,000	37,000	38,000	38,000	39,000	39,000	41,000	41,000
Medicaid/GMC Medicare Supplementation	37,000	37,000	37,000	37,000	38,000	38,000	39,000	39,000	40,000	40,000
Employer Medicare Supplementation	22,000	22,000	23,000	23,000	24,000	24,000	25,000	25,000	25,000	25,000
Military Insurance	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000
GMC Enrollment	-	519,000	-	533,000	-	544,000	-	542,000	-	538,000
Population of Commuters in on GMC	61,000	61,000	64,000	64,000	66,000	66,000	66,000	66,000	65,000	65,000

Appendix A-2: Coverage for Vermont Populations under GMC

Description	Primary Coverage	Secondary Coverage	Contribution to GMC	Considerations
Medicare:				
Seniors (over age 65)	Medicare	Vermont's Current Medicare wrap programs, such as VPharm, QMB, and SLMB would stay the same.	None	Medicare Supplemental Insurance would remain available.
Individuals with disabilities (over 24 months)	Medicare	Vermont's Current Medicare wrap programs, such as VPharm, QMB, and SLMB would stay the same.	None	Medicare Supplemental Insurance would remain available.
Military:				
Active duty military[1]	TRICARE	None while on TRICARE	None while on TRICARE	GMC coverage is suspended. GMC would be available as soon as the individual drops or is no longer eligible for coverage. Individuals who are eligible for enhanced benefits from Medicaid would maintain enhanced benefits through GMC.

[1] In order for TRICARE to be primary coverage, a state statutory change is needed. This is because, under federal law, TRICARE is always secondary, except to Medicaid.

Description	Primary Coverage	Secondary Coverage	Contribution to GMC	Considerations
National Guard	TRICARE, while on active duty	None while on TRICARE	None while on TRICARE	Vermonters with the Guard would have GMC coverage while not on active duty & can suspend that coverage during the time period they are on active duty.
Veterans	VA insurance, if applicable	None while using VA insurance	None while using VA insurance	Insurance provisions expire in August 2017 or sooner.[2] Veterans may use the VA Hospital for services as well, but are not required to under GMC.
Public employees:				
Federal employees taking federal insurance (FEHB)	Federal employee insurance	GMC	Full contribution	
State employees	GMC	Depends on bargaining agreement	Full contribution	
Public education employees	GMC	Depends on bargaining agreement	Full contribution	
Municipal employees	GMC	Depends on bargaining agreement	Full contribution	
Employees in the private sector:				
Employees not taking private employer sponsored insurance (ESI)	GMC	N/A	Full contribution	

[2] Veterans Access, Choice, and Accountability Act of 2014 § 101(p) states that the Veteran's Choice program will end after amounts in Veteran's Choice Fund are exhausted or after three years from enactment, whichever is first. The bill was enacted on August 7, 2014.

Description	Primary Coverage	Secondary Coverage	Contribution to GMC	Considerations
Employees taking private employer sponsored insurance (ESI)	ESI	GMC	Full contribution	
Non-residents working for a Vermont employer	GMC, ESI, or Exchange coverage from state of residence	N/A	Optional contribution	Non-residents working for a Vermont employer may purchase GMC coverage.
Retirees:				
Retiree not on Medicare with no other coverage	GMC	N/A	Full contribution	
Retiree not on Medicare with private employer coverage	Employer retiree coverage	N/A	No contribution	GMC creates a ten year window where non-Medicare retirees with employer coverage are exempt from GMC coverage and taxes.
Retiree on Medicare	Medicare or retiree plan	Medicare supplemental or retiree plan	No contribution	
Resident state or education employee retiree	GMC if not on Medicare, otherwise, Medicare	Depends on bargaining agreement, but retirees on Medicare will have state retiree plan	Full contribution to GMC if not on Medicare, otherwise no contribution	

Description	Primary Coverage	Secondary Coverage	Contribution to GMC	Considerations
Non-resident state or education employee retiree	State retiree plan if not on Medicare, otherwise, Medicare	If on Medicare, state retiree plan	No contribution to GMC	

Appendix A-3. Legislative Council Memorandum on Residency

MEMORANDUM

To: Senate Health & Welfare Committee

From: Robin Lunge, Bill Russell

Date: April 6, 2006

Subject: Durational Residency Requirements for Health Care Coverage

The U.S. Supreme Court has imposed strict constitutional limits on the imposition of residency requirements as a condition for receipt of state benefits. In short, a state may establish residency requirements to insure that benefits of state citizenship inure only to citizens of the state. However, *durational residency requirements* – those that require a period of residency in the state prior to receipt of benefits – are extremely problematical and probably prohibited.[1]

The Court's decisions are based on a constitutional "right to travel" protected by both the Equal Protection Clause of the 14th Amendment and the Privileges or Immunities Clause of that amendment.[2]

Equal Protection Cases

In the earlier cases decided in the 1970s, the Court's holding was based on the Equal Protection Clause. In those cases, the court found that the right to travel was such a fundamental right that it would apply a "strict scrutiny" analysis to balance the purported governmental justification underlying any state residency requirement with the burden of that right. Significantly, based on that analysis, the Court struck down an Arizona statute which required one year of residency within the county as a condition of eligibility for non-emergency medical care at public expense. The Court held that restricting medical care for indigents from other states severely burdened the right to travel under the Equal Protection Clause.[3]

However, in some of the Court's Equal Protection Clause decisions in the decade of the 1970s, a durational residency requirement was upheld because the right to travel was

[1] Durational requirements would include any restrictions in coverage of pre-existing conditions and requirements for "credible coverage" (defined in ERISA and HIPAA) which apply only to recent residents of Vermont.

[2] Although the word "travel" is found nowhere in the text of the Constitution, the Court found that the "right to travel from one state to another is firmly embedded in our jurisprudence." In fact, "the right is so important that it is a virtually unconditional personal right, guaranteed by the constitution to us all." *Saenz v. Roe,* 526 U.S. 489, 498 (1999)

[3] *Memorial Hospital v. Maricopa County*, 415 U.S. 250 (1974).

apparently not sufficiently burdened by those requirements. These decisions are not easily reconcilable. They include upholding durational residency requirements for the following:

In-state college tuition rates. "The state can establish such reasonable criteria for in-state status as to make virtually certain that students who are not in fact bona fide residents of the state, but have come there solely for educational purposes, cannot take advantage of the in-state rates."[4]

Divorce. The Court upheld a one-year residency requirement for the ability to obtain a divorce in state courts.[5]

Voting in political party primaries. The Court upheld political party registration restrictions that amounted to a durational residency requirement for voting in primary elections.[6]

Privileges or Immunities Cases

However, whatever possibility that may have existed for sustaining some durational residency requirements under the 14th Amendment's Equal Protection Clause (above) seems to have been foreclosed by the Court's more recent rulings under the Privileges or Immunities Clause.

The controlling decision is *Saenz v. Roe*, 526 US 489 (1999), in which the U.S. Supreme Court struck down a California statute imposing durational residency requirements by limiting welfare benefits in a recipient's first year of residency to the amount of benefits that the recipient would have received from the state of former residence. In this decision, the Court asserted and expanded upon the "right to travel." It includes "for those travelers who elect to become permanent residents, the right to be treated like other citizens of that state."[7] It is therefore constitutionally impermissible for a state to establish two classes of benefits for new and older residents. Newly arrived citizens have the same right to enjoy the "privileges or immunities" as other citizens of the same state. This "citizenship clause" does not allow for degrees of citizenship based on length of residence.[8]

In short, "it appears that the Court's invocation of the Privileges or Immunities Clause prohibits durational residency requirements in every context."[9] In dissent, Chief Justice Rehnquist eschewed this rationale based on creating a "conflated" right to travel. The

[4] *Vlandis v. Kline*, 412 U.S. 441(1973).
[5] *Sosna v. Iowa*, 419 U.S. 393 (1975).
[6] *Rosario v. Rockefeller*, 410 U.S. 752 (1973).
[7] *Saenz v. Roe*, 526 US 489, 500 (1999)
[8] Id. at 504.
[9] Id. at 514-516, (Rehnquist, C.J, dissenting) (stating that virtually all classifications of citizenship based on the length of state residency will violate the Privileges and Immunities Clause of the 14th Amendment).

right, he asserted, is properly defined as the right of a person to become a citizen of another state. There is no infringement on travel.

Chief Justice Rehnquist also stresses the irreconcilability of the Court's durational residency decisions. "If states can require individuals to reside in-state for a year before exercising the right to educational benefits, the right to terminate a marriage, or the right to vote in primary elections, then states may surely do the same for welfare benefits . . . he durational residency requirement challenged here is a permissible exercise of the state's power to assure that services provided for its residents are enjoyed only by residents."[10]

A "Wait and See" Approach

In California, Senate Bill 840 would provide comprehensive universal health care to all Californians, including undocumented residents, using a single-payer publicly financed mechanism. Included in the bill is the provision which, after two years of plan implementation, would give the commissioner the discretion to impose a waiting period on eligibility if the commissioner determines that "large numbers of people are emigrating to the state for the purpose of obtaining health care through the California Health Insurance System." (SB 840 §140200(c)(10)(G)). Additionally, the bill specifies that any implementation of a waiting period must be done on a statewide basis. (SB 840 §140204(d)).

Conclusion

Durational residency requirements in state legislation (those that distinguish among residents of a state based on length of residency) are difficult to support for at least two reasons.

First, if federal funds (such as Medicaid) are involved, federal requirements usually prohibit different classes of eligibility based on length of residence in the state.

Second, the U.S. Supreme Court has held that a citizen's "right to travel", protected by the 14th Amendment, is infringed by denying newly arrived residents the same benefits a state provides to longer term residents. Like any constitutional right, this right to travel is not absolute. Some infringement may be permissible, but only by a showing of an extremely compelling state interest.[11]

Applying these considerations to the health care legislation proposed last year:

We recommended no durational residency requirement for pharmaceutical programs in H.516. These programs intermingle federal funds. Also, while VT has provided

[10] Id. at 520 – but this of course is in dissent.

[11] In the most recent controlling decision, *Saenez v. Roe*, 526 US 489 (1996), California was unable to show that the fiscal savings to the state gained through a differential in welfare benefits paid to short term residents was not enough of a compelling state interest to justify infringing the right to travel.

generally better pharmaceutical benefits than most other states, there is little evidence that this has caused a migration into the state causing a significant enough fiscal impact to the state to justify infringing the right to travel. These programs would use Medicaid funds for their support.

We recommended a reasonable durational residency requirement for the House-passed universal access health care program in H.524. This program would be state funded; Medicaid would be separate. And, what is at stake is more than a minor impact on the state's finances; arguably there is a compelling state interest. The health care system, every citizen's medical care, the state's entire budget, and the state's economy as a whole may be impacted sufficiently to justify some infringement on the constitutional right to travel.

Appendix B-1: Detailed Information on Benefit Design

What are the benefits?

Benefits consist of three main components:

- Covered services
  - What services are paid for in whole or in part?
- Cost-sharing
  - How much does an individual pay out of pocket when they get services?
  - Do individuals pay out of pocket through co-pays, deductibles, or co-insurance?
- Network of health care providers
  - Are there restrictions on the specific providers an individual can use?

In creating benefit plan designs, we worked with consultants, including actuaries at Wakely Consulting Group, and reviewed the following information:

- health economic studies on impacts of cost-sharing,
- the current plans offered through Vermont Health Connect,
- the state employee plans,
- the plans offered to education employees through VEHI,
- anecdotal information from members of the public who were dissatisfied with the VHC plan choices, and
- public input provided in the benefits listening sessions conducted in 2012.[1]

In addition, we consulted with the Governor's Consumer Advisory Group on an on-going basis as plan designs were being developed. We also provided periodic updates to and sought input from the Governor's Business Advisory Group.

We used the following principles to focus our efforts throughout the benefit design process:

- Federal and state requirements for benefits
- Equity
- Administrative cost & complexity
- Options fit together, easy to explain
- Individual out of pocket cost (average & max)
- Medical cost & utilization
- Change from current/expected
- Federal & state tax implications

After applying the above principles to the research and various benefit designs, we concluded that GMC should provide Vermonters with coverage of the essential health

[1] A summary of the public input is available here: http://hcr.vermont.gov/public_engagement/benefits

benefits under the ACA at a 94 percent actuarial value (AV), a cost-sharing level similar to the Vermont state employee plan. The following discussion will break down each component of benefit design and explain how we made our determination of offering coverage of the essential health benefits at a 94 percent AV.

Overview of Legal Requirements for All Benefit Components

Federal law through the Affordable Care Act (ACA) and state law through Act 48 place certain legal parameters on the GMC benefit design. Under the ACA, the GMC benefit design's coverage must be as comprehensive and affordable or more comprehensive and affordable as the plans currently offered through Vermont Health Connect.[2]

Under Act 48, the GMC benefit design's coverage must be as comprehensive as Vermont's Catamount Health plan and at least as affordable as an 80 percent AV, which is the same as a gold plan on Vermont Health Connect.[3] Act 48 also requires that individuals with low incomes and children with family income under three times poverty will receive the covered services currently provided by Dr. Dynasaur[4] and Medicaid as of January 1, 2014.[5] This ensures that low and middle-income Vermonters will not be worse off under GMC than they are today. This means that GMC as one health care program would actually encompass two different plans: a plan for Vermonters who are eligible for Medicaid funding with the enhanced benefits that are offered today and the GMC plan for those that are not eligible for Medicaid funding. Because the Medicaid benefit was already determined as the same benefit offered as of January 1, 2014 through Act 48, we focused on the GMC benefit plan that would be offered to Vermonters who are not eligible for Medicaid funding.

Covered Services: Background

In order to get a waiver from the federal government under the ACA, GMC must cover all of the essential health benefits required by the ACA. The ACA requires the following 10 benefits to be covered:

- Ambulatory patient services (outpatient care without being admitted to a hospital)
- Emergency services
- Hospitalization (such as surgery)
- Pregnancy, maternity, and newborn care (care before and after a baby is born)
- Mental health and substance use disorder services, including behavioral health treatment (this includes counseling and psychotherapy)
- Prescription drugs

[2] ACA § 1332.
[3] 33 V.S.A. § 1822 & 1825.
[4] Includes early periodic screening, diagnosis and treatment (EPSDT).
[5] 33 VSA 1825(b)

- Rehabilitative and habilitative services and devices (services and devices to help people with injuries, disabilities, or chronic conditions gain or recover mental and physical skills)
- Laboratory services
- Preventive and wellness services and chronic disease management
- Pediatric dental and vision services

Currently, individuals and small businesses purchasing a Vermont Health Connect plan have an essential health benefit package, which was based on a benchmark plan. The benchmark plan was chosen from the most commonly purchased plans in 2012, so it includes Vermont's legally required insurance benefits. In Vermont, the Green Mountain Care Board (GMCB) chose a benchmark plan offered by Blue Cross Blue Shield of Vermont. This plan was then supplemented to ensure that the plan met the 10 required benefits described above. [6]

Table B-1.1., below, shows the differences between the covered services provided by plans in Vermont Health Connect to the individual and small group market versus covered services in plans for state employees and education employees. The fact that the figure shows only a few services with variations in coverage illustrates how similar covered services are across plans today.

Table B-1.1

	Essential Health Benefit	State Employee and Retirees		VEHI Education Employees and Retirees	
		SelectCare	Total Choice	300 Ded	VHP
Chiropractic	Limit 12 visits then prior approval required	Limit 60 visits per year (total visits for PT, OT, ST, Chiro)	Limit 60 visits per year (total visits for PT, OT, ST, Chiro)	Prior approval required after 12th visit	Prior approval required after 12th visit
Infertility	Not covered	Up to $50,000 lifetime max	Up to $50,000 lifetime max	Not covered	Not covered
Fertility Drugs	Covered	Covered	Covered	Covered	Covered
Bariatric Surgery	Covered	Covered, medical necessity	Covered, medical necessity	With prior approval	With prior approval

[6] The details of this plan are provided in Appendix B-3.

	Essential Health Benefit	State Employee and Retirees		VEHI Education Employees and Retirees	
Routine Eye Exams	1/year for children	$100/2 years	$100/2 years	Not covered	1/year

Expansion of Covered Services

As required by Act 48, we determined cost estimates for additional covered services, specifically, adult dental, adult vision, hearing, and long-term care.

Adult Dental

Three scenarios were considered for adult dental coverage. In the first option, GMC only covers dental tiers I and II (preventive and restorative services) at 100% and 80% coverage respectively. In the second option, GMC covers dental tiers I, II, and III (preventive, restorative and major services) at 100%, 80% and 50% coverage respectively. Scenarios 1 and 2 reflect typical private dental insurance. The last scenario is the Vermont state employee plan.[7] Medicaid covers dental up to a $510 benefit maximum with $3.00 co-pay per visit. Only the *additional* costs of expanding the benefit are included here. Any GMC wrap of Medicaid assumes the co-insurance would not apply to Medicaid-eligible individuals but that the annual maximum, where applicable, would apply. For example, under the Vermont state employee plan scenario, Medicaid's $510 benefit maximum would be increased to $1,000 benefit maximum, providing increased coverage. Due to the unique nature of this coverage, our actuaries used a conservative estimate of administrative expenses at 7 percent.

The following tables show the total annual cost by scenario. Each table shows the additional PMPM and cost of dental coverage for all adults in GMC, except for non-resident Vermont employees, federal employees, and employees who have employer-sponsored coverage.[8]

[7] Additional benefits details for the Vermont state employee plan can be found at: http://humanresources.vermont.gov/salary/benefits/dental

[8] These cost analyses were developed prior to the Governor's final decisions and announcement not to pursue financing for GMC. These scenarios have not been updated to reflect the preferred population assumptions in the financing plan due to the cost of actuarial services. Including the additional populations would further increase the costs of providing these services.

Table B-1.2: Additional Cost of Alternative Adult Dental Scenarios ($ Millions)[9]

Dental Benefit Applies to Adults Only[10]		Scenario 1	Scenario 2	Vermont state employee plan
Coverage Levels				
	Tier I - Preventive	100%	100%	100%
	Tier II - Basic Restorative	80%	80%	80%
	Tier III - Major Restorative	Not Covered	50%	50%
	Deductible	Not Applicable	Not Applicable	$25 Deductible All Tiers
	Annual Benefit Maximums	Not Applicable	Not Applicable	$1,000 Annual Max
Estimated Cost Impact (includes Administrative Costs)				
Commercial				
	"Premium" PMPM	$34.85	$41.40	$29.86
	Estimated GMC Adults	259,150	259,150	259,150
	Total Cost	$108,400,000	$128,700,000	$92,900,000
Medicaid				
	"Premium" PMPM	$8.81	$11.80	$7.77
	Estimated GMC Adults	81,822	81,822	81,822
	Total Cost	$8,600,000	$11,600,000	$7,600,000
Total 2017 Cost		**$117,000,000**	**$140,300,000**	**$100,500,000**

We also researched whether the health benefits from coverage of adult dental would mitigate increased costs, but the results were inconclusive. Studies have found periodontal disease bacteria associated with the following conditions:

- brain abscesses (Silva, 2004)

[9] This Table excludes non-resident Vermont employees, federal employees, and employees who have employer-sponsored coverage. See footnote above.

[10] These numbers are based on high level estimates of the utilization and unit cost of covered services. National and Vermont specific data was used where possible. There are limitations to the data including some unknown corresponding benefits, implicit selection in the data, and missing data due to annual maximums (claims often not submitted once benefit maximums are met). If we chose to include coverage, we would further refine these estimates. For example, a PMPM variance of plus or minus 15% would not be unreasonable given the quality of the data provided to our actuaries.

- pulmonary disease (Suzuki and Delisle, 1984)
- cardiovascular disease (Haraszthy et al., 2000)
- adverse pregnancy outcomes (Offenbacher et al., 2006; Scannapieco et al., 2003b; Tarannum and Faizuddin, 2007; Vergnes and Sixou, 2007)
- respiratory disease (Scannapieco and Ho, 2001)
- cardiovascular disease (Blaizot et al., 2009; Janket et al., 2003; Paraskevas, 2008; Scannapieco et al., 2003a; Slavkin and Baum, 2000)
- coronary heart disease (Bahekar et al., 2007)
- diabetes (Chávarry et al., 2009; Löe, 1993; Taylor, 2001; Teeuw et al., 2010)

Despite these findings, it has been noted that "…the relationship between periodontal disease and these systemic diseases is not well understood, and there is conflicting evidence about whether periodontal treatment affects outcomes for these systemic conditions."[11]

A recent study has found positive outcomes associated with dental care for individuals who have cerebral vascular disease (stroke), coronary artery disease (heart disease), Type II Diabetes, or who are pregnant; however, the study "did not prove that the dental treatment has a beneficial effect beyond the mouth."[12] Due to these findings and its added costs, we decided to focus our efforts on reducing out of pocket costs for major medical for the first phase of GMC and to revisit the issue of covering adult dental at a later phase.

Adult vision

Adding coverage for adult vision is also an option for GMC. This benefit would cover exams and hardware once a year, which is consistent with the federal employee benefits. Due to the unique nature of this coverage, our actuaries used a conservative estimate of administrative expenses at 7 percent.

The following tables show the total annual cost by scenario. Each table shows the additional PMPM and cost of vision coverage for all adults in GMC, except for non-resident Vermont employees, federal employees, and employees who have employer-sponsored coverage.[13]

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[11] "2 Oral Health and Overall Health and Well-Being." Advancing Oral Health in America. Institute of Medicine Washington, DC: The National Academies Press, 2011, pg. 33, citing (Beck et al., 2008; Fogacci et al., 2011; Jeffcoat et al., 2003; Lopez et al., 2002, 2005; Macones et al., 2010; Michalowicz et al., 2006; Newnham et al., 2009; Offenbacher et al., 2006, 2009; Paraskevas et al., 2008; Polyzos et al., 2009, 2010; Sadatmansouri et al., 2006; Simpson et al., 2010; Tarannum and Faizuddin, 2007; Teeuw et al., 2010; Uppal et al., 2010).

[12] "Impact of Periodontal Therapy on General Health," Jeffcoat, Marjorie K. et al., American Journal of Preventive Medicine , Volume 47 , Issue 2 , 166 – 174, 2014.

[13] These cost analyses were developed prior to the Governor's final decisions and announcement not to pursue financing for GMC. These scenarios have not been updated to reflect the preferred population

Table B-1.3: Additional Cost of Adult Vision ($ Millions)[14]

Vision Benefit Applies to Adults Only	FEDVIP - BlueVision High Plan
Diagnostic	
Eye Exam	limit 1 / yr
Eyewear	
Lenses	limit 1 pair / yr
Frames	limit 1 pair / yr $150 allowance
Contact Lenses	limit 1 / yr $150 allowance in lieu of eyeglasses ($600 for medically necessary)
Estimated Cost Impact (includes Administrative Costs)	
Commercial	
"Premium" PMPM	$7.80
Estimated GMC Adults	259,150
Total Cost	$24,300,000
Medicaid (hardware only)	
"Premium" PMPM	$4.73
Estimated GMC Adults	81,822
Total Cost	$4,600,000
Total 2017 Cost	**$28,900,000**

Similar to dental, we decided to focus our efforts on reducing out of pocket costs for major medical for the first phase of GMC and, therefore, would not recommend adult vision coverage at this time. As noted above, a large portion of the pediatric population would have vision coverage under the recommended coverage.

Hearing benefits

assumptions in the financing plan due to the cost of actuarial services. Including the additional populations would further increase the costs of providing these services.

[14] This Table excludes non-resident Vermont employees, federal employees, and employees who have employer-sponsored coverage. See footnote above.

We also looked into covering hearing benefits. This benefit was modeled off of other public and commercial hearing coverage. It includes a $20 co-pay for hearing exams and covers one hearing aid every three years with no out of pocket costs. Since Medicaid already covers hearing exams and hearing aids, there is no additional Medicaid cost under GMC. Administrative expenses of 7 percent were assumed. Since this benefit would be administered with the medical benefit, this is likely a reasonable assumption. The following tables show the total annual cost by scenario. Each table shows the additional PMPM and cost of hearing coverage for all individuals in GMC, except for non-resident Vermont employees, federal employees, and employees who have employer-sponsored coverage.[15]

Table B-1.4 :Additional Cost of Hearing Coverage ($ Millions)[16]

Hearing Benefit Applies to Adults and Children	
Diagnostic	
Hearing Exam	limit 1 per year; $20 co-pay
DME	
Hearing Aids (includes fittings)	limit 1 per ear every 3 years; no cost to member
Estimated Cost Impact (includes Administrative Costs)	
Commercial	
"Premium" PMPM	$0.52
Estimated GMC Enrollees	307,414
Total Cost	$1,900,000
Medicaid	
"Premium" PMPM	$0.00
Estimated GMC Enrollees	-
Total Cost	$0
Total 2017 Cost	**$1,900,000**

[15] These cost analyses were developed prior to the Governor's final decisions and announcement not to pursue financing for GMC. These scenarios have not been updated to reflect the preferred population assumptions in the financing plan due to the cost of actuarial services. Including the additional populations would further increase the costs of providing these services.

[16] This Table excludes non-resident Vermont employees, federal employees, and employees who have employer-sponsored coverage. See footnote above.

As with dental and vision, we decided to focus our efforts on reducing out of pocket costs for major medical for the first phase of GMC and would not recommend hearing coverage at this time.

Long Term Care

Currently, Long Term Care (LTC), or nursing home level of care is provided to the Vermont Medicaid population and Medicare covers limited facility and home care services following a hospital stay. A cost estimate was developed assuming full LTC coverage would be extended to the entire Vermont population in 2017.

The cost estimate was based on the 2012 Vermont Health Care Expenditure data. The 2012 non-Medicaid and non-Medicare costs associated with home health and nursing home care were used as a starting point for the projection. It was assumed that the Medicare and Medicaid programs would continue to cover the LTC services in 2017 as they currently do. There is also an additional small amount of home health and nursing home costs that are covered by other Federal coverage in 2012. We assumed these services would also continue to be covered under their respective programs, and the costs were excluded from the projection. We also assumed that any Vermont resident that currently purchases private LTC coverage would drop this coverage and those costs would be transferred to the state.

Costs were trended from 2012 to 2017 using actual LTC trend from the VT expenditure analysis for the 2009 to 2012 time period.

Based on several LTC studies, a significant amount of LTC is either provided by unpaid caregivers or the need goes unmet. Cost estimates for the unpaid cost range between two and three times the current amounts paid for LTC. We applied an induced utilization factor to account for these costs. The studies we reviewed included the following:

- A November 2010 study produced by UMass Medical School's Center for Health Law and Economics and Office of Long-Term Support Studies on behalf of the Massachusetts Long-Term Care Financing Advisory Committee. This study indicated that $8.6 billion was paid for LTC costs in Massachusetts and that an additional $9.6 billion in cost was either unpaid or came from needs that went unmet. Applying this additional cost to the relative non-Medicaid and non-Medicare costs results in an induced utilization factor of about 5.0.[17]
- An AARP study titled "Valuing the Invaluable: 2011 Update" estimated that in 2009, $203 billion was paid for LTC costs nationally and an additional $405 billion was provided by unpaid care givers. Applying this additional cost to the relative non-Medicaid and non-Medicare costs results in an induced utilization factor of about 8.0.[18]

[17] http://www.mass.gov/eohhs/docs/eohhs/ltc/ma-ltcf-full.pdf
[18] http://assets.aarp.org/rgcenter/ppi/ltc/i51-caregiving.pdf

- An additional AARP study from September 2011 indicated that in 2004, 72% of older people living in the community received assistance exclusively from unpaid caregivers. This study further supports the above indication that the cost of unpaid care-giving is about two to three times the amount of total paid caregiving.[19]

Using the cost expenditure data, the trend assumption discussed above, and an induced utilization factor of 6.5, we developed a mid-level estimate of total 2017 Vermont LTC cost of $879 million. Given the uncertainty involved with estimating the cost of unpaid care, we also considered a lower induced utilization factor of 5.0 and a higher factor of 8.0. This range of induced utilization factors was based on the LTC studies referenced above. These factors produce low and high cost estimates of $660 million and $1,108 million. In addition, implementing a waiting period of 30 to 90 days could reduce the total cost estimate by 10% to 20%. The cost development is shown in the table below.

Table B-1.5: Long Term Services and Supports Cost Projection for Vermont under GMC 2017[20]

	Low	Mid	High
2012 Expenditure Analysis (Millions)	$109	$109	$109
PMPM Cost Trend	0.5%	1.0%	1.5%
Growth in Population that will use LTC	3.5%	3.5%	3.5%
Total Annual Trend	4.0%	4.5%	5.0%
Total Trend to 2017	1.217	1.246	1.276
2017 Trended Cost (Millions)	$132	$135	$139
Induced Utilization	5	6.5	8
Projected 2017 Cost (Millions)	**$660**	**$879**	**$1,108**

Again, we decided to focus our efforts on reducing out of pocket costs for major medical for the first phase of GMC and would not recommend that long term care coverage be included in Green Mountain Care.

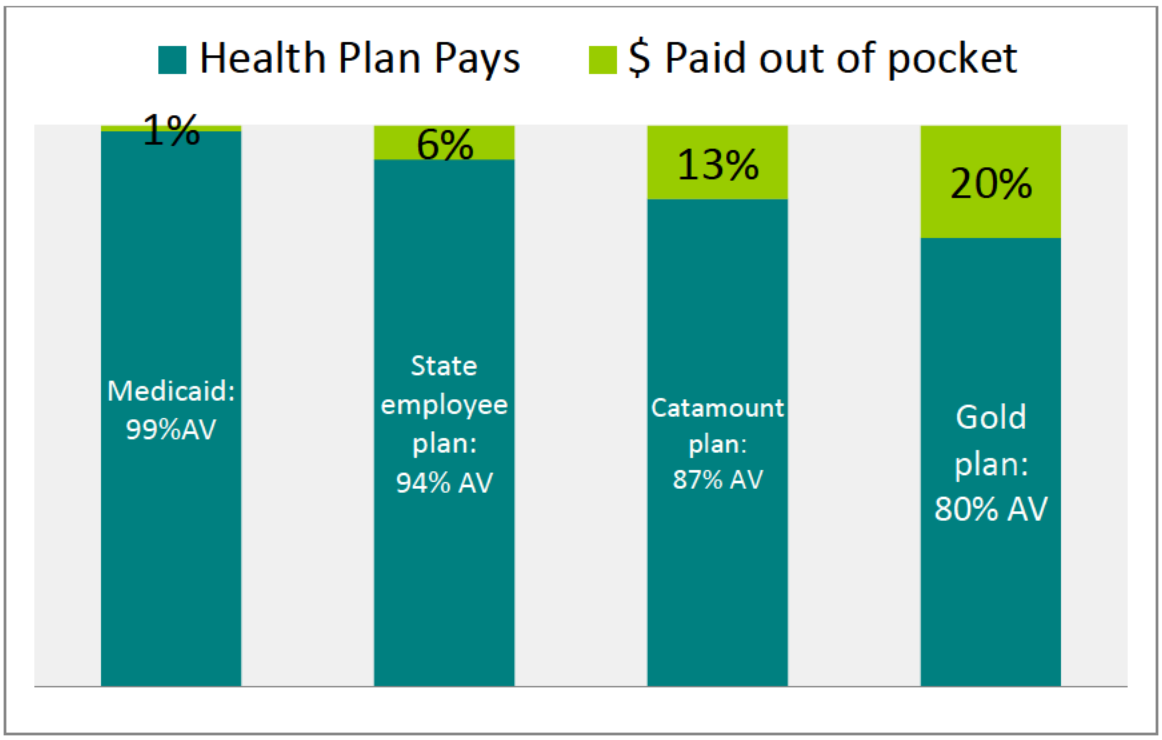
Cost-Sharing: Background

[19] http://www.longtermscorecard.org/~/media/Microsite/Files/Reinhard_raising_expectations_LTSS_scorecard_REPORT_WEB_v5.pdf

[20] This Table excludes non-resident Vermont employees, federal employees, and employees who have employer-sponsored coverage.

Cost-sharing is typically measured through actuarial value (AV). Actuarial value is the average amount as a percentage of total health care costs that a health plan would pay. The higher the AV, the less an individual would pay out of pocket in co-pays, deductibles, and co-insurance and the more paid for through public financing. For example, if GMC has an 80% AV, then on average 80% of the total cost is paid through public financing and the remaining 20% is paid through cost-sharing at the point of receiving a health service. Actual out of pocket costs for any individual or family will vary depending on their health care needs and utilization in any given year. The chart below shows examples of well-known plans and illustrates the difference between what the plan pays for and what the individual pays for health care services.

Figure B-1A. Examples of percentage of out of pocket spending with specific Vermont plan designs.



Under Act 48 of 2011, the legislature required that Green Mountain Care have at least an 80 percent actuarial value (AV) level, but also stated a preference for an 87 percent AV.[21] Act 48 also requires that we provide information to the Green Mountain Care Board about the cost of having no cost-sharing[22] and some plan designs which waive cost-sharing for certain types of services where there is evidence that greater utilization of these services would be beneficial to the health of the population. We also reviewed

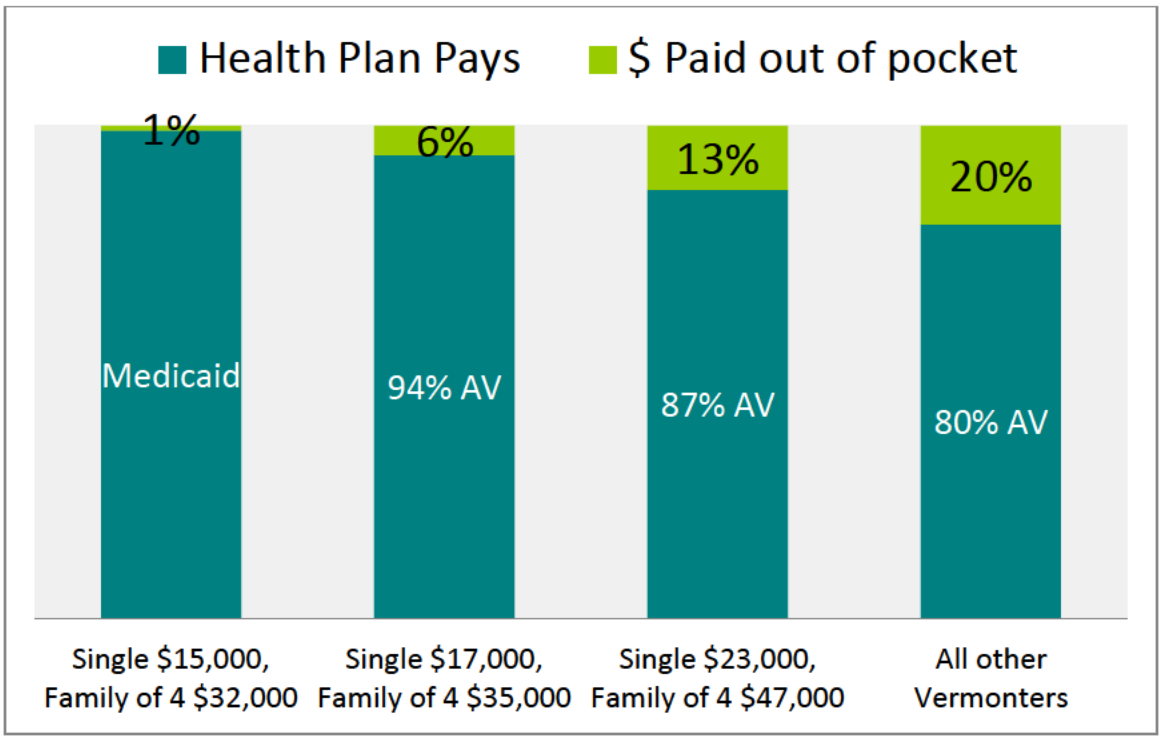
[21] 33 VSA 1822 and 1825.

[22] Relative cost of 100% AV plan is $201 million more than a 94% AV plan.

several health economic studies to determine what is currently known about the impacts of cost-sharing on the use of health services and international comparisons.[23]

Under federal law, GMC must also maintain more generous coverage of out of pocket costs for individuals who would currently receive cost-sharing reduction subsidies on a sliding scale or individuals who are on Medicaid.[24] The ACA's sliding scale of out of pocket costs is: Medicaid for individuals under 138% FPL; a 94 percent AV plan for individuals from 138% to 150% FPL; and an 87 percent AV plan for individuals from 150% to 200% FPL. The sliding scale affordability for out of pocket costs is illustrated in the figure below using 2014 income levels.

Figure B-1B. Examples of percentage of out of pocket spending using the ACA affordability sliding scale for out of pocket spending.[25]

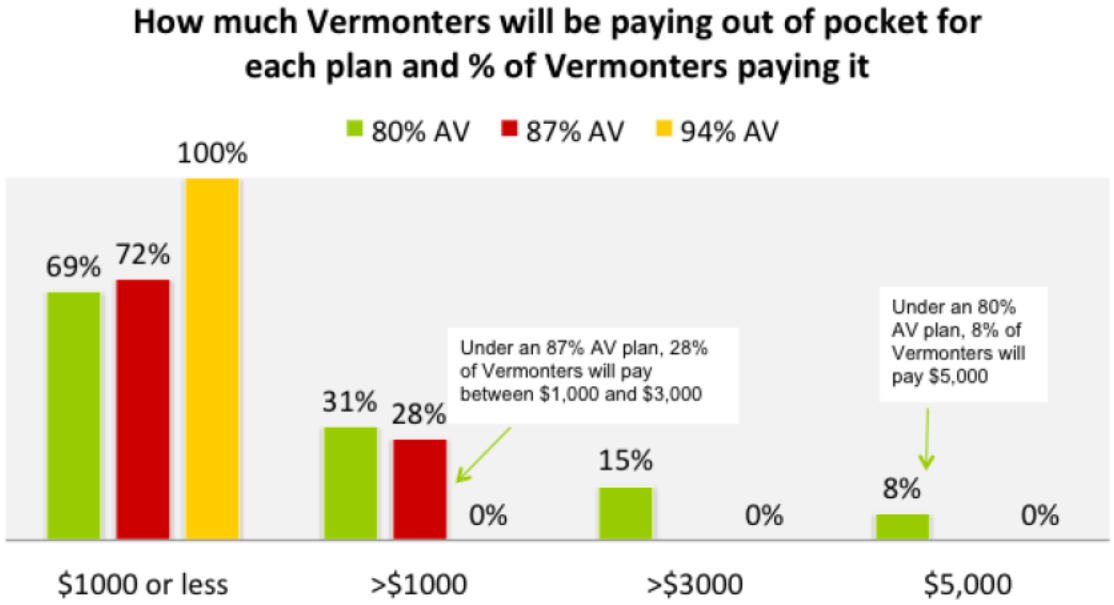


Another important consideration in plan design is how to distribute cost-sharing within the actuarial value level. For example, after the Affordable Care Act, most plans include a limitation on out of pocket costs (called the maximum out of pocket or MOOP). This represents the absolute total amount that any individual or family would pay in cost-sharing. The amount, however, must be viewed in relationship to health status, because young or healthy individuals use fewer health services and thus will never reach the type of spending capped by the MOOP due to their usage. The figure below illustrates

[23] See Appendices B-6 & B-7.
[24] ACA § 1332.
25 Figure uses 2014 FPL income levels.

what Vermonters would pay in out of pocket costs for a deductible plan at different AV levels.

Figure B-1C. Distribution of Out Of Pocket Costs in Vermont Population



Taking into consideration the maximum out of pocket and the Act 48 and ACA legal parameters, we looked at a variety of plans ranging in AV from 80% AV up to Medicaid and employing different structures, such as co-pay only plans, deductible plans, and high deductible health plans. We started with almost thirty plans[26] and narrowed those plans down to the following seven plans within a range of AV levels and payment mechanisms, illustrated in the matrix, below:

Table B-1.6. Plan design matrix using ACA affordability sliding scale and Act 48 parameters

	80% AV	87% AV	94% AV	Medicaid AV
Option 1: Co-pay plan	Out of pocket costs look too expensive	✓	State employee plan No deductible No MOOP	
Option 2: Deductible Plan	✓	Catamount equivalent	✓	
Option 3: HDHP	✓ ✓	Does not meet HDHP requirements	Does not meet HDHP requirements	

[26] See appendix B-4

From here, we narrowed the plan designs down even further to four plan designs: a deductible and co-pay plan at 94 percent AV level, a deductible plan at the 87 percent AV level; and an innovative HDHP plan at the 80 percent AV level.[27] The co-pay plan at the 94 percent AV level is the SelectCare state employee plan modified to comply with federal requirements, the deductible plan at the 87 percent AV level is a modified design of Catamount Health, and the HDHP plan is an innovative plan design based on the economic research available.

It is important to note that in all 4 plan design options, preventive services are provided without any cost-sharing and mental health primary care services are provided with the same co-payments as for primary care health services.

The 94% AV co-pay/state employee plan is designed to only have co-payments. We have added a maximum out of pocket, which the state employee plan does not have, in order to comply with federal requirements and to ensure that Vermonters who use a lot of health services have financial protections.

The 94% AV deductible plan has a low deductible and maximum out of pocket. This plan was designed as a comparison point to the 94% AV co-pay/state employee plan to help determine which plan would provide the most comprehensive coverage to the Vermonters who need it most.

With the 87% AV plan we used a deductible plan similar to what was used under Catamount Health. The deductible plan looks like a typical insurance plan and reflects the kind of coverage with which many Vermonters are already familiar.

Under the 80% AV plan, the design is compliant with current Internal Revenue Service regulations for high-deductible health plans and may be paired with a health savings account (HSA). Health savings accounts are a tax-preferred vehicle that allows an individual to save money toward health care expenses without paying federal and state tax on that amount. This plan design has three main elements to it. The first is a high deductible health plan (HDHP). The second is an HSA for individuals who are not eligible for subsidies or a notional account for individuals who are eligible for cost-sharing subsidies, which can be applied against the annual deductible and copayments. The notional account could be funded by the state to achieve the reduced cost-sharing required by the ACA. The third element is a maximum out of pocket limit (MOOP), which serves to limit subscribers' financial exposure by capping total household cost-sharing per year. The following picture illustrates how cost-sharing is spread across these elements.

[27] See Appendix B-2.

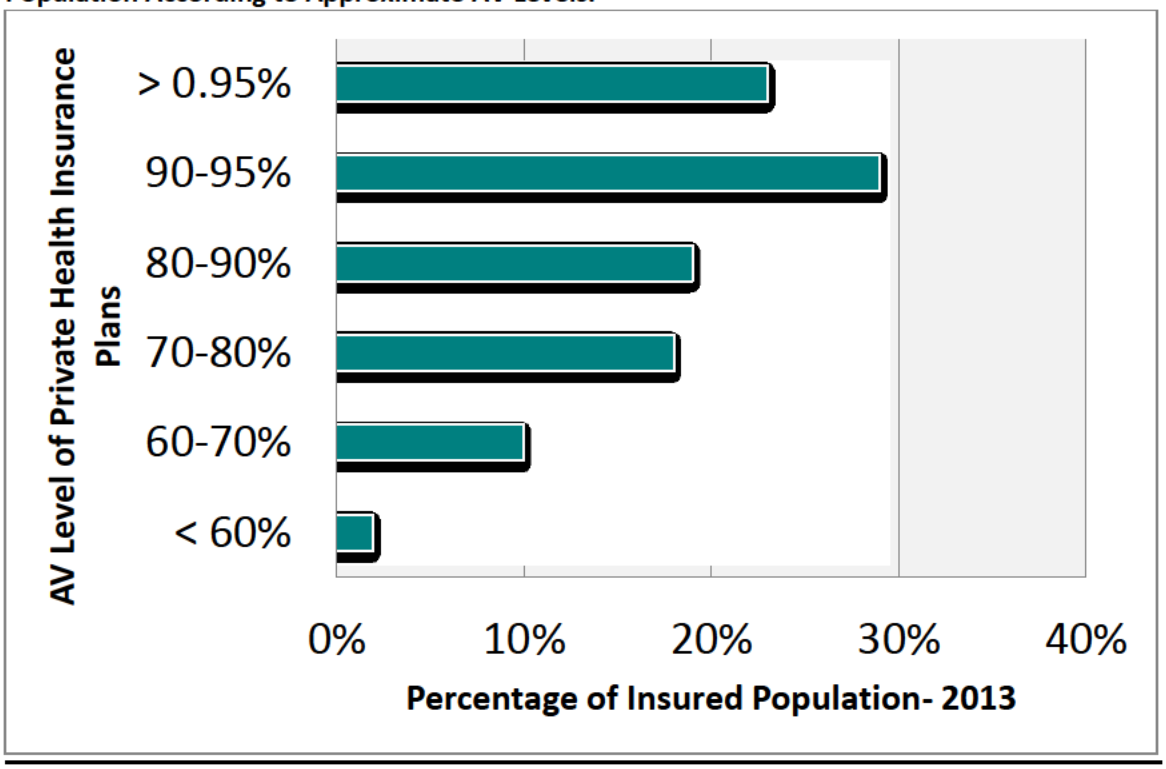
Cost-Sharing: Recommendation

Once the plans were narrowed down, we examined the ACA and Act 48 legal parameters in conjunction with operational and administrative simplicity, looked at the current market to determine where most Vermonters are today, and weighed issues of equity. As a result, we determined that the best level of coverage for Vermonters would be at the 94 percent AV level.

The fact that the ACA requires a sliding scale of affordability for out of pocket costs means that Vermont would either have to: have different plan designs to meet all the applicable AV levels; have one plan design and supplement that plan design through accounts or some other mechanism to meet the applicable AV levels; or bring all Vermonters not eligible for Medicaid up to the highest AV level, ensuring one plan design and administrative simplification. When faced with these options, we chose the 94 percent AV level to ensure operational and administrative simplicity while meeting all legal requirements.

We also chose the 94 percent AV level because when we looked at covered Vermonters who were not in Medicaid or Medicare, over 50% of Vermonters had a plan above 90 percent AV.

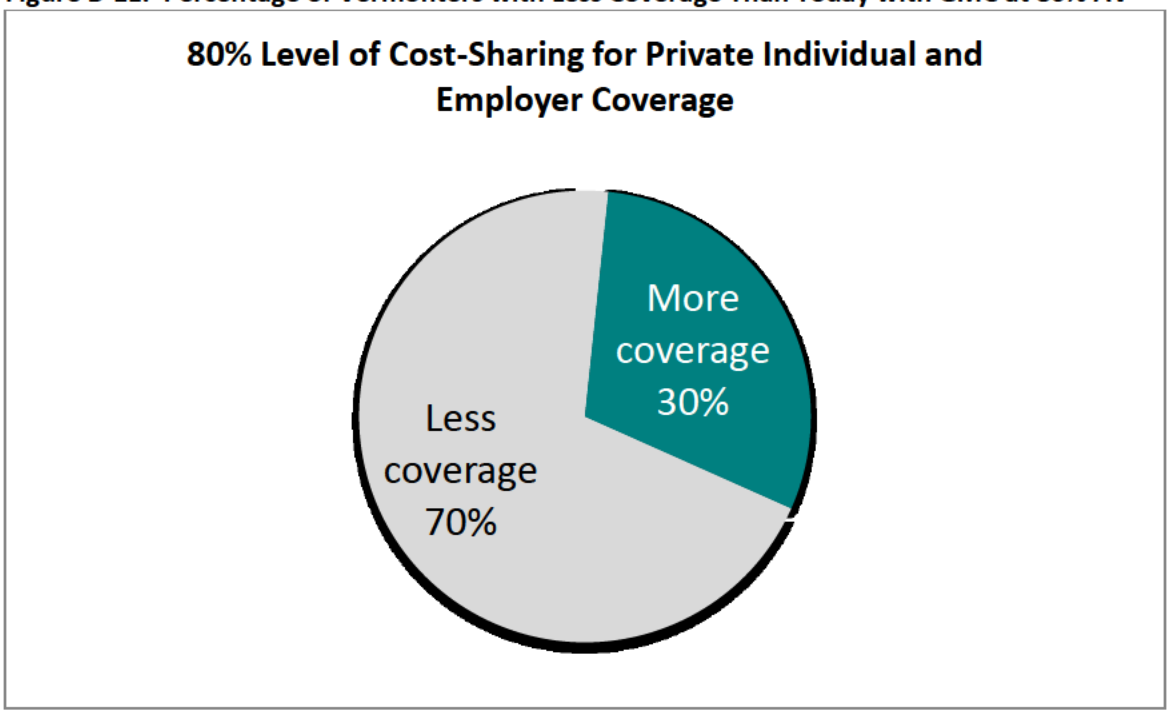
Figure B-1D. Vermont Private Health Insurance Coverage in 2013 and Percentage of Population According to Approximate AV Levels.



If we had recommended a plan that was less than 94 percent AV, many Vermonters would have less coverage of out of pocket costs than they do today.

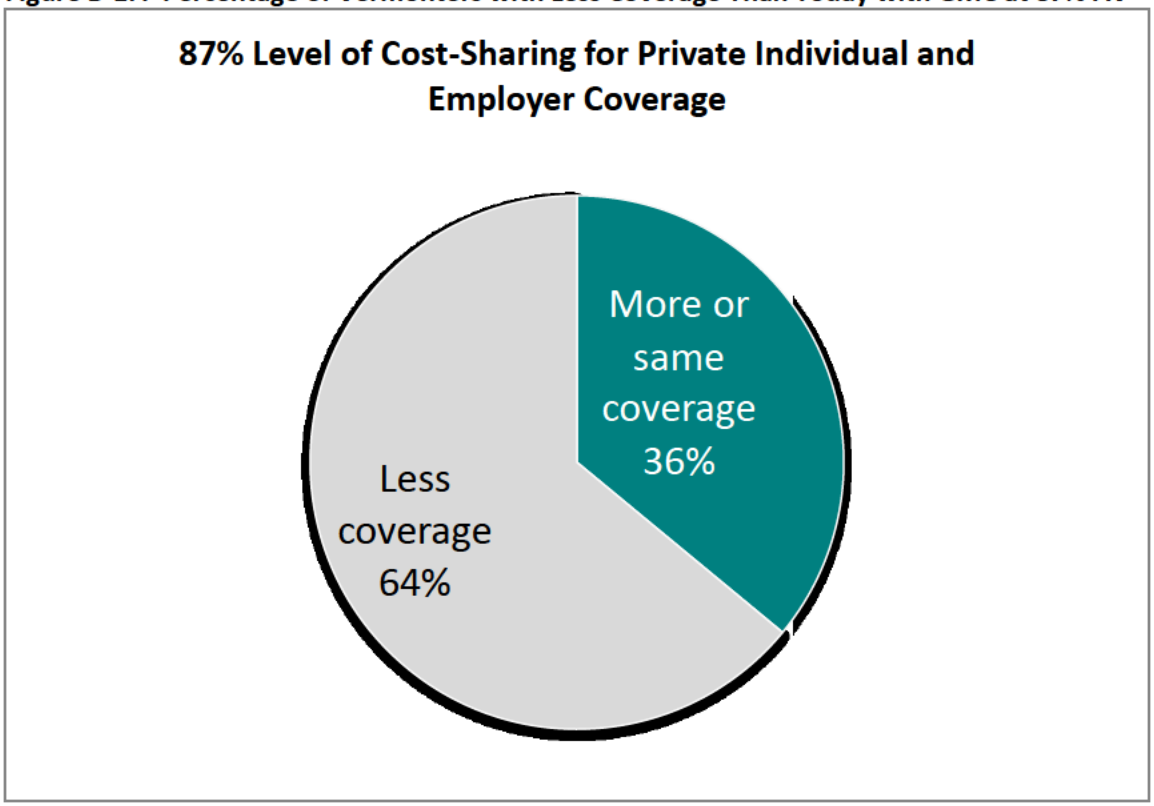
The following Figures illustrate the percentage of Vermonters who would be worse off at lower AV levels. The first Figure illustrates that 70% of Vermonters with employer sponsored insurance or who purchase through VHC today would be worse off if GMC had an AV of 80%. Only 30% would be better off with GMC at an 80% AV than today.

Figure B-1E. Percentage of Vermonters with Less Coverage Than Today with GMC at 80% AV



The second Figure illustrates that 64% of Vermonters with employer sponsored insurance or who purchase through VHC today would be worse off if GMC had an AV of 87%.

Figure B-1F. Percentage of Vermonters with Less Coverage Than Today with GMC at 87% AV



Finally, we also considered issues of equity. Act 48 requires consideration of the costs for Vermonters who need chronic care. At a low AV level, everyone would pay less in taxes, but people needing medical care would pay more in out of pocket costs than healthier people. A 94 percent AV level helps alleviate this disparity between the sick and the healthy and ensures that more of the costs are paid through the income-sensitive public premium.

Green Mountain Care - Secondary Coverage

Act 48 anticipates that Green Mountain Care will provide secondary coverage to Vermonters who have another source of primary health coverage, such as seniors who have Medicare. Until primary benefits and cost-sharing is finalized under Green Mountain Care, it is difficult to finalize secondary coverage. Secondary coverage typically wraps around the primary coverage plan for covered services and for cost-sharing. Additional analysis is needed after the primary benefits are determined in order to design secondary coverage for those on Medicare and covered by military insurance.

Because of this we recommend that secondary coverage be a later phase of GMC, but talk about some of the considerations below.

Medicare and Green Mountain Care

We examined a number of approaches for providing supplemental coverage for Vermonters to have Medicare as their primary coverage. Three options for expanding coverage were presented in the 2013 Green Mountain Care report authored by the University of Massachusetts and Wakely Consulting.[28] It is important to note that none of these options reduce Medicare benefits or otherwise harm Medicare coverage.

All of our models of GMC to date have continued the role of Medicare as the primary payer for the elderly and disabled and assumed that Medicare Supplemental insurance ("Medigap" policies) will continue to be available as required by federal law.

Maintaining a supplemental insurance market creates complexity in the system for health care providers and increases the overall administrative costs needed for the system to function. While the state may not eliminate this market, we have looked at how GMC might be attractive to seniors in lieu of supplemental policies.

It is important to keep in mind three important aspects of Medicare:

1) Seniors will always be enrolled in Medicare for primary coverage, just like today. Also, seniors will always have the choice of supplemental policies, Medicare Advantage, and Medicare Part D policies.

2) The fundamental flaw with Medicare cost-sharing has been the underinsurance for prescription drugs and uncapped Part B (hospital) liability facing seniors. When combined with the large amount of spending needed under Medicare Part D to hit the catastrophic coverage, this is a huge out of pocket risk for the elderly. The limitations of Part D were the impetus for Vermont to maintain its prescription drug coverage for seniors when Part D was implemented. An additional benefit of the ACA is the closing of the Part D "donut hole" in 2019. Out of pocket spending for Part B will remain as the major flaw in Medicare and necessitate many seniors purchasing supplemental coverage.

3) Other than drug coverage and the out of pocket maximum, Medicare supplemental coverage induces utilization that likely has relatively little value in improving health, and the supplemental market is relatively inefficient because of high administrative costs of administering these policies.[29]

We modeled one additional potential policy option for supplementing Medicare coverage through GMC, which was to provide a sliding-scale maximum out of pocket limit. Medicare does not currently have a limit on out of pocket costs and providing this

[28] This report is available here: http://hcr.vermont.gov/public_engagement/benefits. Medicare is discussed in detail in Appendices 6 and 7.

[29] This is illustrated by the Medical Loss Ratio for these plans.

limit through GMC would ensure that those on Medicare will have the same limits as all other Vermonters. A spreadsheet detailing this analysis and the costs is attached as Appendix B-10.

GMC Will Integrate Existing Coverage

The state currently provides wrap-around coverage for Medicare through three programs:

- Medicaid provides additional benefits and reduced cost-sharing for seniors whose income is at the poverty level, also commonly referred to as "Dual Eligibles"
- Medicaid provides additional coverage through Medicare "buy-in" programs, also called Service Limited Medicare Beneficiary (SLMB), Qualified Medicare Beneficiary (QMB), and Qualified Individual (QI1) programs. These programs help low-income Medicare beneficiaries who are not eligible for Medicaid pay all or some of their Medicare cost, including premiums, co-payments, and deductibles. The current income limit for these programs are
    - 0-100% FPL for QMB, which pays for Medicare premiums and out of pocket costs
    - 100-120% FPL for SLMB, which covers Medicare Part B premiums
    - 120-135% FPL for QI1, which covers Medicare Part B premiums
- Medicaid provides a pharmacy program, which wrap around Medicare Part D, called VPharm

The existing programs would be integrated into GMC in the following ways:

- Seniors who are eligible for both Medicare and Medicaid ("Dual Eligibles") would continue to have coverage consistent with current coverage and their coverage would continue to be funded with Medicaid-funds. These seniors will see no change over time.
- Seniors currently eligible for SLMB, QMB will, and QI also see no change.
- Seniors with VPharm coverage will see no change, except that VPharm premiums are eliminated to reduce administrative expenses from having both a tax and a premium system just for VPharm.

Green Mountain Care and the Supplemental Market

While working on plan designs, we also considered the effects the plan design might have on a supplemental market. Supplemental health insurance policies are typically designed to add on more comprehensive health coverage. They "wrap around" and complement basic health insurance either through covering more services or covering out of pocket costs.[30] An example of supplemental coverage of services currently available is adult dental and vision care. An example of supplemental health insurance

[30] Insurance Basics. Supplemental Policies. www.healthcare.gov

covering out of pocket costs is a Medicare supplemental policy known as "Medigap" for persons with Medicare. A Medigap policy is health insurance sold by private insurance companies to fill the "gaps" in Medicare coverage and helps pay some of the health care costs that Medicare does not cover.[31]

While supplemental policies can fill in gaps in coverage, they can also lead some consumers to pay for more protection than is necessary. Some consumers are "over-insured" and are paying for coverage they are unlikely to use. Supplemental insurance offerings should be tailored to complement comprehensive health coverage and to offer coverage for services that are beyond the scope of the comprehensive plan, but are not duplicative or unnecessary.

The level of supplemental insurance should correspond with the degree of coverage provided by GMC. If GMC coverage is basic, there is a stronger likelihood that there will be a larger supplemental insurance market presence. Because the covered services for GMC are set at a level commonly found in today's private insurance markets, it is likely that there will be a supplemental market limited to dental, vision, and long-term care. These markets exist today and we would expect them to continue.

Of greater concern would be a new market of supplemental insurance for cost-sharing, similar to the Medicare "Medigap" insurance products currently available. As discussed earlier, this type of market adds administrative complexity and would have the potential to shift unnecessary costs to the state. We took this into consideration when choosing the 94% AV plan design. It was determined that a plan design with a high AV would help avoid the need for a supplemental cost-sharing insurance market, which would only add complexity and cost to the system.

Conclusion

Under Green Mountain Care, many components of the benefits would stay the same:

- Preventive care is 100% covered without any cost,
- The same medical services are covered for the majority of Vermonters,
- Vermonters can still see their doctor,
- Vermonters can still receive care out of state when traveling or if their primary coverage is currently in a border state,
- Medicare benefits remain the same, because Medicare remains the primary coverage,
- Medicaid benefits remain the same.

The biggest potential change for some Vermonters is what they pay when they seek care. To ensure that Vermonters have access to comprehensive and affordable care, we

[31] Your Medicare Coverage Choices. http://www.medicare.gov/navigation/medicare-basics/coverage-choices.aspx

would recommend a 94 percent AV plan covering all of the essential health benefits under the ACA.

Appendix B-2. Recommended GMC Cost-Sharing Designs

Appendix B-2

VT Plan Options

Current Proposed Plan Designs - High Level Comparison File

December 16, 2014

Plan Type	State Plan - Original	State Plan - Revised	Catamount - Original	Catamount - Revised	Catamount - Subsidy Plan	HDHP-Recommended 80%
Actuarial Value		93.5%		87.0%	93.5%	80% Base (83%-94% subsidies)
Deductible	$0 - Med; $25 - Rx	$0 - Med, $75 - Rx (non-generics)	$500 - Med; $0 - Rx	$500 - Med; $0 - Rx	$100 - Med; $0 - Rx	$1,300 - IP $1,300 - Non-IP
MOOP	unlimited - Med; $775 - Rx (non-preferred brand excluded)	$5,000 - Med; $1,300 - Rx	$1,050 - Med; $1,250 - Rx	$1,600 - Med; $1,250 - Rx	$650 - Med; $200 - Rx	$2,100
Account Funding	N/A	N/A	N/A	N/A	N/A	80% - $0 83% - $200 87% - $500 94% - $1,200
Member Cost Sharing						
Inpatient Admission (non-MH/SA)	$250	$300	20%	20%	20%	$250
Inpatient Admissions MH/SA	$0	$0	20%	20%	20%	$250
Outpatient MH/SA	$0	$0	20%	20%	20%	$50
Outpatient Surgery	$0	$150	20%	20%	20%	$75
ER Visit	$50	$75	20%	20%	20%	$75
Ambulance	$0	$0	20%	20%	20%	$15
DME	$0	$0	20%	20%	20%	$15
Lab/X-Rays	$0	$0	20%	20%	20%	$15
PCP Visit	$20	$25	$10	$10	$10	$5
SPC Visit	$20	$35	$10	$20	$20	$15
Generic	10%	$10	$10	$10	$5	$5
Brand	20%	20%	$35	$35	$15	$15
Non-Brand	40%	40%	$35	$55	$30	$40

DEDUCTIBLE APPLIES TO SHADED CELLS

Red is a change from the original plan (state and Catamount only)

Notes:

1 Plan Designs are based on current estimates of allowed costs under the "base" scenario for GMC for the various plans.

2 To the extent the scenarios change, the plan designs will also need to be updated. Plan designs should be further refined closer to the implementation of GMC to ensure the cost sharing is as close as possible to the targeted actuarial value.

3 The HDHP Scenario 1 is a high level estimate. Neither the federal AVC or Wakely's model can accommodate the double deductible. If this plan is selected further analysis should be completed to more accurate determine the appropriate cost sharing for the plan.

4 Actual actuarial values depend on the members who are covered under GMC and the services these members receive. The resulting actuarial value could vary from the target, possibly significantly.

Vermont 2017 Plan Design Options
DRAFT - For illustrative and discussion purposes only

	State Plan - Original Copay 94%			State Plan - Revised Copay 94%		
Wakely AV	92.6%			93.5%		
Federal AV (2016 Draft)	N/A			92.4%		
Deductible	*In-Network*	*Out-of-Network*	*Out-of-Area*	*In-Network*	*Out-of-Network*	*Out-of-Area*
Individual	$0	N/A	N/A	$0	N/A	N/A
Family	$0	N/A	N/A	$0	N/A	N/A
MOOP	*In-Network*	*Out-of-Network*	*Out-of-Area*	*In-Network*	*Out-of-Network*	*Out-of-Area*
Individual	N/A	N/A	N/A	$5,000	N/A	N/A
Family	N/A	N/A	N/A	$10,000	N/A	N/A
Medical/Rx Deductibles Combined?	No			No		
Medical/Rx MOOPs Combined?	No			No		
Inpatient Hospital	**Plan Coinsurance**	**Copayments**	**Deductible Applies?**	**Plan Coinsurance**	**Copayments**	**Deductible Applies?**
Medical		$ 250.00	N		$ 300.00	N
Surgical		$ 250.00	N		$ 300.00	N
Maternity		$ 250.00	N		$ 300.00	N
Mental Health	100%		N	100%		N
Chemical Dependency	100%		N	100%		N
Skilled Nursing Facility	100%		N	100%		N
Outpatient Hospital						
Emergency Room		$ 50.00	N		$ 75.00	N
Ambulatory Surgery	100%		N		$ 150.00	N
Radiology	100%		N	100%		N
Laboratory	100%		N	100%		N
Maternity Visits	100%		N	100%		N
Mental Health	100%		N	100%		N
Chemical Dependency	100%		N	100%		N
Other	100%		N	100%		N
Inpatient Physician						
Medical/Surgical	100%		N	100%		N
Mental Health	100%		N	100%		N
Chemical Dependency	100%		N	100%		N
Maternity	100%		N	100%		N
Outpatient Physician						
Physician Office Visits		$ 20.00	N		$ 25.00	N
Specialist Office Visits		$ 20.00	N		$ 35.00	N
Mental Health		$ 20.00	N		$ 25.00	N
Chemical Dependency		$ 20.00	N		$ 25.00	N
Other		$ 20.00	N		$ 25.00	N
Preventive Care						
Physical Exams. Etc.	100%		N	100%		N
Immunizations	100%		N	100%		N
Screenings	100%		N	100%		N
Well Childcare	100%		N	100%		N
Outpatient Miscellaneous						
Allergy		$ 20.00	N		$ 25.00	N
Ambulance	100%		N	100%		N
Chemotherapy	100%		N	100%		N
Chiropractor		$ 20.00	N		$ 25.00	N
Dialysis	100%		N	100%		N
DME	100%		N	100%		N
Hearing	100%		N	100%		N
Hearing Aids	100%		N	100%		N
Home Health Care	100%		N	100%		N
Laboratory	100%		N	100%		N
Physical Therapy		$ 20.00	N		$ 25.00	N
Podiatry Services	100%		N	100%		N
Radiology/X-Ray	100%		N	100%		N
Speech		$ 20.00	N		$ 25.00	N
Rx Inputs						
	Retail	**Mail Order**		**Retail**	**Mail Order**	
Annual Deductibles	$25	$25		$75	$75	
Annual MOOP	$775			$1,300		
Deductible/MOOP Applies?						
Generic	Y/Y			N/Y		
Brand Formulary	Y/Y			Y/Y		
Brand Non Formulary	Y/N			Y/Y		
Specialty	Y/N			Y/Y		
Member Coinsurance	**Retail**	**Mail Order**		**Retail**	**Mail Order**	
Generic	10%	10%				
Brand Formulary	20%	20%		20%	20%	
Brand Non Formulary	40%	40%		40%	40%	
Specialty	40%	40%		40%	40%	
Member Copay	**Retail**	**Mail Order**		**Retail**	**Mail Order**	
Generic				$ 10.00	$ 25.00	
Brand Formulary						
Brand Non Formulary						
Specialty						

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	Catamount Plan - Original Deductible 87%			Catamount Plan - Revised Deductible 87%			Catamount Plan - Revised Deductible 94% Subsidy		
Wakely AV	88.5%			87.0%			93.5%		
Federal AV (2016 Draft)	89.4%			87.5%			94.1%		
Deductible	*In-Network*	*Out-of-Network*	*Out-of-Area*	*In-Network*	*Out-of-Network*	*Out-of-Area*	*In-Network*	*Out-of-Network*	*Out-of-Area*
Individual	$500	N/A	N/A	$500	N/A	N/A	$0	N/A	N/A
Family	$1,000	N/A	N/A	$1,000	N/A	N/A	$0	N/A	N/A
MOOP	*In-Network*	*Out-of-Network*	*Out-of-Area*	*In-Network*	*Out-of-Network*	*Out-of-Area*	*In-Network*	*Out-of-Network*	*Out-of-Area*
Individual	$1,050	N/A	N/A	$1,600	N/A	N/A	$650	N/A	N/A
Family	$2,100	N/A	N/A	$3,200	N/A	N/A	$1,300	N/A	N/A
Medical/Rx Deductibles Combined?	No			No			No		
Medical/Rx MOOPs Combined?	No			No			No		
	Plan Coinsurance	**Copayments**	**Deductible Applies?**	**Plan Coinsurance**	**Copayments**	**Deductible Applies?**	**Plan Coinsurance**	**Copayments**	**Deductible Applies?**
Inpatient Hospital									
Medical	80%	$ -	Y	80%	$ -	Y	80%	$ -	Y
Surgical	80%	$ -	Y	80%	$ -	Y	80%	$ -	Y
Maternity	80%	$ -	Y	80%	$ -	Y	80%	$ -	Y
Mental Health	80%	$ -	Y	80%	$ -	Y	80%	$ -	Y
Chemical Dependency	80%	$ -	Y	80%	$ -	Y	80%	$ -	Y
Skilled Nursing Facility	80%	$ -	Y	80%	$ -	Y	80%	$ -	Y
Outpatient Hospital									
Emergency Room	80%	$ -	Y	80%	$ -	Y	80%	$ -	Y
Ambulatory Surgery	80%	$ -	Y	80%	$ -	Y	80%	$ -	Y
Radiology	80%	$ -	Y	80%	$ -	Y	80%	$ -	Y
Laboratory	80%	$ -	Y	80%	$ -	Y	80%	$ -	Y
Maternity Visits	80%	$ -	Y	80%	$ -	Y	80%	$ -	Y
Mental Health	80%	$ -	Y	80%	$ -	Y	80%	$ -	Y
Chemical Dependency	80%	$ -	Y	80%	$ -	Y	80%	$ -	Y
Inpatient Physician									
Medical/Surgical	80%	$ -	Y	80%	$ -	Y	80%	$ -	Y
Mental Health	80%	$ -	Y	80%	$ -	Y	80%	$ -	Y
Chemical Dependency	80%	$ -	Y	80%	$ -	Y	80%	$ -	Y
Maternity	80%	$ -	Y	80%	$ -	Y	80%	$ -	Y
Outpatient Physician									
Physician Office Visits	0%	$ 10.00	N	0%	$ 10.00	N	0%	$ 10.00	N
Specialist Office Visits	0%	$ 10.00	N	0%	$ 20.00	N	0%	$ 20.00	N
Mental Health	0%	$ 10.00	N	0%	$ 10.00	N	0%	$ 10.00	N
Chemical Dependency	0%	$ 10.00	N	0%	$ 10.00	N	0%	$ 10.00	N
Preventive Care									
Physical Exams. Etc.	100%	$ -	N	100%	$ -	N	100%	$ -	N
Outpatient Miscellaneous									
Ambulance	80%	$ -	Y	80%	$ -	Y	80%	$ -	Y
Dialysis	80%	$ -	Y	80%	$ -	Y	80%	$ -	Y
DME	80%	$ -	Y	80%	$ -	Y	80%	$ -	Y
Physical Therapy	80%	$ -	Y	80%	$ -	Y	80%	$ -	Y
Radiology/X-Ray	80%	$ -	Y	80%	$ -	Y	80%	$ -	Y
Rx Inputs									
	Retail	**Mail Order**		**Retail**	**Mail Order**		**Retail**	**Mail Order**	
Annual Deductibles	$0	$0		$0	$0		$0	$0	
Annual MOOP	$1,250			$1,250			$200		
Deductible/MOOP Applies?									
Generic	N/Y			N/Y			N/Y		
Brand Formulary	N/Y			N/Y			N/Y		
Brand Non Formulary	N/Y			N/Y			N/Y		
Specialty	N/Y			N/Y			N/Y		
Member Coinsurance	**Retail**	**Mail Order**		**Retail**	**Mail Order**		**Retail**	**Mail Order**	
Generic	0%	0%		0%	0%		0%	0%	
Brand Formulary	0%	0%		0%	0%		0%	0%	
Brand Non Formulary	0%	0%		0%	0%		0%	0%	
Specialty	0%	0%		0%	0%		0%	0%	
Member Copay	**Retail**	**Mail Order**		**Retail**	**Mail Order**		**Retail**	**Mail Order**	
Generic	$ 10.00	$ 20.00		$ 10.00	$ 25.00		$ 5.00	$ 12.50	
Brand Formulary	$ 35.00	$ 70.00		$ 35.00	$ 87.50		$ 15.00	$ 37.50	
Brand Non Formulary	$ 55.00	$ 110.00		$ 55.00	$ 137.50		$ 30.00	$ 75.00	
Specialty	$ 55.00	$ 110.00		$ 55.00	$ 137.50		$ 30.00	$ 75.00	

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	80% Recommended HDHP 80%		
Wakely AV	**79.9%**		
Federal AV (2016 Draft)	**79.7%**		
Deductible	*In-Network*	*Out-of-Network*	*Out-of-Area*
Individual	$1300 IP/$1300 Non-IP	N/A	N/A
Family	$2600 IP/$2600 Non-IP	N/A	N/A
MOOP	*In-Network*	*Out-of-Network*	*Out-of-Area*
Individual	$2,100	N/A	N/A
Family	$4,200	N/A	N/A
Medical/Rx Deductibles Combined?	Yes		
Medical/Rx MOOPs Combined?	Yes		

	Plan Coinsurance	Copayments	Deductible Applies?
Inpatient Hospital			
Medical		$ 250.00	Y
Surgical		$ 250.00	Y
Maternity		$ 250.00	Y
Mental Health		$ 250.00	Y
Chemical Dependency		$ 250.00	Y
Skilled Nursing Facility		$ 75.00	Y
Outpatient Hospital			
Emergency Room		$ 75.00	Y
Ambulatory Surgery		$ 75.00	Y
Radiology		$ 50.00	Y
Laboratory		$ 50.00	Y
Maternity Visits		$ 50.00	Y
Mental Health		$ 50.00	Y
Chemical Dependency		$ 50.00	Y
Other		$ 50.00	N
Inpatient Physician			
Medical/Surgical	100%		Y
Mental Health	100%		Y
Chemical Dependency	100%		Y
Maternity	100%		Y
Outpatient Physician			
Physician Office Visits		$ 5.00	N
Specialist Office Visits		$ 15.00	N
Mental Health		$ 5.00	N
Chemical Dependency		$ 5.00	N
Other		$ 15.00	N
Preventive Care			
Physical Exams. Etc.	100%	$ -	N
Immunizations	100%	$ -	N
Screenings	100%	$ -	N
Well Childcare	100%	$ -	N
Outpatient Miscellaneous			
Ambulance		$ 15.00	Y
Dialysis		$ 15.00	Y
DME		$ 15.00	Y
Physical Therapy		$ 15.00	Y

Rx Inputs

	Retail	Mail Order
Annual Deductibles	$0	$0

	Retail	Mail Order
Member Coinsurance		
Generic	0%	0%
Brand Formulary	0%	0%
Brand Non Formulary	0%	0%
Specialty	0%	0%

	Retail	Mail Order
Member Copay		
Generic	$ 5.00	$ 15.00
Brand Formulary	$ 15.00	$ 45.00
Brand Non Formulary	$ 40.00	$ 120.00
Specialty	$ 40.00	$ 120.00

Appendix B-3. Vermont Essential Health Benefits Detail

VERMONT EHB BENCHMARK PLAN

SUMMARY INFORMATION

Plan Type	Plan from largest small group product, Health Maintenance Organization
Issuer Name	The Vermont Health Plan, LLC
Product Name	CDHP-HMO
Plan Name	BlueCare, The Vermont Health Plan, LLC, CDHP
Supplemented Categories (Supplementary Plan Type)	• Pediatric Oral (State CHIP) • Pediatric Vision (FEDVIP)
Habilitative Services Included Benchmark (Yes/No)	No
Habilitative Services Defined by State (Yes/No)	No

BENEFITS AND LIMITS

Row Number	A Benefit	B Covered (Required): Is benefit Covered or Not Covered	C Benefit Description (Required if benefit is Covered): Enter a Description, it may be the same as the Benefit name	D Quantitative Limit on Service? (Required if benefit is Covered): Select "Yes" if Quantitative Limit applies	E Limit Quantity (Required if Quantitative Limit is "Yes"): Enter Limit Quantity	F Limit Units (Required if Quantitative Limit is "Yes"): Select the correct limit units	G Other Limit Units Description (Required if "Other" Limit Unit): If a Limit Unit of "Other" was selected in Limit Units, enter a description	H Minimum Stay (Optional): Enter the Minimum Stay (in hours) as a whole number	I Exclusions (Optional): Enter any Exclusions for this benefit	J Explanation: (Optional) Enter an Explanation for anything not listed	K Does this benefit have additional limitations or restrictions? (Required if benefit is Covered): Select "Yes" if there are additional limitations or restrictions that need to be described
1	**Primary Care Visit to Treat an Injury or Illness**	Covered	Primary Care Visit to Treat an Injury or Illness	No							No
2	**Specialist Visit**	Covered	Specialist Visit	No							No
3	**Other Practitioner Office Visit (Nurse, Physician Assistant)**	Covered	Other Practitioner Office Visit (Nurse, Physician Assistant)	No							No
4	**Outpatient Facility Fee (e.g., Ambulatory Surgery Center)**	Covered	Outpatient Facility Fee (e.g., Ambulatory Surgery Center)	No							No
5	**Outpatient Surgery Physician/Surgical Services**	Covered	Outpatient Surgery Physician/Surgical Services	No							Yes
6	**Hospice Services**	Covered	Hospice Services	No						Must meet hospice requirements for benefit eligibility.	Yes
7	**Non-Emergency Care When Traveling Outside the U.S.**	Covered	Non-Emergency Care When Traveling Outside the U.S.	No					Excluded UNLESS member qualifies for coverage due to sabbatical or attending college in a foreign country.		No
8	**Routine Dental Services (Adult)**	Not Covered									
9	**Infertility Treatment**	Not Covered								Refer to Infertility Drug limitation in Generic, Preferred and Non-Preferred Prescription Drug categories.	
10	**Long-Term/ Custodial Nursing Home Care**	Not Covered									
11	**Private-Duty Nursing**	Covered	Private-Duty Nursing	Yes	2000	Other	Covered up to $2,000 per plan year			Requires prior approval and recertification of treatment plan every 60 days.	No

Row Number	A Benefit	B Covered (Required): Is benefit Covered or Not Covered	C Benefit Description (Required if benefit is Covered): Enter a Description, it may be the same as the Benefit name	D Quantitative Limit on Service? (Required if benefit is Covered): Select "Yes" if Quantitative Limit applies	E Limit Quantity (Required if Quantitative Limit is "Yes"): Enter Limit Quantity	F Limit Units (Required if Quantitative Limit is "Yes"): Select the correct limit units	G Other Limit Units Description (Required if "Other" Limit Unit): If a Limit Unit of "Other" was selected in Limit Units, enter a description	H Minimum Stay (Optional): Enter the Minimum Stay (in hours) as a whole number	I Exclusions (Optional): Enter any Exclusions for this benefit	J Explanation: (Optional) Enter an Explanation for anything not listed	K Does this benefit have additional limitations or restrictions? (Required if benefit is Covered): Select "Yes" if there are additional limitations or restrictions that need to be described
12	**Routine Eye Exam (Adult)**	Covered	Routine Eye Exam (Adult)	Yes	1	Other	1 routine eye exam per calendar year		Does not cover the evaluation and fitting of contact lenses or other supplemental tests, routine eye care, eye exercises or visual training.		No
13	**Urgent Care Centers or Facilities**	Covered	Urgent Care Centers or Facilities	No							No
14	**Home Health Care Services**	Covered	Home Health Care Services	No							No
15	**Emergency Room Services**	Covered	Emergency Room Services	No					Excludes benefits for an emergency room services that does not meet definition of Emergency Service.		Yes
16	**Emergency Transportation/ Ambulance**	Covered	Emergency Transportation/ Ambulance	No					Insured's condition must meet the criteria for an emergency medical condition. Insured must get approval within 48 hours after emergency air or water transport.		No
17	**Inpatient Hospital Services (e.g., Hospital Stay)**	Covered	Inpatient Hospital Services (e.g., Hospital Stay)	Yes	1	Other	Coverage for either day of admission OR day of discharge but not both.				No
18	**Inpatient Physician and Surgical Services**	Covered	Inpatient Physician and Surgical Services	Yes	1	Other	May limit the number of visits covered by one Provider in a given day.				Yes
19	**Bariatric Surgery**	Covered	Bariatric Surgery	Yes	1	Other	Covered up to $10,000 per lifetime.				No
20	**Cosmetic Surgery**	Covered	Cosmetic Surgery	No					Cosmetic Surgery is an excluded benefit except for prior approval for reconstruction as detailed in certificate of coverage.		No

Row Number	A Benefit	B Covered (Required): Is benefit Covered or Not Covered	C Benefit Description (Required if benefit is Covered): Enter a Description, it may be the same as the Benefit name	D Quantitative Limit on Service? (Required if benefit is Covered): Select "Yes" if Quantitative Limit applies	E Limit Quantity (Required if Quantitative Limit is "Yes"): Enter Limit Quantity	F Limit Units (Required if Quantitative Limit is "Yes"): Select the correct limit units	G Other Limit Units Description (Required if "Other" Limit Unit): If a Limit Unit of "Other" was selected in Limit Units, enter a description	H Minimum Stay (Optional): Enter the Minimum Stay (in hours) as a whole number	I Exclusions (Optional): Enter any Exclusions for this benefit	J Explanation: (Optional) Enter an Explanation for anything not listed	K Does this benefit have additional limitations or restrictions? (Required if benefit is Covered): Select "Yes" if there are additional limitations or restrictions that need to be described
21	**Skilled Nursing Facility**	Covered	Skilled Nursing Facility	No						Covered by participating facility only for Acute Care. Includes room, board, general nursing care, medication and drugs given by SNF during a covered stay and medical services included in the rates of a SNF.	No
22	**Prenatal and Postnatal Care**	Covered	Prenatal and Postnatal Care	No						See Maternity Office Visits and Inpatient Hospital Services for additional benefit information.	Yes
23	**Delivery and All Inpatient Services for Maternity Care**	Covered	Delivery and All Inpatient Services for Maternity Care	No						Covered as an Inpatient Hospital Stay.	No
24	**Mental/Behavioral Health Outpatient Services**	Covered	Mental/Behavioral Health Outpatient Services	No						Includes individual and group psychotherapy, family and couples therapy, intensive programs, partial hospital day treatment, psychological testing when integral to treatment, psychotherapy programs to improve compliance with prescribed medical treatment regimens for diabetes, hypertension, ischemic heart disease and emphysema.	Yes
25	**Mental/Behavioral Health Inpatient Services**	Covered	Mental/Behavioral Health Inpatient Services	No					Excludes services provided by non-participating providers or facilities, treatment without concurrent review, non-traditional or alternative therapies, services that focus on education or socialization or delinquency, custodial care that is not medically necessary and biofeedback, pain management, stress reduction classes or pastoral counseling.	Includes hospitalization, residential treatment programs.	No

Row Number	A Benefit	B Covered (Required): Is benefit Covered or Not Covered	C Benefit Description (Required if benefit is Covered): Enter a Description, it may be the same as the Benefit name	D Quantitative Limit on Service? (Required if benefit is Covered): Select "Yes" if Quantitative Limit applies	E Limit Quantity (Required if Quantitative Limit is "Yes"): Enter Limit Quantity	F Limit Units (Required if Quantitative Limit is "Yes"): Select the correct limit units	G Other Limit Units Description (Required if "Other" Limit Unit): If a Limit Unit of "Other" was selected in Limit Units, enter a description	H Minimum Stay (Optional): Enter the Minimum Stay (in hours) as a whole number	I Exclusions (Optional): Enter any Exclusions for this benefit	J Explanation: (Optional) Enter an Explanation for anything not listed	K Does this benefit have additional limitations or restrictions? (Required if benefit is Covered): Select "Yes" if there are additional limitations or restrictions that need to be described
26	**Substance Abuse Disorder Outpatient Services**	Covered	Substance Abuse Disorder Outpatient Services	No						Includes detoxification in outpatient rehab facility (including services for the patient's family when necessary).	Yes
27	**Substance Abuse Disorder Inpatient Services**	Covered	Substance Abuse Disorder Inpatient Services	No					Excludes services provided by non-participating providers or facilities, treatment without concurrent review, non-traditional or alternative therapies, services that focus on education or socialization or delinquency, custodial care that is not medically necessary and biofeedback, pain management, stress reduction classes or pastoral counseling.	Includes detoxification in an inpatient rehabilitation facility.	No
28	**Generic Drugs**	Covered	Generic Drugs	Yes	90	Other	Limited to a 90-day supply for retail and home delivery (mail order) per fill.				Yes
29	**Preferred Brand Drugs**	Covered	Preferred Brand Drugs	Yes	90	Other	Limited to a 90-day supply for retail and home delivery (mail order) per fill.			The limit quantity applies per script on retail and home delivery.	Yes
30	**Non-Preferred Brand Drugs**	Covered	Non-Preferred Brand Drugs	Yes	90	Other	Limited to a 90-day supply for retail and home delivery (mail order) per fill.			The limit quantity applies per script on retail and home delivery.	Yes
31	**Specialty Drugs**	Covered	Specialty Drugs	Yes	30	Other	Limited to a 30-day supply.		ONLY Participating Specialty pharmacies may be utilized for Specialty drugs.		Yes

Row Number	A Benefit	B Covered (Required): Is benefit Covered or Not Covered	C Benefit Description (Required if benefit is Covered): Enter a Description, it may be the same as the Benefit name	D Quantitative Limit on Service? (Required if benefit is Covered): Select "Yes" if Quantitative Limit applies	E Limit Quantity (Required if Quantitative Limit is "Yes"): Enter Limit Quantity	F Limit Units (Required if Quantitative Limit is "Yes"): Select the correct limit units	G Other Limit Units Description (Required if "Other" Limit Unit): If a Limit Unit of "Other" was selected in Limit Units, enter a description	H Minimum Stay (Optional): Enter the Minimum Stay (in hours) as a whole number	I Exclusions (Optional): Enter any Exclusions for this benefit	J Explanation: (Optional) Enter an Explanation for anything not listed	K Does this benefit have additional limitations or restrictions? (Required if benefit is Covered): Select "Yes" if there are additional limitations or restrictions that need to be described
32	**Outpatient Rehabilitation Services**	Covered	Outpatient Rehabilitation Services	Yes	30	Other	Up to 30 outpatient sessions combined per plan year.			Cardiac Rehabilitation is covered up to 36 visits per cardiac event. Typically include physical, occupational and speech therapy but may also include radiation therapy, chemotherapy, dialysis, infusion therapy.	Yes
33	**Habilitation Services**	Covered	Habilitation Services	No						Autism Coverage per Vermont State Mandate for ages zero to six years.	No
34	**Chiropractic Care**	Covered	Chiropractic Care	Yes	12	Other	Prior Approval is required after the 12th visit.			Prior approval required after 12 visits; includes treatment for neuromusculoskeletal conditions by a network provider working within the scope of their license.	No
35	**Durable Medical Equipment**	Covered	Durable Medical Equipment	No						Some durable medical equipment and supplies require prior approval. Includes supplies and equipment necessary for administration, orthotics (if approved), prosthetics, and devices. Threshold applies.	Yes
36	**Hearing Aids**	Not Covered									
37	**Diagnostic Test (X-Ray and Lab Work)**	Covered	Diagnostic Test (X-Ray and Lab Work)	No							No
38	**Imaging (CT/PET Scans, MRIs)**	Covered	Imaging (CT/PET Scans, MRIs)	No							No
39	**Preventive Care/ Screening/ Immunization**	Covered	Preventive Care/Screening/ Immunization	No							No
40	**Routine Foot Care**	Covered	Routine Foot Care	No					Covered for Diabetics ONLY; excluded for all other members.		No
41	**Acupuncture**	Not Covered									
42	**Weight Loss Programs**	Not Covered									

Row Number	A Benefit	B Covered (Required): Is benefit Covered or Not Covered	C Benefit Description (Required if benefit is Covered): Enter a Description, it may be the same as the Benefit name	D Quantitative Limit on Service? (Required if benefit is Covered): Select "Yes" if Quantitative Limit applies	E Limit Quantity (Required if Quantitative Limit is "Yes"): Enter Limit Quantity	F Limit Units (Required if Quantitative Limit is "Yes"): Select the correct limit units	G Other Limit Units Description (Required if "Other" Limit Unit): If a Limit Unit of "Other" was selected in Limit Units, enter a description	H Minimum Stay (Optional): Enter the Minimum Stay (in hours) as a whole number	I Exclusions (Optional): Enter any Exclusions for this benefit	J Explanation: (Optional) Enter an Explanation for anything not listed	K Does this benefit have additional limitations or restrictions? (Required if benefit is Covered): Select "Yes" if there are additional limitations or restrictions that need to be described
43	**Routine Eye Exam for Children**	Covered	Routine Eye Exam for Children	Yes	1	Other	1 routine eye exam per member per calendar year.		Does not cover the evaluation and fitting of contact lenses or other supplemental tests.		No
44	**Eye Glasses for Children**	Covered	Eye Glasses for Children	No						Refer to "Eye Glasses or Contact Lenses to replace the lens of an eye when the lens was not replaced at the time of surgery" on Other tab for more information.	No
45	**Dental Check-Up for Children**	Covered	Dental Check-Up for Children	Yes	2	Treatments per year					No

OTHER BENEFITS

Row Number	A Benefit	B Covered (Required): Is benefit Covered or Not Covered	C Benefit Description (Required if benefit is Covered): Enter a Description, it may be the same as the Benefit name	D Quantitative Limit on Service? (Required if benefit is Covered): Select "Yes" if Quantitative Limit applies	E Limit Quantity (Required if Quantitative Limit is "Yes"): Enter Limit Quantity	F Limit Units (Required if Quantitative Limit is "Yes"): Select the correct limit units	G Other Limit Units Description (Required if "Other" Limit Unit): If a Limit Unit of "Other" was selected in Limit Units, enter a description	H Minimum Stay (Optional): Enter the Minimum Stay (in hours) as a whole number	I Exclusions (Optional): Enter any Exclusions for this benefit	J Explanation: (Optional) Enter an Explanation for anything not listed	K Does this benefit have additional limitations or restrictions? (Required if benefit is Covered): Select "Yes" if there are additional limitations or restrictions that need to be described
1	**Other**	Covered	Nutritional Counseling	Yes	3	Visits per year	3 visits per plan year		Visits for treatment of diabetes do not count toward this visit limit.		No
2	**Outpatient Surgery Physician/ Surgical Services**	Covered	Neuropsychological Testing	Yes	8	Hours per year					No
3	**Hospice Services**	Covered	Home Health Aide	Yes	100	Hours per month				For personal care services only.	No
4	**Outpatient Rehabilitation Services**	Covered	Outpatient physical, speech and occupational therapy	Yes	30	Visits per year	Up to 30 outpatient sessions combined per plan year.			Covered up to 30 visits combined per plan year.	No
5	**Other**	Covered	Preventive Care	No						Includes routine physical examinations, immunizations, well-child care, screening mammogram, screening colonoscopy, preventive GYN.	No
6	**Other**	Covered	Dental Services (not Routine)	No						Includes treatment for or in connection with an accidental injury to jaws, sound natural teeth, mouth or face, provided a continuous course of dental treatment is started with six months of the accident; also includes surgery to correct gross deformity from major disease or surgery with service occurring within six months of the onset of disease or within six months of surgery.	No
7	**Inpatient Physician and Surgical Services**	Covered	Sterilization Reversal	Yes	1	Other	Procedures per lifetime			Covers only one attempt at reversal of sterilization.	No

Row Number	A Benefit	B Covered (Required): Is benefit Covered or Not Covered	C Benefit Description (Required if benefit is Covered): Enter a Description, it may be the same as the Benefit name	D Quantitative Limit on Service? (Required if benefit is Covered): Select "Yes" if Quantitative Limit applies	E Limit Quantity (Required if Quantitative Limit is "Yes"): Enter Limit Quantity	F Limit Units (Required if Quantitative Limit is "Yes"): Select the correct limit units	G Other Limit Units Description (Required if "Other" Limit Unit): If a Limit Unit of "Other" was selected in Limit Units, enter a description	H Minimum Stay (Optional): Enter the Minimum Stay (in hours) as a whole number	I Exclusions (Optional): Enter any Exclusions for this benefit	J Explanation: (Optional) Enter an Explanation for anything not listed	K Does this benefit have additional limitations or restrictions? (Required if benefit is Covered): Select "Yes" if there are additional limitations or restrictions that need to be described
8	**Durable Medical Equipment**	Covered	Eye Glasses or Contact Lenses to replace the lens of an eye when the lens was not replaced at the time of surgery.	Yes	1	Other	1 set of accompanying eyeglasses or contact lenses for the original prescription and one set for each new prescription.				Yes
9	**Durable Medical Equipment**	Covered	Dental prosthetics	No					Repair or replacement of dental appliances or dental prosthetics.	With prior approval and only of required to treat an accidental injury (except injury as a result of chewing or biting); or to correct gross deformity resulting from major disease or Surgery; to treat obstructive sleep apnea; or to treat craniofacial disorders, including temporomandibular joint syndrome.	No
10	**Generic Drugs**	Covered	Infertility medications	Yes	4	Months per year	Cover up to four months of fertility medication per plan year when attempt to conceive through natural means.				No
11	**Preferred Brand Drugs**	Covered	Infertility medications	Yes	4	Months per year	Cover up to four months of fertility medication per plan year when attempt to conceive through natural means.				No
12	**Non-Preferred Brand Drugs**	Covered	Infertility medications	Yes	4	Months per year	Cover up to four months of fertility medication per plan year when attempt to conceive through natural means.				No
13	**Other**	Covered	Nutritional Formulae or supplements	Yes	2500	Other	Up to $2,500 per year for medical foods prescribed for the medically necessary treatment of an inherited metabolic disease or formulae and supplements administered through a feeding tube.				No
14	**Prenatal and Postnatal Care**	Covered	Maternity Office Visits	No						Includes coverage by a Physician or other Professional during a woman's pregnancy for pre-natal visits and other care and post-natal visits.	No
15	**Other**	Covered	Transplant Services - deceased donor	Yes	35000	Other	For transplants using a deceased donor, benefits are limited to $35,000 per solid organ transplant for search, removal, storage, and transportation of the organ.				No

Row Number	A Benefit	B Covered (Required): Is benefit Covered or Not Covered	C Benefit Description (Required if benefit is Covered): Enter a Description, it may be the same as the Benefit name	D Quantitative Limit on Service? (Required if benefit is Covered): Select "Yes" if Quantitative Limit applies	E Limit Quantity (Required if Quantitative Limit is "Yes"): Enter Limit Quantity	F Limit Units (Required if Quantitative Limit is "Yes"): Select the correct limit units	G Other Limit Units Description (Required if "Other" Limit Unit): If a Limit Unit of "Other" was selected in Limit Units, enter a description	H Minimum Stay (Optional): Enter the Minimum Stay (in hours) as a whole number	I Exclusions (Optional): Enter any Exclusions for this benefit	J Explanation: (Optional) Enter an Explanation for anything not listed	K Does this benefit have additional limitations or restrictions? (Required if benefit is Covered): Select "Yes" if there are additional limitations or restrictions that need to be described
16	**Emergency Room Services**	Covered	Emergency room physician services	No					Insured's condition must meet the criteria for an emergency medical condition.		No
17	**Emergency Room Services**	Covered	Emergency mental health and substance use physician and facility services	No					Insured's condition must meet the criteria for an emergency medical condition.		No
18	**Mental/Behavioral Health Outpatient Services**	Covered	Mental/Behavioral health office visits	No							No
19	**Substance Abuse Disorder Outpatient Services**	Covered	Substance use disorder office visits	No							No
20	**Outpatient Rehabilitation Services**	Covered	Cardiac rehabilitation services	Yes	36	Other	36 visits per cardiac event; three supervised exercise sessions per week up to total of 36 sessions for cardiac and pulmonary rehab programs.				No
21	**Hospice Services**	Covered	Hospice Services Homemaker Services	Yes	100	Hours per month					No
22	**Hospice Services**	Covered	Hospice Continuous Care Services in Home	Yes	5	Days per admission	OR 120 hours of continuous care.			For in home care.	No
23	**Hospice Services**	Covered	Hospice Respite Care	Yes	72	Hours per month					No
24	**Hospice Services**	Covered	Hospice Social Services Visits	Yes	6	Visits per lifetime					No
25	**Hospice Services**	Covered	Hospice Bereavement visits	Yes	2	Visits per lifetime				Two bereavement visits following death.	No

Row Number	A Benefit	B Covered (Required): Is benefit Covered or Not Covered	C Benefit Description (Required if benefit is Covered): Enter a Description, it may be the same as the Benefit name	D Quantitative Limit on Service? (Required if benefit is Covered): Select "Yes" if Quantitative Limit applies	E Limit Quantity (Required if Quantitative Limit is "Yes"): Enter Limit Quantity	F Limit Units (Required if Quantitative Limit is "Yes"): Select the correct limit units	G Other Limit Units Description (Required if "Other" Limit Unit): If a Limit Unit of "Other" was selected in Limit Units, enter a description	H Minimum Stay (Optional): Enter the Minimum Stay (in hours) as a whole number	I Exclusions (Optional): Enter any Exclusions for this benefit	J Explanation: (Optional) Enter an Explanation for anything not listed	K Does this benefit have additional limitations or restrictions? (Required if benefit is Covered): Select "Yes" if there are additional limitations or restrictions that need to be described
26	**Generic Drugs**	Covered	Antibiotics and Narcotic Day Supply Limitation	Yes	30	Other	Antibiotics and Narcotics are limited to a 30-day supply both at retail and home delivery (mail order).				No
27	**Preferred Brand Drugs**	Covered	Antibiotics and Narcotic Day Supply Limitation	Yes	30	Other	Antibiotics and Narcotics are limited to a 30-day supply both at retail and home delivery (mail order).				No
28	**Non-Preferred Brand Drugs**	Covered	Antibiotics and Narcotic Day Supply Limitation	Yes	30	Other	Antibiotics and Narcotics are limited to a 30-day supply both at retail and home delivery (mail order).				No
29	**Specialty Drugs**	Covered	Antibiotics and Narcotic Day Supply Limitation	Yes	30	Other	Antibiotics and Narcotics are limited to a 30-day supply both at retail and home delivery (mail order).				No
30	**Other**	Covered	Transplant Services - Live donor	Yes	65000	Other	For transplants using a live donor, benefits are limited to $65,000 for the live donor's surgical expenses and storage and transportation of the organ for each covered organ transplant procedure completed. Costs for a donor must be incurred within 120 days from the date of the donor's surgery.				No
31	**Other**	Covered	Transplant Recipient - Benefit Coverage Time Period	Yes	1	Other	From 30 days before the transplant to 365 days after the transplant for bone marrow transplants OR From five days before the transplant to 365 days after the transplant.				No
32	**Durable Medical Equipment**	Covered	Pre-fabricated knee braces	No					Custom-fabricated or custom-molded knee braces.		No

PRESCRIPTION DRUG EHB-BENCHMARK PLAN BENEFITS BY CATEGORY AND CLASS

CATEGORY	CLASS	SUBMISSION COUNT
ANALGESICS	NONSTEROIDAL ANTI-INFLAMMATORY DRUGS	20
ANALGESICS	OPIOID ANALGESICS, LONG-ACTING	11
ANALGESICS	OPIOID ANALGESICS, SHORT-ACTING	11
ANESTHETICS	LOCAL ANESTHETICS	3
ANTI-ADDICTION/SUBSTANCE ABUSE TREATMENT AGENTS	ALCOHOL DETERRENTS/ANTI-CRAVING	3
ANTI-ADDICTION/SUBSTANCE ABUSE TREATMENT AGENTS	OPIOID ANTAGONISTS	3
ANTI-ADDICTION/SUBSTANCE ABUSE TREATMENT AGENTS	SMOKING CESSATION AGENTS	3
ANTI-INFLAMMATORY AGENTS	GLUCOCORTICOIDS	1
ANTI-INFLAMMATORY AGENTS	NONSTEROIDAL ANTI-INFLAMMATORY DRUGS	20
ANTIBACTERIALS	AMINOGLYCOSIDES	9
ANTIBACTERIALS	ANTIBACTERIALS, OTHER	20
ANTIBACTERIALS	BETA-LACTAM, CEPHALOSPORINS	18
ANTIBACTERIALS	BETA-LACTAM, OTHER	5
ANTIBACTERIALS	BETA-LACTAM, PENICILLINS	12
ANTIBACTERIALS	MACROLIDES	5
ANTIBACTERIALS	QUINOLONES	8
ANTIBACTERIALS	SULFONAMIDES	4
ANTIBACTERIALS	TETRACYCLINES	4
ANTICONVULSANTS	ANTICONVULSANTS, OTHER	2
ANTICONVULSANTS	CALCIUM CHANNEL MODIFYING AGENTS	4
ANTICONVULSANTS	GAMMA-AMINOBUTYRIC ACID (GABA) AUGMENTING AGENTS	5
ANTICONVULSANTS	GLUTAMATE REDUCING AGENTS	3
ANTICONVULSANTS	SODIUM CHANNEL AGENTS	7
ANTIDEMENTIA AGENTS	ANTIDEMENTIA AGENTS, OTHER	1
ANTIDEMENTIA AGENTS	CHOLINESTERASE INHIBITORS	3
ANTIDEMENTIA AGENTS	N-METHYL-D-ASPARTATE (NMDA) RECEPTOR ANTAGONIST	1
ANTIDEPRESSANTS	ANTIDEPRESSANTS, OTHER	8
ANTIDEPRESSANTS	MONOAMINE OXIDASE INHIBITORS	4
ANTIDEPRESSANTS	SEROTONIN/NOREPINEPHRINE REUPTAKE INHIBITORS	9
ANTIDEPRESSANTS	TRICYCLICS	9
ANTIEMETICS	ANTIEMETICS, OTHER	10
ANTIEMETICS	EMETOGENIC THERAPY ADJUNCTS	8
ANTIFUNGALS	NO USP CLASS	26
ANTIGOUT AGENTS	NO USP CLASS	5
ANTIMIGRAINE AGENTS	ERGOT ALKALOIDS	2
ANTIMIGRAINE AGENTS	PROPHYLACTIC	4

CATEGORY	CLASS	SUBMISSION COUNT
ANTIMIGRAINE AGENTS	SEROTONIN (5-HT) 1B/1D RECEPTOR AGONISTS	7
ANTIMYASTHENIC AGENTS	PARASYMPATHOMIMETICS	3
ANTIMYCOBACTERIALS	ANTIMYCOBACTERIALS, OTHER	2
ANTIMYCOBACTERIALS	ANTITUBERCULARS	10
ANTINEOPLASTICS	ALKYLATING AGENTS	8
ANTINEOPLASTICS	ANTIANGIOGENIC AGENTS	2
ANTINEOPLASTICS	ANTIESTROGENS/MODIFIERS	3
ANTINEOPLASTICS	ANTIMETABOLITES	3
ANTINEOPLASTICS	ANTINEOPLASTICS, OTHER	6
ANTINEOPLASTICS	AROMATASE INHIBITORS, 3RD GENERATION	3
ANTINEOPLASTICS	ENZYME INHIBITORS	3
ANTINEOPLASTICS	MOLECULAR TARGET INHIBITORS	12
ANTINEOPLASTICS	MONOCLONAL ANTIBODIES	3
ANTINEOPLASTICS	RETINOIDS	3
ANTIPARASITICS	ANTHELMINTICS	4
ANTIPARASITICS	ANTIPROTOZOALS	12
ANTIPARASITICS	PEDICULICIDES/SCABICIDES	6
ANTIPARKINSON AGENTS	ANTICHOLINERGICS	3
ANTIPARKINSON AGENTS	ANTIPARKINSON AGENTS, OTHER	3
ANTIPARKINSON AGENTS	DOPAMINE AGONISTS	4
ANTIPARKINSON AGENTS	DOPAMINE PRECURSORS/L-AMINO ACID DECARBOXYLASE INHIBITORS	2
ANTIPARKINSON AGENTS	MONOAMINE OXIDASE B (MAO-B) INHIBITORS	2
ANTIPSYCHOTICS	1ST GENERATION/TYPICAL	10
ANTIPSYCHOTICS	2ND GENERATION/ATYPICAL	9
ANTIPSYCHOTICS	TREATMENT-RESISTANT	1
ANTISPASTICITY AGENTS	NO USP CLASS	5
ANTIVIRALS	ANTI-CYTOMEGALOVIRUS (CMV) AGENTS	4
ANTIVIRALS	ANTI-HIV AGENTS, NON-NUCLEOSIDE REVERSE TRANSCRIPTASE INHIBITORS	5
ANTIVIRALS	ANTI-HIV AGENTS, NUCLEOSIDE AND NUCLEOTIDE REVERSE TRANSCRIPTASE INHIBITORS	11
ANTIVIRALS	ANTI-HIV AGENTS, OTHER	3
ANTIVIRALS	ANTI-HIV AGENTS, PROTEASE INHIBITORS	9
ANTIVIRALS	ANTI-INFLUENZA AGENTS	4
ANTIVIRALS	ANTIHEPATITIS AGENTS	12
ANTIVIRALS	ANTIHERPETIC AGENTS	6
ANXIOLYTICS	ANXIOLYTICS, OTHER	4
ANXIOLYTICS	SSRIS/SNRIS (SELECTIVE SEROTONIN REUPTAKE INHIBITORS/SEROTONIN AND NOREPINEPHRINE REUPTAKE INHIBITORS)	5

CATEGORY	CLASS	SUBMISSION COUNT
BIPOLAR AGENTS	BIPOLAR AGENTS, OTHER	6
BIPOLAR AGENTS	MOOD STABILIZERS	5
BLOOD GLUCOSE REGULATORS	ANTIDIABETIC AGENTS	21
BLOOD GLUCOSE REGULATORS	GLYCEMIC AGENTS	2
BLOOD GLUCOSE REGULATORS	INSULINS	10
BLOOD PRODUCTS/MODIFIERS/VOLUME EXPANDERS	ANTICOAGULANTS	7
BLOOD PRODUCTS/MODIFIERS/VOLUME EXPANDERS	BLOOD FORMATION MODIFIERS	8
BLOOD PRODUCTS/MODIFIERS/VOLUME EXPANDERS	COAGULANTS	1
BLOOD PRODUCTS/MODIFIERS/VOLUME EXPANDERS	PLATELET MODIFYING AGENTS	8
CARDIOVASCULAR AGENTS	ALPHA-ADRENERGIC AGONISTS	6
CARDIOVASCULAR AGENTS	ALPHA-ADRENERGIC BLOCKING AGENTS	4
CARDIOVASCULAR AGENTS	ANGIOTENSIN II RECEPTOR ANTAGONISTS	8
CARDIOVASCULAR AGENTS	ANGIOTENSIN-CONVERTING ENZYME (ACE) INHIBITORS	10
CARDIOVASCULAR AGENTS	ANTIARRHYTHMICS	10
CARDIOVASCULAR AGENTS	BETA-ADRENERGIC BLOCKING AGENTS	13
CARDIOVASCULAR AGENTS	CALCIUM CHANNEL BLOCKING AGENTS	9
CARDIOVASCULAR AGENTS	CARDIOVASCULAR AGENTS, OTHER	4
CARDIOVASCULAR AGENTS	DIURETICS, CARBONIC ANHYDRASE INHIBITORS	2
CARDIOVASCULAR AGENTS	DIURETICS, LOOP	4
CARDIOVASCULAR AGENTS	DIURETICS, POTASSIUM-SPARING	4
CARDIOVASCULAR AGENTS	DIURETICS, THIAZIDE	6
CARDIOVASCULAR AGENTS	DYSLIPIDEMICS, FIBRIC ACID DERIVATIVES	2
CARDIOVASCULAR AGENTS	DYSLIPIDEMICS, HMG COA REDUCTASE INHIBITORS	7
CARDIOVASCULAR AGENTS	DYSLIPIDEMICS, OTHER	6
CARDIOVASCULAR AGENTS	VASODILATORS, DIRECT-ACTING ARTERIAL	3
CARDIOVASCULAR AGENTS	VASODILATORS, DIRECT-ACTING ARTERIAL/VENOUS	3
CENTRAL NERVOUS SYSTEM AGENTS	ATTENTION DEFICIT HYPERACTIVITY DISORDER AGENTS, AMPHETAMINES	4
CENTRAL NERVOUS SYSTEM AGENTS	ATTENTION DEFICIT HYPERACTIVITY DISORDER AGENTS, NON-AMPHETAMINES	4
CENTRAL NERVOUS SYSTEM AGENTS	CENTRAL NERVOUS SYSTEM AGENTS, OTHER	4
CENTRAL NERVOUS SYSTEM AGENTS	FIBROMYALGIA AGENTS	3
CENTRAL NERVOUS SYSTEM AGENTS	MULTIPLE SCLEROSIS AGENTS	7
DENTAL AND ORAL AGENTS	NO USP CLASS	8
DERMATOLOGICAL AGENTS	NO USP CLASS	35
ENZYME REPLACEMENT/MODIFIERS	NO USP CLASS	17
GASTROINTESTINAL AGENTS	ANTISPASMODICS, GASTROINTESTINAL	6
GASTROINTESTINAL AGENTS	GASTROINTESTINAL AGENTS, OTHER	6
GASTROINTESTINAL AGENTS	HISTAMINE2 (H2) RECEPTOR ANTAGONISTS	4
GASTROINTESTINAL AGENTS	IRRITABLE BOWEL SYNDROME AGENTS	2

CATEGORY	CLASS	SUBMISSION COUNT
GASTROINTESTINAL AGENTS	LAXATIVES	3
GASTROINTESTINAL AGENTS	PROTECTANTS	2
GASTROINTESTINAL AGENTS	PROTON PUMP INHIBITORS	6
GENITOURINARY AGENTS	ANTISPASMODICS, URINARY	7
GENITOURINARY AGENTS	BENIGN PROSTATIC HYPERTROPHY AGENTS	9
GENITOURINARY AGENTS	GENITOURINARY AGENTS, OTHER	3
GENITOURINARY AGENTS	PHOSPHATE BINDERS	3
HORMONAL AGENTS, STIMULANT/REPLACEMENT/MODIFYING (ADRENAL)	GLUCOCORTICOIDS/MINERALOCORTICOIDS	23
HORMONAL AGENTS, STIMULANT/REPLACEMENT/MODIFYING (PITUITARY)	NO USP CLASS	4
HORMONAL AGENTS, STIMULANT/REPLACEMENT/MODIFYING (PROSTAGLANDINS)	NO USP CLASS	1
HORMONAL AGENTS, STIMULANT/REPLACEMENT/MODIFYING (SEX HORMONES/MODIFIERS)	ANABOLIC STEROIDS	2
HORMONAL AGENTS, STIMULANT/REPLACEMENT/MODIFYING (SEX HORMONES/MODIFIERS)	ANDROGENS	4
HORMONAL AGENTS, STIMULANT/REPLACEMENT/MODIFYING (SEX HORMONES/MODIFIERS)	ESTROGENS	6
HORMONAL AGENTS, STIMULANT/REPLACEMENT/MODIFYING (SEX HORMONES/MODIFIERS)	PROGESTINS	5
HORMONAL AGENTS, STIMULANT/REPLACEMENT/MODIFYING (SEX HORMONES/MODIFIERS)	SELECTIVE ESTROGEN RECEPTOR MODIFYING AGENTS	1
HORMONAL AGENTS, STIMULANT/REPLACEMENT/MODIFYING (THYROID)	NO USP CLASS	3
HORMONAL AGENTS, SUPPRESSANT (ADRENAL)	NO USP CLASS	1
HORMONAL AGENTS, SUPPRESSANT (PARATHYROID)	NO USP CLASS	1
HORMONAL AGENTS, SUPPRESSANT (PITUITARY)	NO USP CLASS	9
HORMONAL AGENTS, SUPPRESSANT (SEX HORMONES/MODIFIERS)	ANTIANDROGENS	5
HORMONAL AGENTS, SUPPRESSANT (THYROID)	ANTITHYROID AGENTS	2
IMMUNOLOGICAL AGENTS	IMMUNE SUPPRESSANTS	24
IMMUNOLOGICAL AGENTS	IMMUNIZING AGENTS, PASSIVE	4
IMMUNOLOGICAL AGENTS	IMMUNOMODULATORS	10
INFLAMMATORY BOWEL DISEASE AGENTS	AMINOSALICYLATES	3
INFLAMMATORY BOWEL DISEASE AGENTS	GLUCOCORTICOIDS	5
INFLAMMATORY BOWEL DISEASE AGENTS	SULFONAMIDES	1
METABOLIC BONE DISEASE AGENTS	NO USP CLASS	15
OPHTHALMIC AGENTS	OPHTHALMIC PROSTAGLANDIN AND PROSTAMIDE ANALOGS	3
OPHTHALMIC AGENTS	OPHTHALMIC AGENTS, OTHER	4
OPHTHALMIC AGENTS	OPHTHALMIC ANTI-ALLERGY AGENTS	10
OPHTHALMIC AGENTS	OPHTHALMIC ANTI-INFLAMMATORIES	11

CATEGORY	CLASS	SUBMISSION COUNT
OPHTHALMIC AGENTS	OPHTHALMIC ANTIGLAUCOMA AGENTS	14
OTIC AGENTS	NO USP CLASS	6
RESPIRATORY TRACT AGENTS	ANTI-INFLAMMATORIES, INHALED CORTICOSTEROIDS	6
RESPIRATORY TRACT AGENTS	ANTIHISTAMINES	11
RESPIRATORY TRACT AGENTS	ANTILEUKOTRIENES	3
RESPIRATORY TRACT AGENTS	BRONCHODILATORS, ANTICHOLINERGIC	2
RESPIRATORY TRACT AGENTS	BRONCHODILATORS, PHOSPHODIESTERASE INHIBITORS (XANTHINES)	3
RESPIRATORY TRACT AGENTS	BRONCHODILATORS, SYMPATHOMIMETIC	10
RESPIRATORY TRACT AGENTS	MAST CELL STABILIZERS	1
RESPIRATORY TRACT AGENTS	PULMONARY ANTIHYPERTENSIVES	6
RESPIRATORY TRACT AGENTS	RESPIRATORY TRACT AGENTS, OTHER	5
SKELETAL MUSCLE RELAXANTS	NO USP CLASS	6
SLEEP DISORDER AGENTS	GABA RECEPTOR MODULATORS	3
SLEEP DISORDER AGENTS	SLEEP DISORDERS, OTHER	5
THERAPEUTIC NUTRIENTS/MINERALS/ELECTROLYTES	ELECTROLYTE/MINERAL MODIFIERS	6
THERAPEUTIC NUTRIENTS/MINERALS/ELECTROLYTES	ELECTROLYTE/MINERAL REPLACEMENT	4

Appendix B-4. GMC Plan Designs Considered

Appendix B-4

General Notes

1. Deductibles do not apply to pharmacy benefits except for the HDHPs.
2. In accordance with the ACA, all copays and coinsurance apply to the MOOP.
3. For copay plans, it is assumed that there would be no additional physician copay for inpatient and outpatient services.
4. Mail Order copays are assumed to be 2.5 Retail for Generic and Brand Formulary drugs and 3 times Retail for Brand Non-Formulary and Specialty.
5. All copay plans have no individual or family deductible.
6. Allowed amount is normalized to $492 in the Wakely model for purposes of estimating the AV. This is based on the prior GMC analysis and will be updated as the 2017 cost projections are refined.
7. For the HSA contributions, the impact to the AV is determined looking at the one year of contribution in isolation. That is, any carryover from prior years is not considered.
8. Plan designs are only for discussion purposes. Actual plan designs could vary, potentially materially, once all assumptions and input is incorproated.

Vermont 2017 Plan Design Options
DRAFT - For illustrative and discussion purposes only

	Copay 80% Option 1			Option 2			Option 3		
Wakely AV	**81.5%**			**80.8%**			**80.6%**		
Federal AV (2015 AVC)	**72.2%**			**70.7%**			**70.4%**		
Deductible	*In-Network*	*Out-of-Network*	*Out-of-Area*	*In-Network*	*Out-of-Network*	*Out-of-Area*	*In-Network*	*Out-of-Network*	*Out-of-Area*
Individual	$0	$0	$0	$0	$0	$0	$0	$0	$0
Family	$0	$0	$0	$0	$0	$0	$0	$0	$0
MOOP	*In-Network*	*Out-of-Network*	*Out-of-Area*	*In-Network*	*Out-of-Network*	*Out-of-Area*	*In-Network*	*Out-of-Network*	*Out-of-Area*
Individual	$6,600	$0	$0	$6,000	$0	$0	$5,600	$0	$0
Family	$13,200	$0	$0	$12,000	$0	$0	$11,200	$0	$0
Medical/Rx Deductibles Combined?	No			No			No		
Medical/Rx MOOPs Combined?	Yes			Yes			Yes		
	Plan Coinsurance	Copayments	Deductible Applies?	Plan Coinsurance	Copayments	Deductible Applies?	Plan Coinsurance	Copayments	Deductible Applies?
Inpatient Hospital									
Medical	0%	$ 3,500.00	N	0%	$ 3,750.00	N	0%	$ 4,000.00	N
Surgical	0%	$ 3,500.00	N	0%	$ 3,750.00	N	0%	$ 4,000.00	N
Maternity	0%	$ 3,500.00	N	0%	$ 3,750.00	N	0%	$ 4,000.00	N
Mental Health	0%	$ 3,500.00	N	0%	$ 3,750.00	N	0%	$ 4,000.00	N
Chemical Dependency	0%	$ 3,500.00	N	0%	$ 3,750.00	N	0%	$ 4,000.00	N
Skilled Nursing Facility	0%	$ 3,500.00	N	0%	$ 3,750.00	N	0%	$ 4,000.00	N
Outpatient Hospital									
Emergency Room	0%	$ 1,200.00	N	0%	$ 1,400.00	N	0%	$ 1,600.00	N
Ambulatory Surgery	0%	$ 850.00	N	0%	$ 1,000.00	N	0%	$ 1,250.00	N
Radiology	0%	$ 375.00	N	0%	$ 425.00	N	0%	$ 500.00	N
Laboratory	0%	$ 275.00	N	0%	$ 300.00	N	0%	$ 350.00	N
Maternity Visits	0%	$ 250.00	N	0%	$ 275.00	N	0%	$ 350.00	N
Mental Health	0%	$ 55.00	N	0%	$ 70.00	N	0%	$ 70.00	N
Chemical Dependency	0%	$ 55.00	N	0%	$ 70.00	N	0%	$ 70.00	N
Inpatient Physician									
Medical/Surgical	100%	$ -	N	100%	$ -	N	100%	$ -	N
Mental Health	100%	$ -	N	100%	$ -	N	100%	$ -	N
Chemical Dependency	100%	$ -	N	100%	$ -	N	100%	$ -	N
Maternity	100%	$ -	N	100%	$ -	N	100%	$ -	N
Outpatient Physician									
Physician Office Visits	0%	$ 55.00	N	0%	$ 70.00	N	0%	$ 70.00	N
Specialist Office Visits	0%	$ 65.00	N	0%	$ 80.00	N	0%	$ 80.00	N
Mental Health	0%	$ 55.00	N	0%	$ 70.00	N	0%	$ 70.00	N
Chemical Dependency	0%	$ 55.00	N	0%	$ 70.00	N	0%	$ 70.00	N
Preventive Care									
Physical Exams. Etc.	100%	$ -	N	100%	$ -	N	100%	$ -	N
Outpatient Miscellaneous									
Ambulance	0%	$ 600.00	N	0%	$ 650.00	N	0%	$ 700.00	N
Dialysis	0%	$ 70.00	N	0%	$ 80.00	N	0%	$ 90.00	N
DME	0%	$ 70.00	N	0%	$ 80.00	N	0%	$ 90.00	N
Physical Therapy	0%	$ 65.00	N	0%	$ 70.00	N	0%	$ 80.00	N
Radiology/X-Ray	0%	$ 70.00	N	0%	$ 80.00	N	0%	$ 90.00	N
Rx Inputs									
Member Coinsurance	Retail	Mail Order		Retail	Mail Order		Retail	Mail Order	
Generic	0%	0%		0%	0%		0%	0%	
Brand Formulary	0%	0%		0%	0%		0%	0%	
Brand Non Formulary	0%	0%		0%	0%		0%	0%	
Specialty	0%	0%		0%	0%		0%	0%	
Member Copay	Retail	Mail Order		Retail	Mail Order		Retail	Mail Order	
Generic	$ 20.00	$ 50.00		$ 25.00	$ 62.50		$ 25.00	$ 62.50	
Brand Formulary	$ 40.00	$ 100.00		$ 50.00	$ 125.00		$ 60.00	$ 150.00	
Brand Non Formulary	$ 75.00	$ 225.00		$ 85.00	$ 255.00		$ 95.00	$ 285.00	
Specialty	$ 100.00	$ 300.00		$ 110.00	$ 330.00		$ 120.00	$ 360.00	

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	Option 1			Copay 87% Option 2			Option 3		
Wakely AV	88.2%			88.1%			87.6%		
Federal AV (2015 AVC)	79.3%			78.3%			77.2%		
Deductible	*In-Network*	*Out-of-Network*	*Out-of-Area*	*In-Network*	*Out-of-Network*	*Out-of-Area*	*In-Network*	*Out-of-Network*	*Out-of-Area*
Individual	$0	$0	$0	$0	$0	$0	$0	$0	$0
Family	$0	$0	$0	$0	$0	$0	$0	$0	$0
MOOP	*In-Network*	*Out-of-Network*	*Out-of-Area*	*In-Network*	*Out-of-Network*	*Out-of-Area*	*In-Network*	*Out-of-Network*	*Out-of-Area*
Individual	$6,600	$0	$0	$5,200	$0	$0	$4,500	$0	$0
Family	$13,200	$0	$0	$10,400	$0	$0	$9,000	$0	$0
Medical/Rx Deductibles Combined?	No			No			No		
Medical/Rx MOOPs Combined?	Yes			Yes			Yes		
	Plan Coinsurance	Copayments	Deductible Applies?	Plan Coinsurance	Copayments	Deductible Applies?	Plan Coinsurance	Copayments	Deductible Applies?
Inpatient Hospital									
Medical	0%	$ 750.00	N	0%	$ 750.00	N	0%	$ 1,000.00	Y
Surgical	0%	$ 750.00	N	0%	$ 750.00	N	0%	$ 1,000.00	Y
Maternity	0%	$ 750.00	N	0%	$ 750.00	N	0%	$ 1,000.00	Y
Mental Health	0%	$ 750.00	N	0%	$ 750.00	N	0%	$ 1,000.00	Y
Chemical Dependency	0%	$ 750.00	N	0%	$ 750.00	N	0%	$ 1,000.00	Y
Skilled Nursing Facility	0%	$ 750.00	N	0%	$ 750.00	N	0%	$ 1,000.00	Y
Outpatient Hospital									
Emergency Room	0%	$ 300.00	N	0%	$ 300.00	N	0%	$ 400.00	Y
Ambulatory Surgery	0%	$ 200.00	N	0%	$ 225.00	N	0%	$ 250.00	Y
Radiology	0%	$ 200.00	N	0%	$ 200.00	N	0%	$ 225.00	Y
Laboratory	0%	$ 175.00	N	0%	$ 150.00	N	0%	$ 175.00	Y
Maternity Visits	0%	$ 175.00	N	0%	$ 150.00	N	0%	$ 175.00	Y
Mental Health	0%	$ 40.00	N	0%	$ 65.00	N	0%	$ 75.00	Y
Chemical Dependency	0%	$ 40.00	N	0%	$ 65.00	N	0%	$ 75.00	Y
Inpatient Physician									
Medical/Surgical	100%	$ -	N	100%	$ -	N	100%	$ -	Y
Mental Health	100%	$ -	N	100%	$ -	N	100%	$ -	Y
Chemical Dependency	100%	$ -	N	100%	$ -	N	100%	$ -	Y
Maternity	100%	$ -	N	100%	$ -	N	100%	$ -	Y
Outpatient Physician									
Physician Office Visits	0%	$ 40.00	N	0%	$ 65.00	N	0%	$ 75.00	N
Specialist Office Visits	0%	$ 50.00	N	0%	$ 75.00	N	0%	$ 85.00	N
Mental Health	0%	$ 40.00	N	0%	$ 65.00	N	0%	$ 75.00	N
Chemical Dependency	0%	$ 40.00	N	0%	$ 65.00	N	0%	$ 75.00	N
Preventive Care									
Physical Exams. Etc.	100%	$ -	N	100%	$ -	N	100%	$ -	N
Outpatient Miscellaneous									
Ambulance	0%	$ 300.00	N	0%	$ 300.00	N	0%	$ 350.00	N
Dialysis	0%	$ 60.00	N	0%	$ 85.00	N	0%	$ 95.00	N
DME	0%	$ 60.00	N	0%	$ 85.00	N	0%	$ 95.00	N
Physical Therapy	0%	$ 50.00	N	0%	$ 75.00	N	0%	$ 85.00	N
Radiology/X-Ray	0%	$ 60.00	N	0%	$ 85.00	N	0%	$ 95.00	N
Rx Inputs									
Member Coinsurance	Retail	Mail Order		Retail	Mail Order		Retail	Mail Order	
Generic	0%	0%		0%	0%		0%	0%	
Brand Formulary	0%	0%		0%	0%		0%	0%	
Brand Non Formulary	0%	0%		0%	0%		0%	0%	
Specialty	0%	0%		0%	0%		0%	0%	
Member Copay	Retail	Mail Order		Retail	Mail Order		Retail	Mail Order	
Generic	$ 10.00	$ 25.00		$ 12.00	$ 30.00		$ 15.00	$ 37.50	
Brand Formulary	$ 20.00	$ 50.00		$ 25.00	$ 62.50		$ 30.00	$ 75.00	
Brand Non Formulary	$ 60.00	$ 180.00		$ 75.00	$ 225.00		$ 80.00	$ 240.00	
Specialty	$ 75.00	$ 225.00		$ 100.00	$ 300.00		$ 110.00	$ 330.00	

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	Option 1			Copay 94% Option 2			Option 3		
Wakely AV	94.4%			94.6%			94.9%		
Federal AV (2015 AVC)	86.3%			84.9%			84.9%		
Deductible	*In-Network*	*Out-of-Network*	*Out-of-Area*	*In-Network*	*Out-of-Network*	*Out-of-Area*	*In-Network*	*Out-of-Network*	*Out-of-Area*
Individual	$0	$0	$0	$0	$0	$0	$0	$0	$0
Family	$0	$0	$0	$0	$0	$0	$0	$0	$0
MOOP	*In-Network*	*Out-of-Network*	*Out-of-Area*	*In-Network*	*Out-of-Network*	*Out-of-Area*	*In-Network*	*Out-of-Network*	*Out-of-Area*
Individual	$6,000	$0	$0	$3,500	$0	$0	$2,000	$0	$0
Family	$12,000	$0	$0	$7,000	$0	$0	$4,000	$0	$0
Medical/Rx Deductibles Combined?	No			No			No		
Medical/Rx MOOPs Combined?	Yes			Yes			Yes		
	Plan Coinsurance	Copayments	Deductible Applies?	Plan Coinsurance	Copayments	Deductible Applies?	Plan Coinsurance	Copayments	Deductible Applies?
Inpatient Hospital									
Medical	0%	$ 200.00	N	0%	$ 300.00	N	0%	$ 400.00	Y
Surgical	0%	$ 200.00	N	0%	$ 300.00	N	0%	$ 400.00	Y
Maternity	0%	$ 200.00	N	0%	$ 300.00	N	0%	$ 400.00	Y
Mental Health	0%	$ 200.00	N	0%	$ 300.00	N	0%	$ 400.00	Y
Chemical Dependency	0%	$ 200.00	N	0%	$ 300.00	N	0%	$ 400.00	Y
Skilled Nursing Facility	0%	$ 200.00	N	0%	$ 300.00	N	0%	$ 400.00	Y
Outpatient Hospital									
Emergency Room	0%	$ 100.00	N	0%	$ 150.00	N	0%	$ 200.00	Y
Ambulatory Surgery	0%	$ 40.00	N	0%	$ 60.00	N	0%	$ 70.00	Y
Radiology	0%	$ 50.00	N	0%	$ 60.00	N	0%	$ 80.00	Y
Laboratory	0%	$ 35.00	N	0%	$ 60.00	N	0%	$ 70.00	Y
Maternity Visits	0%	$ 35.00	N	0%	$ 60.00	N	0%	$ 70.00	Y
Mental Health	0%	$ 15.00	N	0%	$ 20.00	N	0%	$ 30.00	Y
Chemical Dependency	0%	$ 15.00	N	0%	$ 20.00	N	0%	$ 30.00	Y
Inpatient Physician									
Medical/Surgical	100%	$ -	N	100%	$ -	N	100%	$ -	Y
Mental Health	100%	$ -	N	100%	$ -	N	100%	$ -	Y
Chemical Dependency	100%	$ -	N	100%	$ -	N	100%	$ -	Y
Maternity	100%	$ -	N	100%	$ -	N	100%	$ -	Y
Outpatient Physician									
Physician Office Visits	0%	$ 15.00	N	0%	$ 20.00	N	0%	$ 30.00	N
Specialist Office Visits	0%	$ 25.00	N	0%	$ 30.00	N	0%	$ 40.00	N
Mental Health	0%	$ 15.00	N	0%	$ 20.00	N	0%	$ 30.00	N
Chemical Dependency	0%	$ 15.00	N	0%	$ 20.00	N	0%	$ 30.00	N
Preventive Care									
Physical Exams. Etc.	100%	$ -	N	100%	$ -	N	100%	$ -	N
Outpatient Miscellaneous									
Ambulance	0%	$ 65.00	N	0%	$ 80.00	N	0%	$ 125.00	N
Dialysis	0%	$ 30.00	N	0%	$ 35.00	N	0%	$ 50.00	N
DME	0%	$ 30.00	N	0%	$ 35.00	N	0%	$ 50.00	N
Physical Therapy	0%	$ 25.00	N	0%	$ 30.00	N	0%	$ 45.00	N
Radiology/X-Ray	0%	$ 30.00	N	0%	$ 35.00	N	0%	$ 50.00	N
Rx Inputs									
Member Coinsurance	Retail	Mail Order		Retail	Mail Order		Retail	Mail Order	
Generic	0%	0%		0%	0%		0%	0%	
Brand Formulary	0%	0%		0%	0%		0%	0%	
Brand Non Formulary	0%	0%		0%	0%		0%	0%	
Specialty	0%	0%		0%	0%		0%	0%	
Member Copay	Retail	Mail Order		Retail	Mail Order		Retail	Mail Order	
Generic	$ 8.00	$ 20.00		$ 12.00	$ 30.00		$ 25.00	$ 62.50	
Brand Formulary	$ 20.00	$ 50.00		$ 30.00	$ 75.00		$ 50.00	$ 125.00	
Brand Non Formulary	$ 50.00	$ 150.00		$ 80.00	$ 240.00		$ 100.00	$ 300.00	
Specialty	$ 75.00	$ 225.00		$ 110.00	$ 330.00		$ 125.00	$ 375.00	

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	Deductible 80%											
	Option 1			Option 2			Option 3			Option 4		
Wakely AV	80.8%			79.9%			79.7%			79.6%		
Federal AV (2015 AVC)	75.2%			74.8%			77.0%			77.3%		
Deductible	*In-Network*	*Out-of-Netwo*	*Out-of-Area*	*In-Network*	*Out-of-Netwo*	*Out-of-Area*	*In-Network*	*Out-of-Netwo*	*Out-of-Area*	*In-Network*	*Out-of-Netwo*	*Out-of-Area*
Individual	$1,000	$0	$0	$1,750	$0	$0	$2,500	$0	$0	$2,000	$0	$0
Family	$2,000	$0	$0	$3,500	$0	$0	$5,000	$0	$0	$4,000	$0	$0
MOOP	*In-Network*	*Out-of-Netwo*	*Out-of-Area*	*In-Network*	*Out-of-Netwo*	*Out-of-Area*	*In-Network*	*Out-of-Netwo*	*Out-of-Area*	*In-Network*	*Out-of-Netwo*	*Out-of-Area*
Individual	$6,500	$0	$0	$5,000	$0	$0	$3,500	$0	$0	$5,000	$0	$0
Family	$13,000	$0	$0	$10,000	$0	$0	$7,000	$0	$0	$10,000	$0	$0
Medical/Rx Deductibles Combined?	No			No			No			No		
Medical/Rx MOOPs Combined?	Yes			Yes			Yes			Yes		
Inpatient Hospital	Plan Coinsurance	Copayments	Deductible Applies?	Plan Coinsurance	Copayments	Deductible Applies?	Plan Coinsurance	Copayments	Deductible Applies?	Plan Coinsurance	Copayments	Deductible Applies?
Medical	80%	$ -	Y	80%	$ -	Y	80%	$ -	Y	80%	$ -	Y
Surgical	80%	$ -	Y	80%	$ -	Y	80%	$ -	Y	80%	$ -	Y
Maternity	80%	$ -	Y	80%	$ -	Y	80%	$ -	Y	80%	$ -	Y
Mental Health	80%	$ -	Y	80%	$ -	Y	80%	$ -	Y	80%	$ -	Y
Chemical Dependency	80%	$ -	Y	80%	$ -	Y	80%	$ -	Y	80%	$ -	Y
Skilled Nursing Facility	80%	$ -	Y	80%	$ -	Y	80%	$ -	Y	80%	$ -	Y
Outpatient Hospital												
Emergency Room	0%	$ 150.00	Y	0%	$ 100.00	Y	0%	$ 75.00	Y	0%	$ 100.00	Y
Ambulatory Surgery	0%	$ 200.00	Y	0%	$ 125.00	Y	0%	$ 100.00	Y	0%	$ 125.00	Y
Radiology	0%	$ 70.00	Y	0%	$ 50.00	Y	0%	$ 30.00	Y	0%	$ 50.00	Y
Laboratory	0%	$ 65.00	Y	0%	$ 45.00	Y	0%	$ 25.00	Y	0%	$ 45.00	Y
Maternity Visits	0%	$ 50.00	Y	0%	$ 35.00	Y	0%	$ 30.00	Y	0%	$ 35.00	Y
Mental Health	0%	$ 45.00	N	0%	$ 25.00	N	0%	$ 20.00	N	0%	$ 25.00	N
Chemical Dependency	0%	$ 45.00	N	0%	$ 25.00	N	0%	$ 20.00	N	0%	$ 25.00	N
Inpatient Physician												
Medical/Surgical	80%	$ -	Y	80%	$ -	Y	80%	$ -	Y	80%	$ -	Y
Mental Health	80%	$ -	Y	80%	$ -	Y	80%	$ -	Y	80%	$ -	Y
Chemical Dependency	80%	$ -	Y	80%	$ -	Y	80%	$ -	Y	80%	$ -	Y
Maternity	80%	$ -	Y	80%	$ -	Y	80%	$ -	Y	80%	$ -	Y
Outpatient Physician												
Physician Office Visits	0%	$ 45.00	N	0%	$ 25.00	N	0%	$ 20.00	N	0%	$ 25.00	N
Specialist Office Visits	0%	$ 45.00	N	0%	$ 35.00	N	0%	$ 30.00	N	0%	$ 35.00	N
Mental Health	0%	$ 45.00	N	0%	$ 25.00	N	0%	$ 20.00	N	0%	$ 25.00	N
Chemical Dependency	0%	$ 45.00	N	0%	$ 25.00	N	0%	$ 20.00	N	0%	$ 25.00	N
Preventive Care												
Physical Exams. Etc.	100%	$ -	N	100%	$ -	N	100%	$ -	N	100%	$ -	N
Outpatient Miscellaneous												
Ambulance	0%	$ 65.00	Y	0%	$ 55.00	Y	0%	$ 55.00	Y	80%	$ -	Y
Dialysis	0%	$ 40.00	Y	0%	$ 40.00	Y	0%	$ 35.00	Y	80%	$ -	Y
DME	80%	$ -	Y	80%	$ -	Y	80%	$ -	Y	80%	$ -	Y
Physical Therapy	0%	$ 40.00	N	0%	$ 40.00	N	0%	$ 35.00	N	80%	$ -	Y
Radiology/X-Ray	0%	$ 40.00	Y	0%	$ 40.00	Y	0%	$ 35.00	Y	80%	$ -	Y
Rx Inputs												
Member Coinsurance	Retail	Mail Order		Retail	Mail Order		Retail	Mail Order		Retail	Mail Order	
Generic	0%	0%		0%	0%		0%	0%		20%	20%	
Brand Formulary	0%	0%		0%	0%		0%	0%		20%	20%	
Brand Non Formulary	0%	0%		0%	0%		0%	0%		20%	20%	
Specialty	0%	0%		0%	0%		0%	0%		20%	20%	
Member Copay	Retail	Mail Order		Retail	Mail Order		Retail	Mail Order		Retail	Mail Order	
Generic	$ 12.00	$ 30.00		$ 15.00	$ 37.50		$ 18.00	$ 45.00		$ -	$ -	
Brand Formulary	$ 25.00	$ 62.50		$ 30.00	$ 75.00		$ 35.00	$ 87.50		$ -	$ -	
Brand Non Formulary	$ 50.00	$ 150.00		$ 60.00	$ 180.00		$ 70.00	$ 210.00		$ -	$ -	
Specialty	$ 75.00	$ 225.00		$ 90.00	$ 270.00		$ 100.00	$ 300.00		$ -	$ -	

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	Deductible 87%											
	Option 1			Option 2			Option 3			Option 4		
Wakely AV	87.0%			87.0%			87.2%			87.1%		
Federal AV (2015 AVC)	80.1%			82.1%			84.3%			86.4%		
Deductible	*In-Network*	*Out-of-Netwo*	*Out-of-Area*	*In-Network*	*Out-of-Netwo*	*Out-of-Area*	*In-Network*	*Out-of-Netwo*	*Out-of-Area*	*In-Network*	*Out-of-Netwo*	*Out-of-Area*
Individual	$500	$0	$0	$750	$0	$0	$1,000	$0	$0	$1,000	$0	$0
Family	$1,000	$0	$0	$1,500	$0	$0	$2,000	$0	$0	$2,000	$0	$0
MOOP	*In-Network*	*Out-of-Netwo*	*Out-of-Area*	*In-Network*	*Out-of-Netwo*	*Out-of-Area*	*In-Network*	*Out-of-Netwo*	*Out-of-Area*	*In-Network*	*Out-of-Netwo*	*Out-of-Area*
Individual	$4,500	$0	$0	$3,000	$0	$0	$2,200	$0	$0	$2,500	$0	$0
Family	$9,000	$0	$0	$6,000	$0	$0	$4,400	$0	$0	$5,000	$0	$0
Medical/Rx Deductibles Combined?	No			No			No			No		
Medical/Rx MOOPs Combined?	Yes			Yes			Yes			Yes		
	Plan Coinsurance	Copayments	Deductible Applies?	Plan Coinsurance	Copayments	Deductible Applies?	Plan Coinsurance	Copayments	Deductible Applies?	Plan Coinsurance	Copayments	Deductible Applies?
Inpatient Hospital												
Medical	90%	$ -	Y	90%	$ -	Y	90%	$ -	Y	90%	$ -	Y
Surgical	90%	$ -	Y	90%	$ -	Y	90%	$ -	Y	90%	$ -	Y
Maternity	90%	$ -	Y	90%	$ -	Y	90%	$ -	Y	90%	$ -	Y
Mental Health	90%	$ -	Y	90%	$ -	Y	90%	$ -	Y	90%	$ -	Y
Chemical Dependency	90%	$ -	Y	90%	$ -	Y	90%	$ -	Y	90%	$ -	Y
Skilled Nursing Facility	90%	$ -	Y	90%	$ -	Y	90%	$ -	Y	90%	$ -	Y
Outpatient Hospital												
Emergency Room	0%	$ 150.00	Y	0%	$ 125.00	Y	0%	$ 80.00	Y	0%	$ 100.00	Y
Ambulatory Surgery	0%	$ 175.00	Y	0%	$ 150.00	Y	0%	$ 100.00	Y	0%	$ 125.00	Y
Radiology	0%	$ 70.00	Y	0%	$ 50.00	Y	0%	$ 30.00	Y	0%	$ 50.00	Y
Laboratory	0%	$ 65.00	Y	0%	$ 45.00	Y	0%	$ 25.00	Y	0%	$ 45.00	Y
Maternity Visits	0%	$ 50.00	Y	0%	$ 35.00	Y	0%	$ 30.00	Y	0%	$ 35.00	Y
Mental Health	0%	$ 25.00	N	0%	$ 20.00	N	0%	$ 15.00	N	0%	$ 20.00	N
Chemical Dependency	0%	$ 25.00	N	0%	$ 20.00	N	0%	$ 15.00	N	0%	$ 20.00	N
Inpatient Physician												
Medical/Surgical	90%	$ -	Y	90%	$ -	Y	90%	$ -	Y	90%	$ -	Y
Mental Health	90%	$ -	Y	90%	$ -	Y	90%	$ -	Y	90%	$ -	Y
Chemical Dependency	90%	$ -	Y	90%	$ -	Y	90%	$ -	Y	90%	$ -	Y
Maternity	90%	$ -	Y	90%	$ -	Y	90%	$ -	Y	90%	$ -	Y
Outpatient Physician												
Physician Office Visits	0%	$ 25.00	N	0%	$ 20.00	N	0%	$ 15.00	N	0%	$ 20.00	N
Specialist Office Visits	0%	$ 35.00	N	0%	$ 30.00	N	0%	$ 20.00	N	0%	$ 30.00	N
Mental Health	0%	$ 25.00	N	0%	$ 20.00	N	0%	$ 15.00	N	0%	$ 20.00	N
Chemical Dependency	0%	$ 25.00	N	0%	$ 20.00	N	0%	$ 15.00	N	0%	$ 20.00	N
Preventive Care												
Physical Exams. Etc.	100%	$ -	N	100%	$ -	N	100%	$ -	N	100%	$ -	N
Outpatient Miscellaneous												
Ambulance	0%	$ 65.00	Y	0%	$ 55.00	Y	0%	$ 55.00	Y	85%	$ -	Y
Dialysis	0%	$ 40.00	Y	0%	$ 40.00	Y	0%	$ 35.00	Y	85%	$ -	Y
DME	90%	$ -	Y	90%	$ -	Y	90%	$ -	Y	85%	$ -	Y
Physical Therapy	0%	$ 40.00	N	0%	$ 40.00	N	0%	$ 35.00	N	85%	$ -	Y
Radiology/X-Ray	0%	$ 40.00	Y	0%	$ 40.00	Y	0%	$ 35.00	Y	85%	$ -	Y
Rx Inputs												
Member Coinsurance	Retail	Mail Order		Retail	Mail Order		Retail	Mail Order		Retail	Mail Order	
Generic	0%	0%		0%	0%		0%	0%		15%	15%	
Brand Formulary	0%	0%		0%	0%		0%	0%		15%	15%	
Brand Non Formulary	0%	0%		0%	0%		0%	0%		15%	15%	
Specialty	0%	0%		0%	0%		0%	0%		15%	15%	
Member Copay	Retail	Mail Order		Retail	Mail Order		Retail	Mail Order		Retail	Mail Order	
Generic	$ 8.00	$ 20.00		$ 12.00	$ 30.00		$ 15.00	$ 37.50		$ -	$ -	
Brand Formulary	$ 20.00	$ 50.00		$ 25.00	$ 62.50		$ 30.00	$ 75.00		$ -	$ -	
Brand Non Formulary	$ 35.00	$ 105.00		$ 50.00	$ 150.00		$ 60.00	$ 180.00		$ -	$ -	
Specialty	$ 60.00	$ 180.00		$ 70.00	$ 210.00		$ 90.00	$ 270.00		$ -	$ -	

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	Deductible 94%											
	Option 1			Option 2			Option 3			Option 4		
Wakely AV	93.9%			94.1%			93.9%			94.1%		
Federal AV (2015 AVC)	87.2%			90.9%			92.9%			91.4%		
Deductible	*In-Network*	*Out-of-Netwo*	*Out-of-Area*	*In-Network*	*Out-of-Netwo*	*Out-of-Area*	*In-Network*	*Out-of-Netwo*	*Out-of-Area*	*In-Network*	*Out-of-Netwo*	*Out-of-Area*
Individual	$100	$0	$0	$250	$0	$0	$400	$0	$0	$250	$0	$0
Family	$200	$0	$0	$500	$0	$0	$800	$0	$0	$500	$0	$0
MOOP	*In-Network*	*Out-of-Netwo*	*Out-of-Area*	*In-Network*	*Out-of-Netwo*	*Out-of-Area*	*In-Network*	*Out-of-Netwo*	*Out-of-Area*	*In-Network*	*Out-of-Netwo*	*Out-of-Area*
Individual	$2,000	$0	$0	$1,000	$0	$0	$600	$0	$0	$1,500	$0	$0
Family	$4,000	$0	$0	$2,000	$0	$0	$1,200	$0	$0	$3,000	$0	$0
Medical/Rx Deductibles Combined?	No			No			No			No		
Medical/Rx MOOPs Combined?	Yes			Yes			Yes			Yes		
	Plan Coinsurance	Copayments	Deductible Applies?	Plan Coinsurance	Copayments	Deductible Applies?	Plan Coinsurance	Copayments	Deductible Applies?	Plan Coinsurance	Copayments	Deductible Applies?
Inpatient Hospital												
Medical	90%	$ -	Y	90%	$ -	Y	90%	$ -	Y	90%	$ -	Y
Surgical	90%	$ -	Y	90%	$ -	Y	90%	$ -	Y	90%	$ -	Y
Maternity	90%	$ -	Y	90%	$ -	Y	90%	$ -	Y	90%	$ -	Y
Mental Health	90%	$ -	Y	90%	$ -	Y	90%	$ -	Y	90%	$ -	Y
Chemical Dependency	90%	$ -	Y	90%	$ -	Y	90%	$ -	Y	90%	$ -	Y
Skilled Nursing Facility	90%	$ -	Y	90%	$ -	Y	90%	$ -	Y	90%	$ -	Y
Outpatient Hospital												
Emergency Room	0%	$ 125.00	Y	0%	$ 100.00	Y	0%	$ 75.00	Y	0%	$ 100.00	Y
Ambulatory Surgery	0%	$ 175.00	Y	0%	$ 150.00	Y	0%	$ 100.00	Y	0%	$ 125.00	Y
Radiology	0%	$ 70.00	Y	0%	$ 50.00	Y	0%	$ 30.00	Y	0%	$ 50.00	Y
Laboratory	0%	$ 65.00	Y	0%	$ 45.00	Y	0%	$ 25.00	Y	0%	$ 45.00	Y
Maternity Visits	0%	$ 50.00	Y	0%	$ 35.00	Y	0%	$ 25.00	Y	0%	$ 35.00	Y
Mental Health	0%	$ 20.00	N	0%	$ 15.00	N	0%	$ 10.00	N	0%	$ 15.00	N
Chemical Dependency	0%	$ 20.00	N	0%	$ 15.00	N	0%	$ 10.00	N	0%	$ 15.00	N
Inpatient Physician												
Medical/Surgical	90%	$ -	Y	90%	$ -	Y	90%	$ -	Y	90%	$ -	Y
Mental Health	90%	$ -	Y	90%	$ -	Y	90%	$ -	Y	90%	$ -	Y
Chemical Dependency	90%	$ -	Y	90%	$ -	Y	90%	$ -	Y	90%	$ -	Y
Maternity	90%	$ -	Y	90%	$ -	Y	90%	$ -	Y	90%	$ -	Y
Outpatient Physician												
Physician Office Visits	0%	$ 20.00	N	0%	$ 15.00	N	0%	$ 10.00	N	0%	$ 15.00	N
Specialist Office Visits	0%	$ 25.00	N	0%	$ 25.00	N	0%	$ 20.00	N	0%	$ 25.00	N
Mental Health	0%	$ 20.00	N	0%	$ 15.00	N	0%	$ 10.00	N	0%	$ 15.00	N
Chemical Dependency	0%	$ 20.00	N	0%	$ 15.00	N	0%	$ 10.00	N	0%	$ 15.00	N
Preventive Care												
Physical Exams. Etc.	100%	$ -	N	100%	$ -	N	100%	$ -	N	100%	$ -	N
Outpatient Miscellaneous												
Ambulance	0%	$ 65.00	Y	0%	$ 55.00	Y	0%	$ 55.00	Y	90%	$ -	Y
Dialysis	0%	$ 40.00	Y	0%	$ 40.00	Y	0%	$ 30.00	Y	90%	$ -	Y
DME	100%	$ -	Y	100%	$ -	Y	100%	$ -	Y	90%	$ -	Y
Physical Therapy	0%	$ 40.00	N	0%	$ 40.00	N	0%	$ 30.00	N	90%	$ -	Y
Radiology/X-Ray	0%	$ 40.00	Y	0%	$ 40.00	Y	0%	$ 25.00	Y	90%	$ -	Y
Rx Inputs												
Member Coinsurance	Retail	Mail Order		Retail	Mail Order		Retail	Mail Order		Retail	Mail Order	
Generic	0%	0%		0%	0%		0%	0%		10%	10%	
Brand Formulary	0%	0%		0%	0%		0%	0%		10%	10%	
Brand Non Formulary	0%	0%		0%	0%		0%	0%		10%	10%	
Specialty	0%	0%		0%	0%		0%	0%		10%	10%	
Member Copay	Retail	Mail Order		Retail	Mail Order		Retail	Mail Order		Retail	Mail Order	
Generic	$ 8.00	$ 20.00		$ 10.00	$ 25.00		$ 12.00	$ 30.00		$ -	$ -	
Brand Formulary	$ 15.00	$ 37.50		$ 20.00	$ 50.00		$ 25.00	$ 62.50		$ -	$ -	
Brand Non Formulary	$ 35.00	$ 105.00		$ 50.00	$ 150.00		$ 55.00	$ 165.00		$ -	$ -	
Specialty	$ 60.00	$ 180.00		$ 70.00	$ 210.00		$ 80.00	$ 240.00		$ -	$ -	

Vermont 2017 Plan Design Options
DRAFT - For illustrative and discussion purposes only

	HDHP 80%			HDHP 80%			HDHP 87%			HDHP 94%		
Annual HSA Contribution	$0.00			$120.00			$840.00			$1,800.00		
Wakely AV	78.5%			79.9%			86.7%			93.9%		
Federal AV (2015 AVC)	71.1%			73.0%			81.1%			88.6%		
Deductible	*In-Network*	*Out-of-Network*	*Out-of-Area*	*In-Network*	*Out-of-Network*	*Out-of-Area*	*In-Network*	*Out-of-Network*	*Out-of-Area*	*In-Network*	*Out-of-Network*	*Out-of-Area*
Individual	$2,000	$0	$0	$2,000	$0	$0	$2,000	$0	$0	$2,000	$0	$0
Family	$4,000	$0	$0	$4,000	$0	$0	$4,000	$0	$0	$4,000	$0	$0
Medical/Rx Deductibles Combined?	Yes			Yes			Yes			Yes		
Medical/Rx MOOPs Combined?	Yes			Yes			Yes			Yes		
MOOP	*In-Network*	*Out-of-Network*	*Out-of-Area*	*In-Network*	*Out-of-Network*	*Out-of-Area*	*In-Network*	*Out-of-Network*	*Out-of-Area*	*In-Network*	*Out-of-Network*	*Out-of-Area*
Individual	$4,250	$0	$0	$4,250	$0	$0	$4,250	$0	$0	$4,250	$0	$0
Family	$8,500	$0	$0	$8,500	$0	$0	$8,500	$0	$0	$8,500	$0	$0
	Plan Coinsurance	Copayments	Deductible Applies?	Plan Coinsurance	Copayments	Deductible Applies?	Plan Coinsurance	Copayments	Deductible Applies?	Plan Coinsurance	Copayments	Deductible Applies?
Inpatient Hospital												
Medical	85%		Y	85%		Y	85%	$ -	Y	85%		Y
Surgical	85%		Y	85%		Y	85%	$ -	Y	85%		Y
Maternity	85%		Y	85%		Y	85%	$ -	Y	85%		Y
Mental Health	85%		Y	85%		Y	85%	$ -	Y	85%		Y
Chemical Dependency	85%		Y	85%		Y	85%	$ -	Y	85%		Y
Skilled Nursing Facility	85%		Y	85%		Y	85%	$ -	Y	85%		Y
Outpatient Hospital												
Emergency Room		$ 65.00	Y		$ 65.00	Y		$ 65.00	Y		$ 65.00	Y
Ambulatory Surgery	85%		Y	85%		Y	85%		Y	85%		Y
Radiology	85%		Y	85%		Y	85%		Y	85%		Y
Laboratory	85%		Y	85%		Y	85%		Y	85%		Y
Maternity Visits	85%		Y	85%		Y	85%		Y	85%		Y
Mental Health		$ 20.00	Y		$ 20.00	Y		$ 20.00	Y		$ 20.00	Y
Chemical Dependency		$ 20.00	Y		$ 20.00	Y		$ 20.00	Y		$ 20.00	Y
Inpatient Physician												
Medical/Surgical	85%		Y	85%		Y	85%	$ -	Y	85%		Y
Mental Health	85%		Y	85%		Y	85%	$ -	Y	85%		Y
Chemical Dependency	85%		Y	85%		Y	85%	$ -	Y	85%		Y
Maternity	85%		Y	85%		Y	85%	$ -	Y	85%		Y
Outpatient Physician												
Physician Office Visits		$ 20.00	Y		$ 20.00	Y		$ 20.00	Y		$ 20.00	Y
Specialist Office Visits		$ 30.00	Y		$ 30.00	Y		$ 30.00	Y		$ 30.00	Y
Mental Health		$ 20.00	Y		$ 20.00	Y		$ 20.00	Y		$ 20.00	Y
Chemical Dependency		$ 20.00	Y		$ 20.00	Y		$ 20.00	Y		$ 20.00	Y
Preventive Care												
Physical Exams. Etc.	100%		N	100%		N	100%	$ -	N	100%		N
Outpatient Miscellaneous												
Ambulance	85%		Y	85%		Y	85%		Y	85%		Y
Dialysis	85%		Y	85%		Y	85%		Y	85%		Y
DME	85%		Y	85%		Y	85%		Y	85%		Y
Physical Therapy		$ 30.00	Y		$ 30.00	Y		$ 30.00	Y		$ 30.00	Y
Radiology/X-Ray	85%		Y	85%		Y	85%		Y	85%		Y
Rx Inputs												
Plan Coinsurance	Retail	Mail Order		Retail	Mail Order		Retail	Mail Order		Retail	Mail Order	
Generic												
Brand Formulary												
Brand Non Formulary												
Specialty												
Member Copay	Retail	Mail Order		Retail	Mail Order		Retail	Mail Order		Retail	Mail Order	
Generic	$ 10.00	$ 25.00		$ 10.00	$ 25.00		$ 10.00	$ 25.00		$ 10.00	$ 25.00	
Brand Formulary	$ 20.00	$ 50.00		$ 20.00	$ 50.00		$ 20.00	$ 50.00		$ 20.00	$ 50.00	
Brand Non Formulary	$ 50.00	$ 150.00		$ 50.00	$ 150.00		$ 50.00	$ 150.00		$ 50.00	$ 150.00	
Specialty	$ 75.00	$ 225.00		$ 75.00	$ 225.00		$ 75.00	$ 225.00		$ 75.00	$ 225.00	

Vermont 2017 Plan Design Options
DRAFT - For illustrative and discussion purpose

	HDHP BCBSVT 80%			HDHP BCBSVT 80%			HDHP BCBSVT 87%			HDHP BCBSVT 94%		
Annual HSA Contribution	$0.00			$100.00			$720.00			$1,680.00		
Wakely AV	79.5%			80.7%			86.7%			94.3%		
Federal AV (2015 AVC)	75.2%			76.7%			84.6%			93.8%		
Deductible	*In-Network*	*Out-of-Network*	*Out-of-Area*	*In-Network*	*Out-of-Network*	*Out-of-Area*	*In-Network*	*Out-of-Network*	*Out-of-Area*	*In-Network*	*Out-of-Network*	*Out-of-Area*
Individual	$2,500	$0	$0	$2,500	$0	$0	$2,500	$0	$0	$2,500	$0	$0
Family	$5,000	$0	$0	$5,000	$0	$0	$5,000	$0	$0	$5,000	$0	$0
Medical/Rx Deductibles Combined?	Yes			Yes			Yes			Yes		
Medical/Rx MOOPs Combined?	Yes			Yes			Yes			Yes		
MOOP	*In-Network*	*Out-of-Network*	*Out-of-Area*	*In-Network*	*Out-of-Network*	*Out-of-Area*	*In-Network*	*Out-of-Network*	*Out-of-Area*	*In-Network*	*Out-of-Network*	*Out-of-Area*
Individual	$2,500	$0	$0	$2,500	$0	$0	$2,500	$0	$0	$2,500	$0	$0
Family	$5,000	$0	$0	$5,000	$0	$0	$5,000	$0	$0	$5,000	$0	$0
	Plan Coinsurance	**Copayments**	**Deductible Applies?**	**Plan Coinsurance**	**Copayments**	**Deductible Applies?**	**Plan Coinsurance**	**Copayments**	**Deductible Applies?**	**Plan Coinsurance**	**Copayments**	**Deductible Applies?**
Inpatient Hospital												
Medical	100%		Y	100%		Y	100%		Y	100%		Y
Surgical	100%		Y	100%		Y	100%		Y	100%		Y
Maternity	100%		Y	100%		Y	100%		Y	100%		Y
Mental Health	100%		Y	100%		Y	100%		Y	100%		Y
Chemical Dependency	100%		Y	100%		Y	100%		Y	100%		Y
Skilled Nursing Facility	100%		Y	100%		Y	100%		Y	100%		Y
Outpatient Hospital												
Emergency Room	100%		Y	100%		Y	100%		Y	100%		Y
Ambulatory Surgery	100%		Y	100%		Y	100%		Y	100%		Y
Radiology	100%		Y	100%		Y	100%		Y	100%		Y
Laboratory	100%		Y	100%		Y	100%		Y	100%		Y
Maternity Visits	100%		Y	100%		Y	100%		Y	100%		Y
Mental Health	100%		Y	100%		Y	100%		Y	100%		Y
Chemical Dependency	100%		Y	100%		Y	100%		Y	100%		Y
Inpatient Physician												
Medical/Surgical	100%		Y	100%		Y	100%		Y	100%		Y
Mental Health	100%		Y	100%		Y	100%		Y	100%		Y
Chemical Dependency	100%		Y	100%		Y	100%		Y	100%		Y
Maternity	100%		Y	100%		Y	100%		Y	100%		Y
Outpatient Physician												
Physician Office Visits	100%		Y	100%		Y	100%		Y	100%		Y
Specialist Office Visits	100%		Y	100%		Y	100%		Y	100%		Y
Mental Health	100%		Y	100%		Y	100%		Y	100%		Y
Chemical Dependency	100%		Y	100%		Y	100%		Y	100%		Y
Preventive Care												
Physical Exams. Etc.	100%		N	100%		N	100%		N	100%		N
Outpatient Miscellaneous												
Ambulance	100%		Y	100%		Y	100%		Y	100%		Y
Dialysis	100%		Y	100%		Y	100%		Y	100%		Y
DME	100%		Y	100%		Y	100%		Y	100%		Y
Physical Therapy	100%		Y	100%		Y	100%		Y	100%		Y
Radiology/X-Ray	100%		Y	100%		Y	100%		Y	100%		Y
Rx Inputs												
Plan Coinsurance	**Retail**	**Mail Order**		**Retail**	**Mail Order**		**Retail**	**Mail Order**		**Retail**	**Mail Order**	
Generic	100%	100%		100%	100%		100%	100%		100%	100%	
Brand Formulary	100%	100%		100%	100%		100%	100%		100%	100%	
Brand Non Formulary	100%	100%		100%	100%		100%	100%		100%	100%	
Specialty	100%	100%		100%	100%		100%	100%		100%	100%	
Member Copay	**Retail**	**Mail Order**		**Retail**	**Mail Order**		**Retail**	**Mail Order**		**Retail**	**Mail Order**	
Generic	$ -	$ -		$ -	$ -		$ -	$ -		$ -	$ -	
Brand Formulary	$ -	$ -		$ -	$ -		$ -	$ -		$ -	$ -	
Brand Non Formulary	$ -	$ -		$ -	$ -		$ -	$ -		$ -	$ -	
Specialty	$ -	$ -		$ -	$ -		$ -	$ -		$ -	$ -	

Appendix B-5. Presentation to the Green Mountain Care Board
December 4, 2014

Green Mountain Care: Benefits Background Information

Robin J. Lunge, J.D., MHCDS
Director of Health Care Reform, AOA

Devon J. Green, J.D.
Special Counsel on HCR, AOA

December 4, 2014

VERMONT
HEALTH CARE REFORM

Discussion for Today

- Background on Green Mountain Care
- GMC's legal parameters for the benefit plan
- Background on benefits

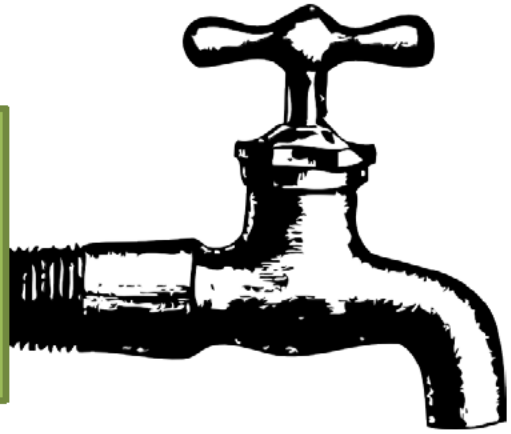
BACKGROUND ON GREEN MOUNTAIN CARE

Health Care Reform Goals: Why Reform?

Four Design & Implementation Zones

Green Mountain Care
- Who's covered?
- For what benefits/services?

Green Mountain Care
- What is the governance?
- What is the business model?
- Who does what?



Payments for services
- What methodology?
- What level?
- How are they inflated over time?

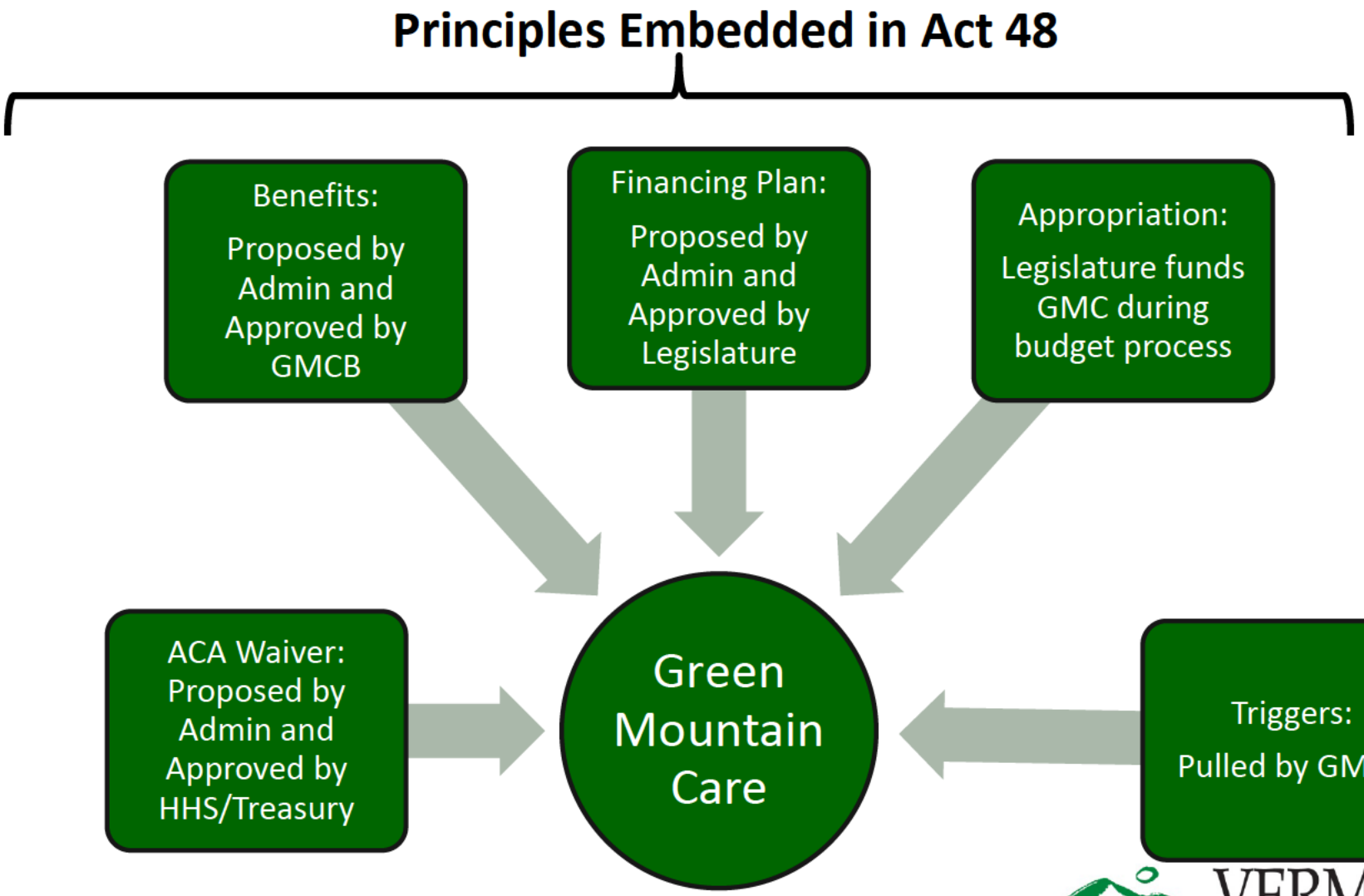
Revenues in
- What sources?
- How do they grow over time?

Informs revenue needs

GMC: Who is covered?

- All Vermonters by virtue of residency
  - Primary for most
  - Secondary for those with other coverage
- Secondary coverage examples:
  - Medicare – Seniors are still covered by Medicare as they are now.
  - Some employees who chose employer-sponsored coverage
- Primary benefits determine extent and cost of the secondary coverage

The Process: What Needs to Happen?

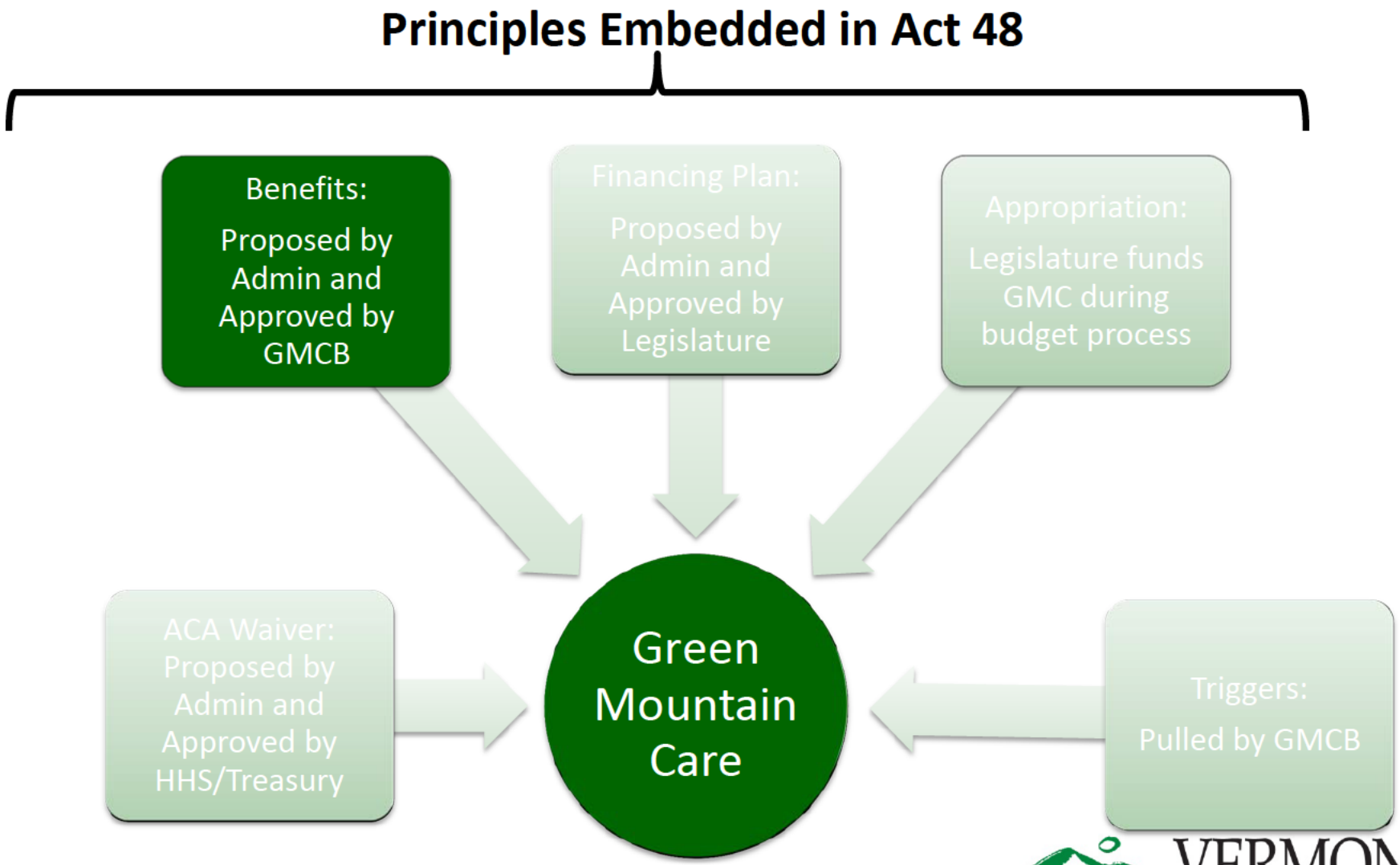


VERMONT
HEALTH CARE REFORM

GMCB Role by Statute

- Defines Green Mountain Care benefits
- Evaluates GMC planning based on the “triggers”
- Proposes annual GMC budget after implementation

The Process: What Needs to Happen?

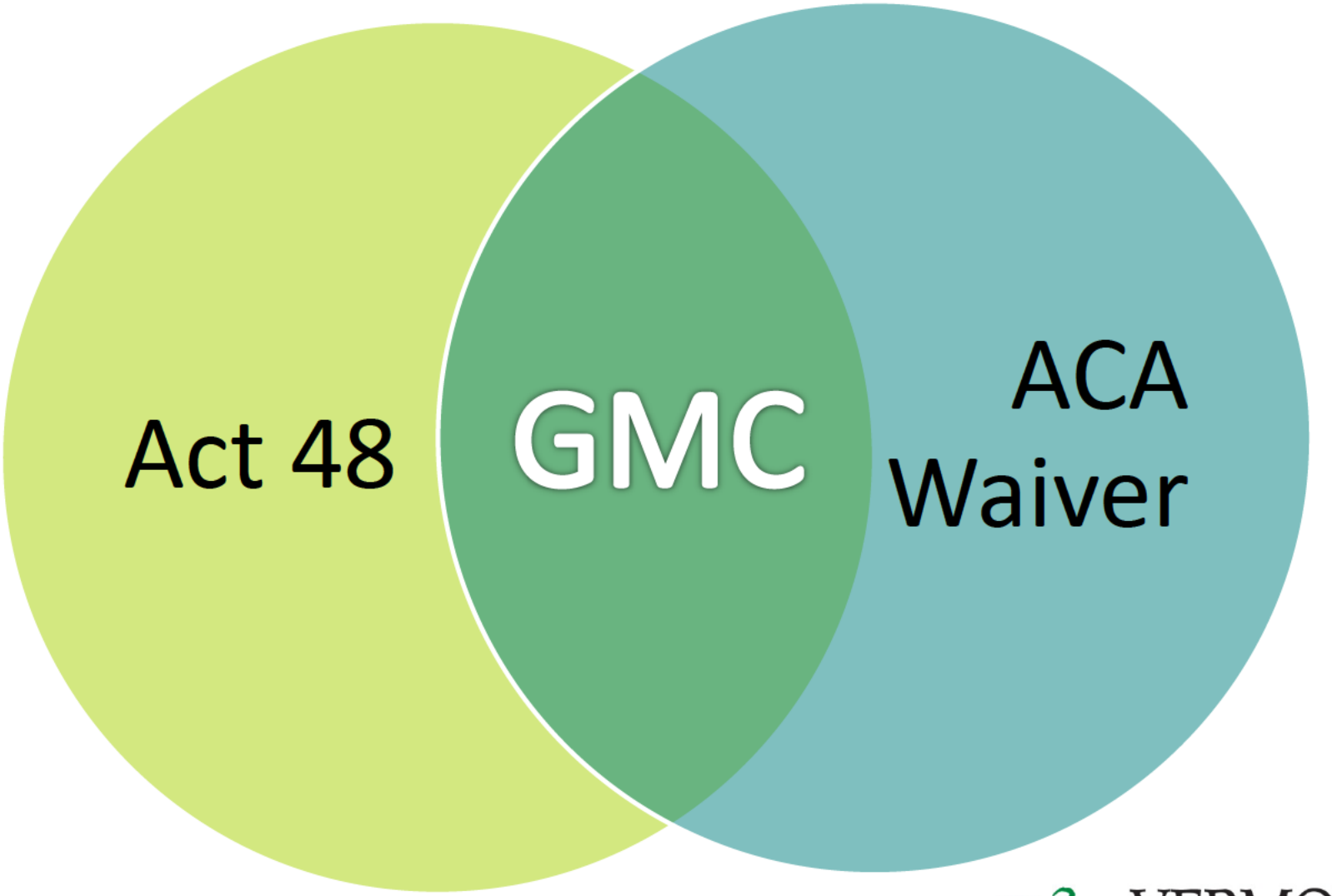


GMCB Role by Statute

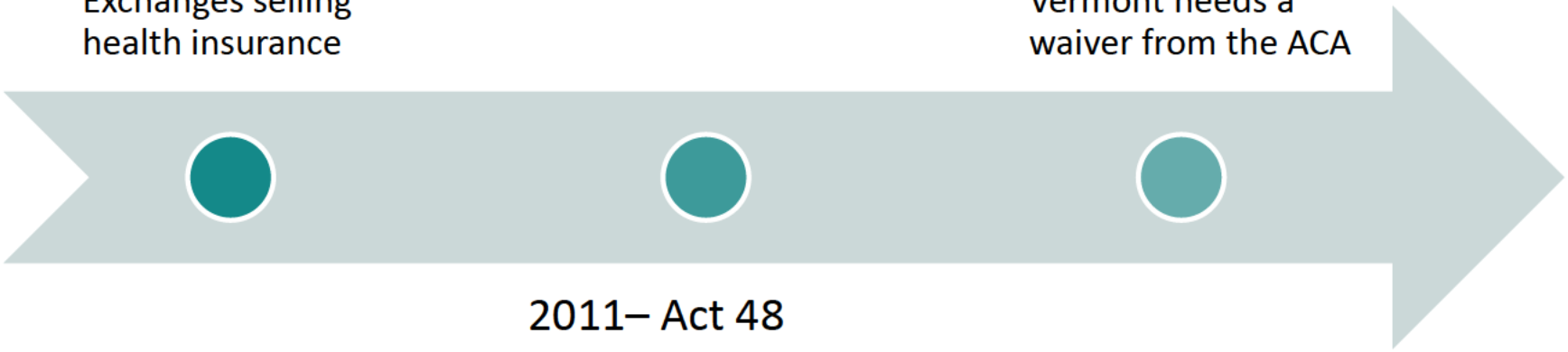
- **Defines Green Mountain Care benefits**
  - Today begins this process with background information on what people have today and the legal parameters going forward.
- Evaluates GMC planning based on the "triggers"
- Proposes annual GMC budget after implementation

GMC'S LEGAL PARAMETERS FOR BENEFIT PLAN

GMC's Legal Parameters



GMC's Legal Parameters



Review of Waivers

	Medicaid Waiver (1115)	ACA Waiver (1332)	All-Payer Waiver (1115A)
What is it?	Allows VT to run Medicaid as a managed care organization and to expand Medicaid programs and services	Will allow Vermont to offer publicly-funded universal health care coverage under Green Mountain Care	Will allow Vermont to move away from fee for service and work towards all-payer rate-setting for health care services (like MD)
When do we get it?	VT has had this waiver since 2005. VT renewed it in 2013 and it will be renewed again for 2017	VT cannot be approved for this waiver until 2017	VT is applying for this waiver as soon as possible

The Medicaid and the ACA Waiver will be done at the same time through a coordinated process

GMC's Legal Parameters– ACA Waiver

- Vermont can request a waiver of the following requirements under the ACA
  - Qualified health plans– insurance plans sold on Exchange (Vermont Health Connect)
  - Exchanges (Vermont Health Connect)
  - Premium tax credits and cost sharing subsidies paid to insurers
  - Individual penalty
  - Large employer penalty

GMC's Legal Parameters– ACA Waiver

The ACA Waiver requires the state to:

- Cover the same or more people than under the ACA
- Provide coverage that is as good or better than the ACA
- Provide coverage that is as affordable or more affordable than the ACA
- Not increase the federal deficit

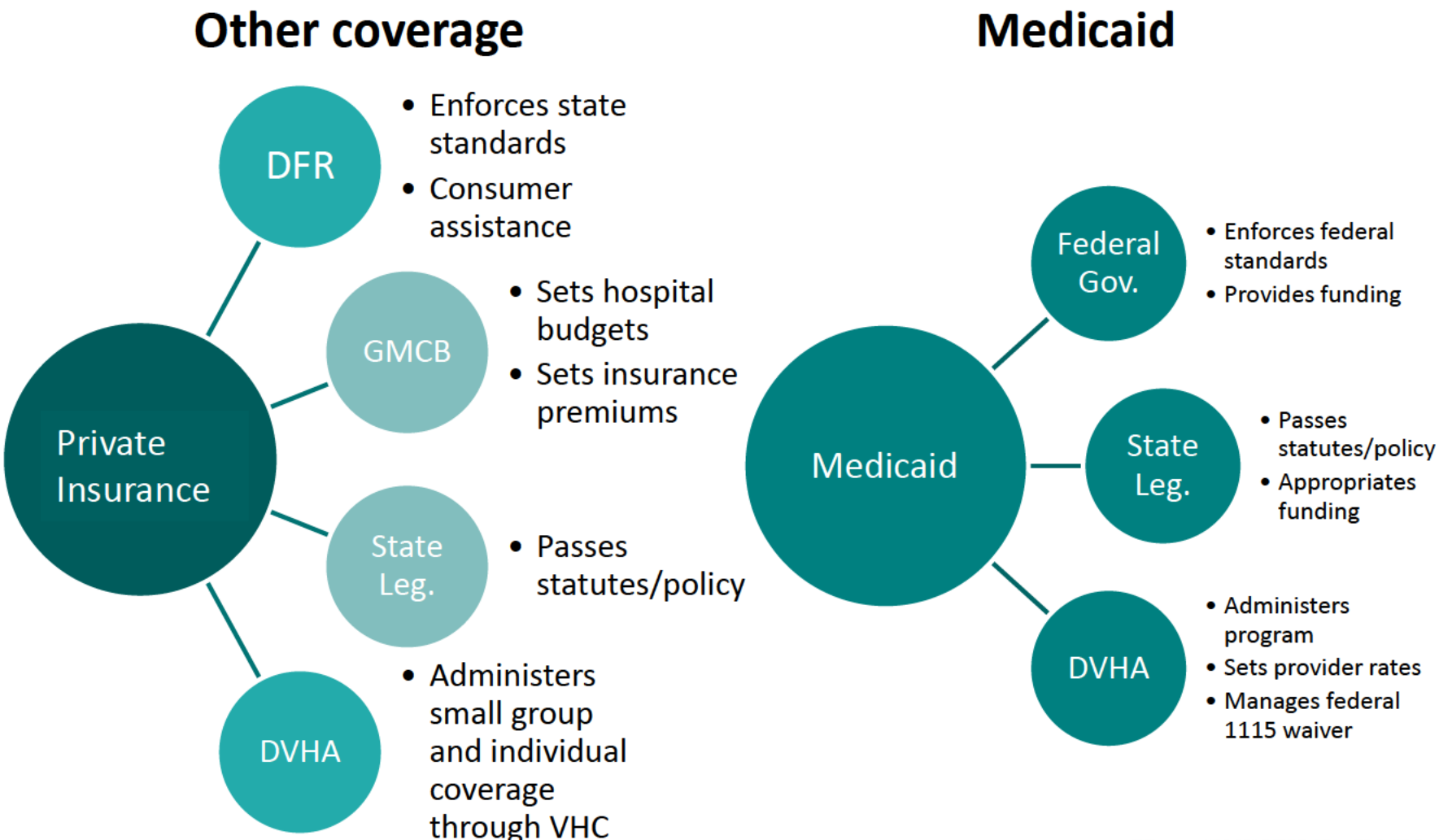
The ACA allows for a coordinated process with Vermont's Medicaid waiver

GMC's Legal Parameters– Medicaid

GMC Medicaid Goals

- One program– Green Mountain Care
- Two different covered services packages
- Cost sharing stays the same– is integrated into sliding scale
- Federal protections remain the same
- Medicaid funding stream, then separate payers

Current Medicaid System



GMC Medicaid

GMC's Legal Parameters– Medicaid

- Under state law, Medicaid benefits must be the same as the Medicaid benefit package on January 1, 2014 for the first year of Green Mountain Care
  - Same covered services
    - See next slide
  - Same cost-sharing
    - $1-$3 for prescriptions
    - $3 per day for hospital
    - $3 per visit for dental
- After the first year, the GMCB may modify optional Medicaid benefits, but must maintain federal mandatory Medicaid benefits and meet waiver requirements

GMC's Legal Parameters– Medicaid

Medicaid Mandatory	Medicaid Optional
Inpatient hospital services	Prescription drugs
Outpatient hospital services	Clinic services
EPSDT	Physical therapy
Home health services	Occupational therapy
Physician services	Speech, hearing and language disorder services
Rural Health Clinic services	Respiratory care services
FQHC services	Podiatry services
Laboratory and X-ray services	Optometry services
Family planning services	Dental services
Nurse Midwife services	Dentures
Pediatric and Family Nurse Practitioner Services	Prosthetics
Freestanding Birth Center services	Eyeglasses
Transportation to medical care	Chiropractic services
Tobacco cessation counseling for pregnant women	Personal care
Medical or surgical services by a dentist	Hospice
Nursing facility services for age 21 & older	Case management + more

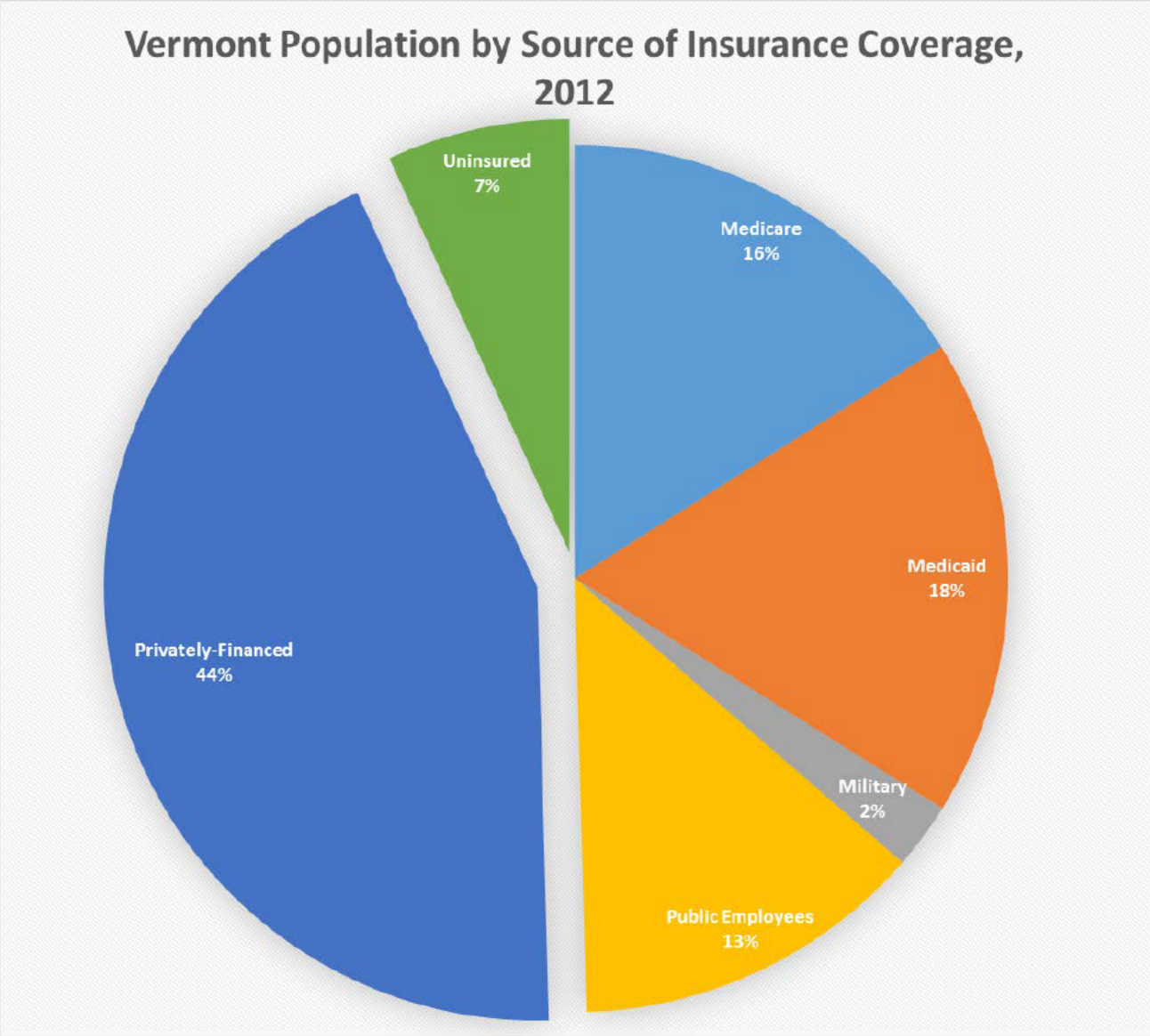
GMCB Role for GMC Benefits

In this process, GMCB:

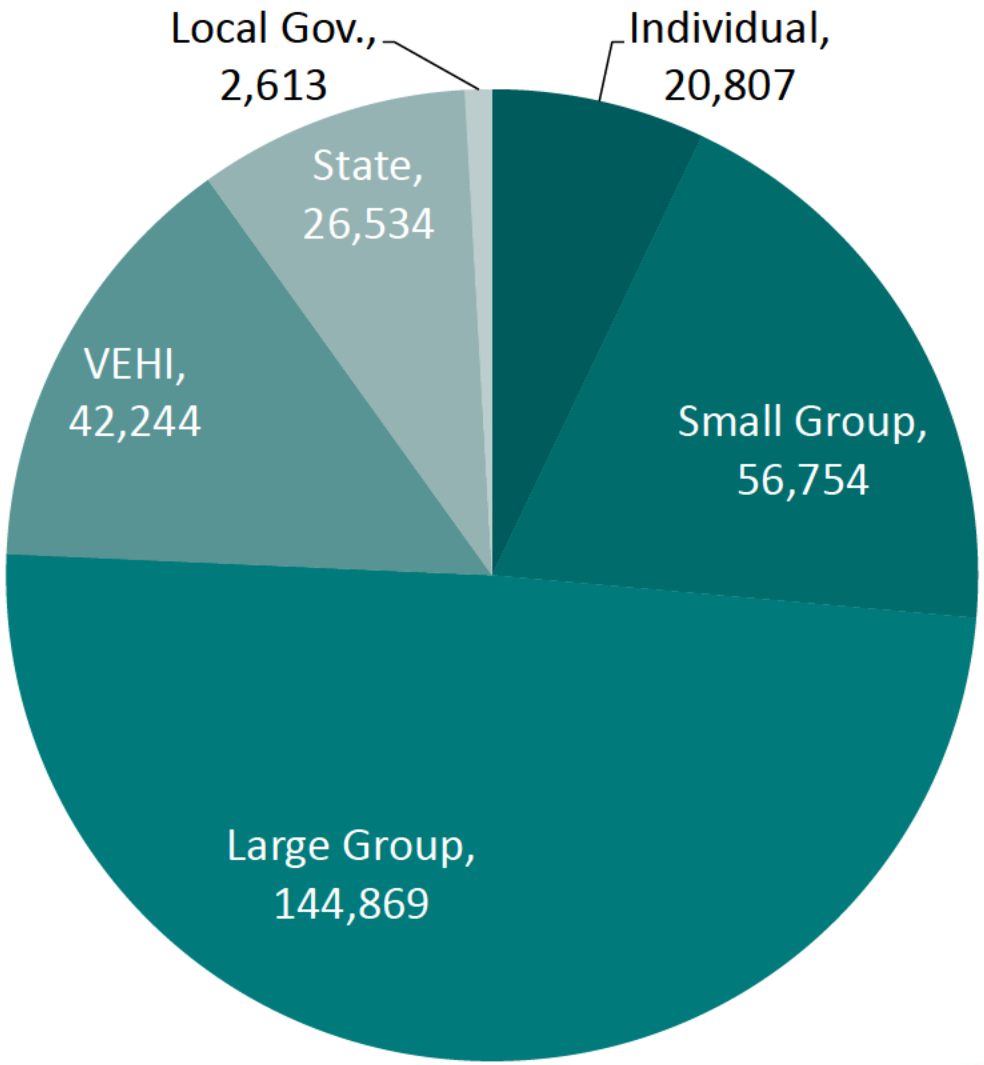
- Defines primary coverage benefits within Act 48 and ACA Waiver parameters
  - Covered services
  - Level of cost sharing
  - Cost sharing
- Keeps Medicaid benefits the same for year one

BACKGROUND ON BENEFITS

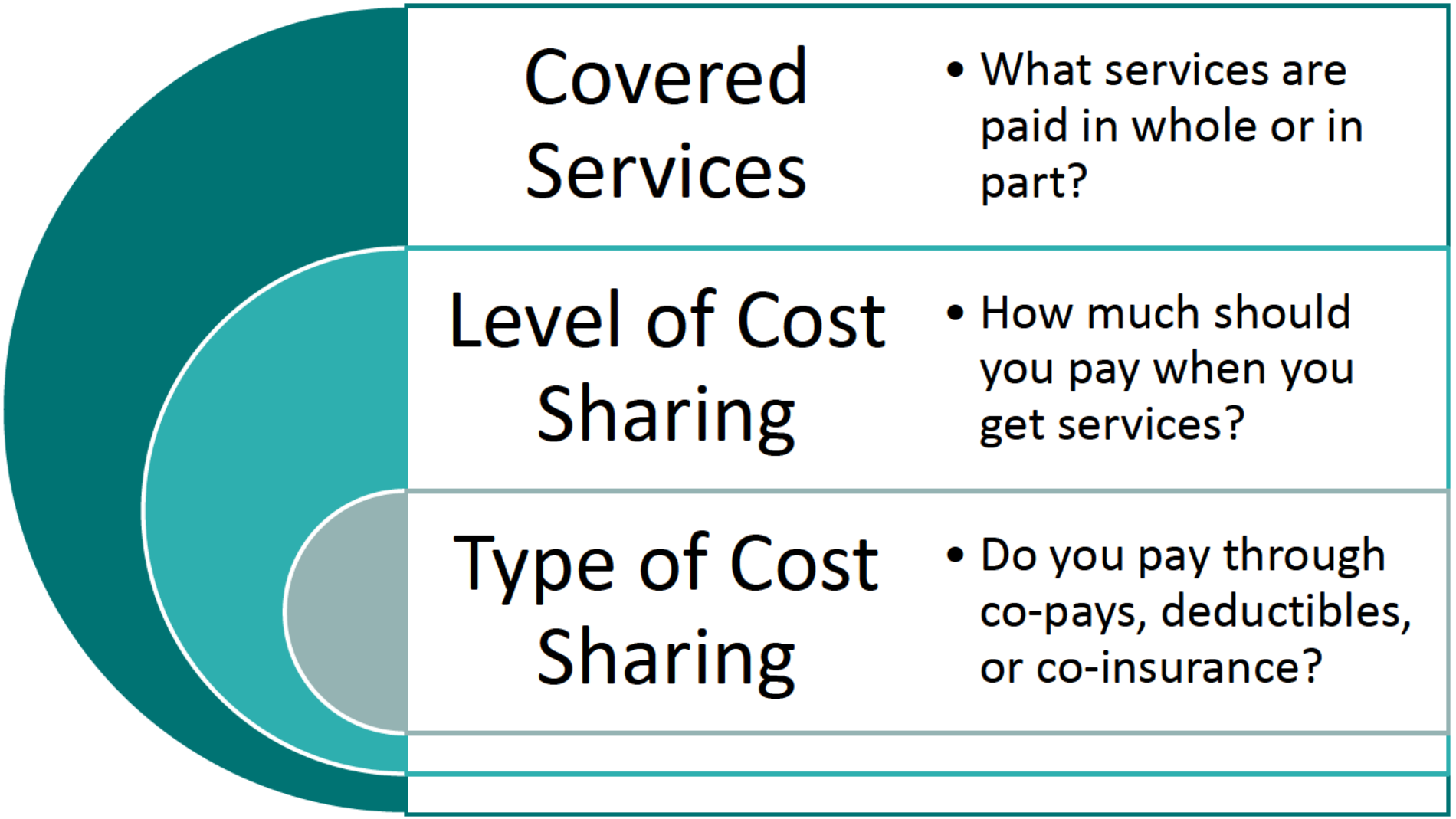
Vermont Health Care Coverage Today



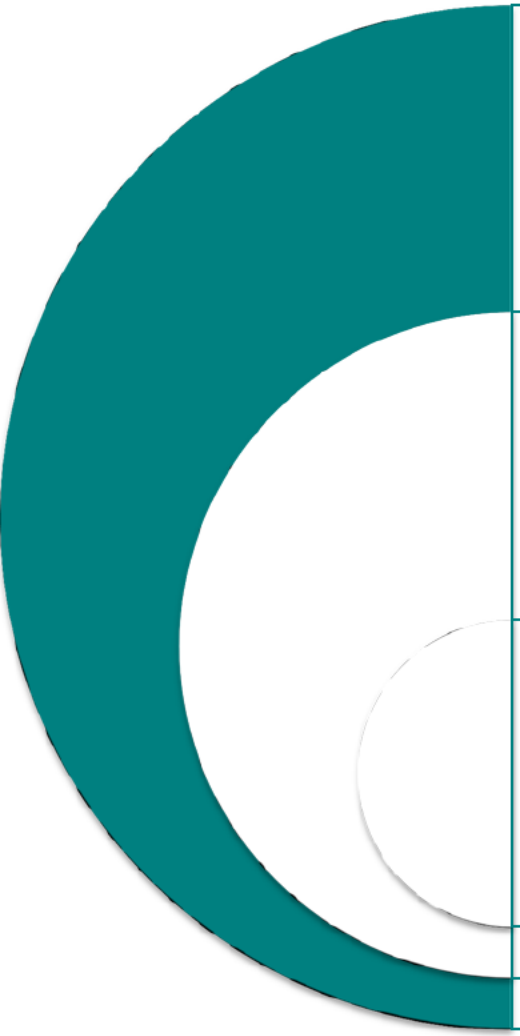
Vermont Health Care Coverage Today



Benefits Background



Benefits and Covered Services



Covered Services	• What services are paid in whole or in part?
Level of Cost Sharing	• How much should you pay when you get services?
Type of Cost Sharing	• Do you pay through co-pays, deductibles, or co-insurance?

Definition: Covered Services

What are covered services?

- Covered services are services, medication, or medical devices that health care coverage pays for in part or completely
- Current examples of covered services typically included in health insurance:
  - Doctor visits
  - Hospital services
  - Specialist visits

Covered Services Today

	Essential Health Benefit	State Employee and Retirees		VEHI Education Employees and Retirees	
		SelectCare	Total Choice	300 Ded	VHP
Chiropractic	Limit 12 visits then prior approval required	Limit 60 visits per year (total visits for PT, OT, ST, Chiro)	Limit 60 visits per year (total visits for PT, OT, ST, Chiro)	Prior approval required after 12th visit	Prior approval required after 12th visit
Infertility	Not covered	Up to $50,000 lifetime max	Up to $50,000 lifetime max	Not covered	Not covered
Bariatric Surgery	Covered	Covered, medical necessity	Covered, medical necessity	With prior approval	With prior approval
Fertility Drugs	Covered	Covered	Covered	Covered	Covered
Routine Eye Exams	1/year for children	$100/2 years	$100/2 years	Not covered	1/year

GMC Covered Services Parameters

- Federal law requires that GMC cover as many or more services than the ACA
  - Means that GMC must include the ACA's essential health benefits as covered services
- State law requires GMC to have the same covered services as Catamount
  - The ACA's essential health benefits have more covered services than Catamount

GMC Benefits and Affordable Care Act

The Affordable Care Act Waiver requires state to:

- Cover the same or more people than under the ACA
- Provide coverage that is as good or better than the ACA
- Provide coverage that is as affordable or more affordable than the ACA
- Not increase the federal deficit

EHB Covered Services

Essential Benefits include all state mandates and the following services:

- Ambulatory patient services
- Emergency services
- Hospitalization
- Maternity and newborn care
- Mental health and substance use disorder services, including behavioral health treatment
- Prescription drugs
- Rehabilitative and habilitative services, and chronic disease management
- Laboratory services
- Preventive and wellness services
- Pediatric services, including oral and vision care

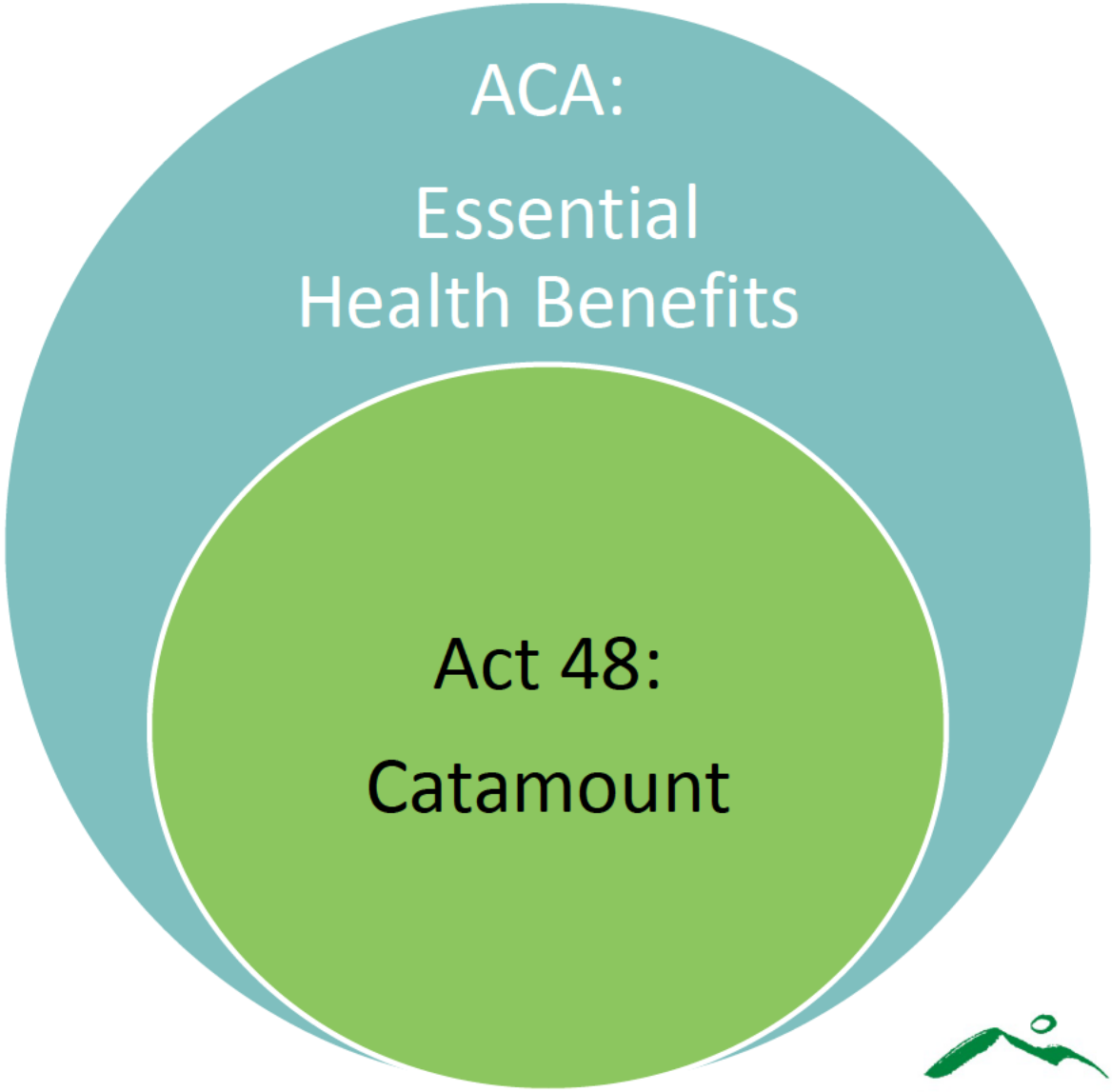
Above and beyond Catamount and other plans

Covered Services – Mental Health

Mental Health Consideration:

- Parity is required by federal law
- VT's laws exceed federal requirements by applying to non-group market, too
- Differences in out-of-network coverage are not limits considered by HHS to carry over to the definition of essential health benefit

GMCB Legal Parameters



VERMONT
HEALTH CARE REFORM

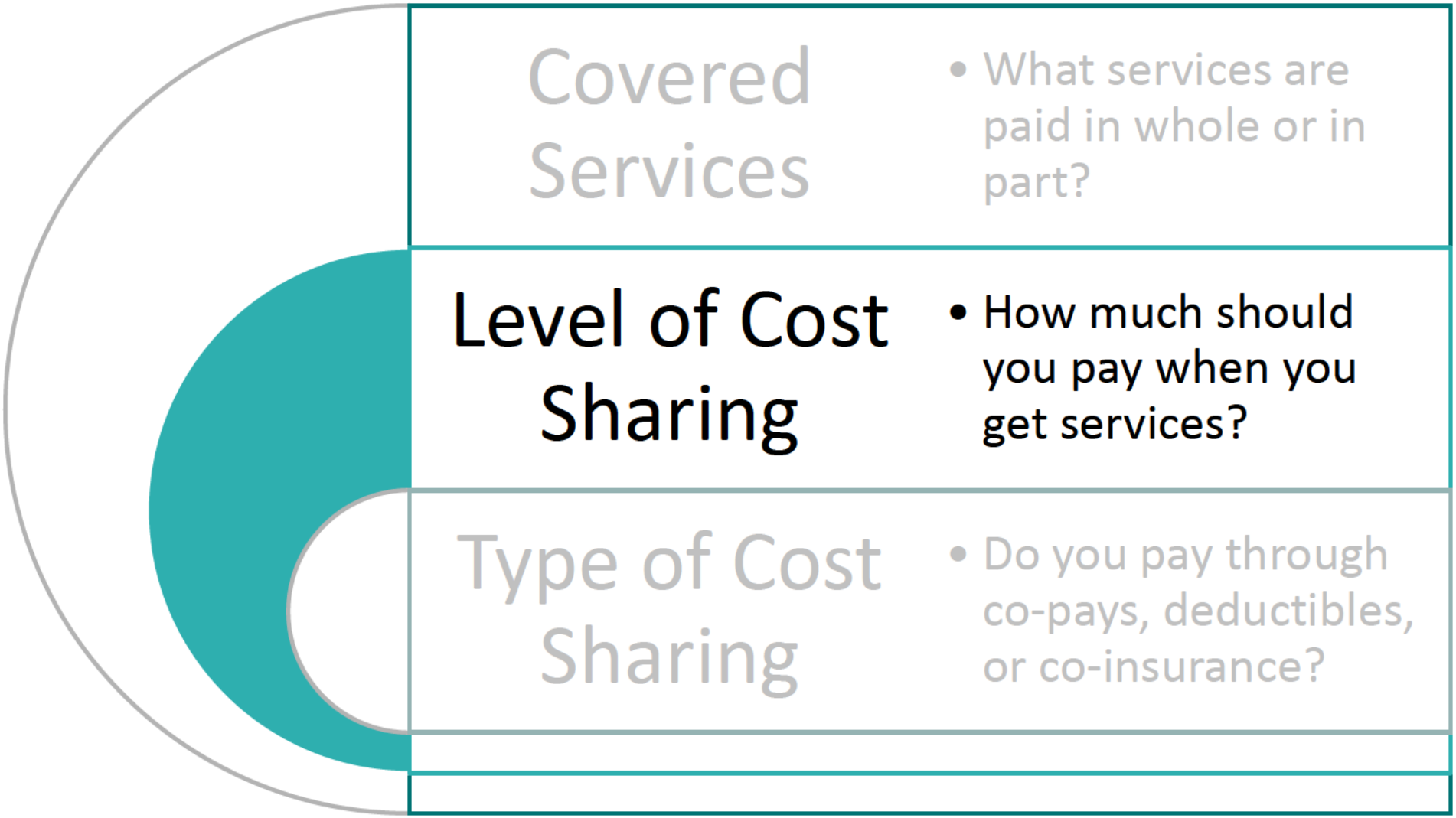
GMC Benefits and Covered Services

State law requires GMCB to consider adding the following services:

- Adult dental
- Adult vision
- Hearing
- Long Term Care Services and Supports

Vermont will not receive any extra federal funding to cover these services

Benefits and Level of Cost Sharing



Level of Cost Sharing: Definitions

What is cost sharing?

- Cost sharing is the part of the plan that you pay when you receive covered services
- Includes:
  - Deductibles
  - Co-Pays
  - Coinsurance
- Does NOT include
  - Premiums

Level of Cost Sharing

- Plans can have different levels of cost sharing but still cover the same services

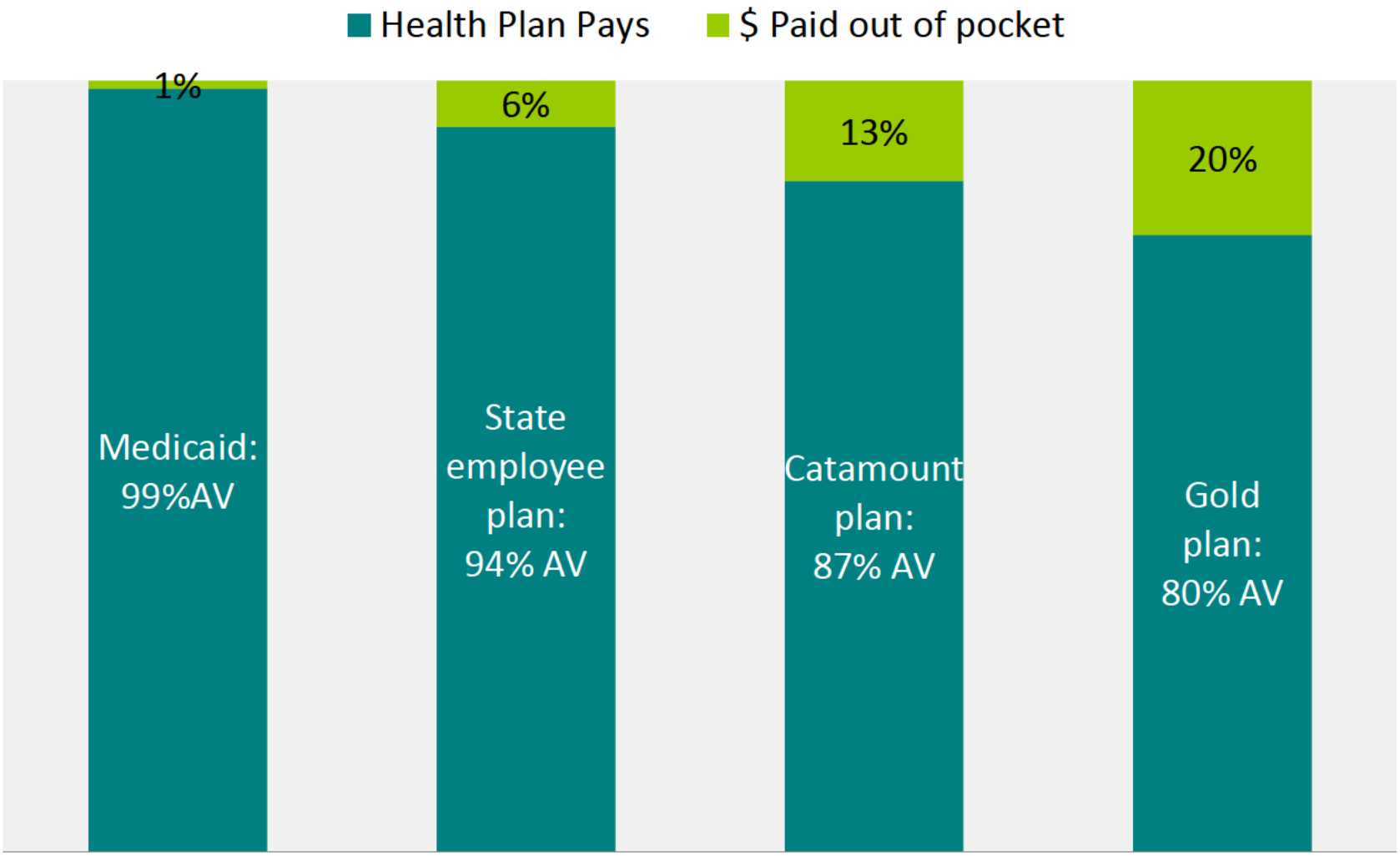
I pay a $20 co-pay when I see my therapist

I pay a $50 co-pay when I see my therapist

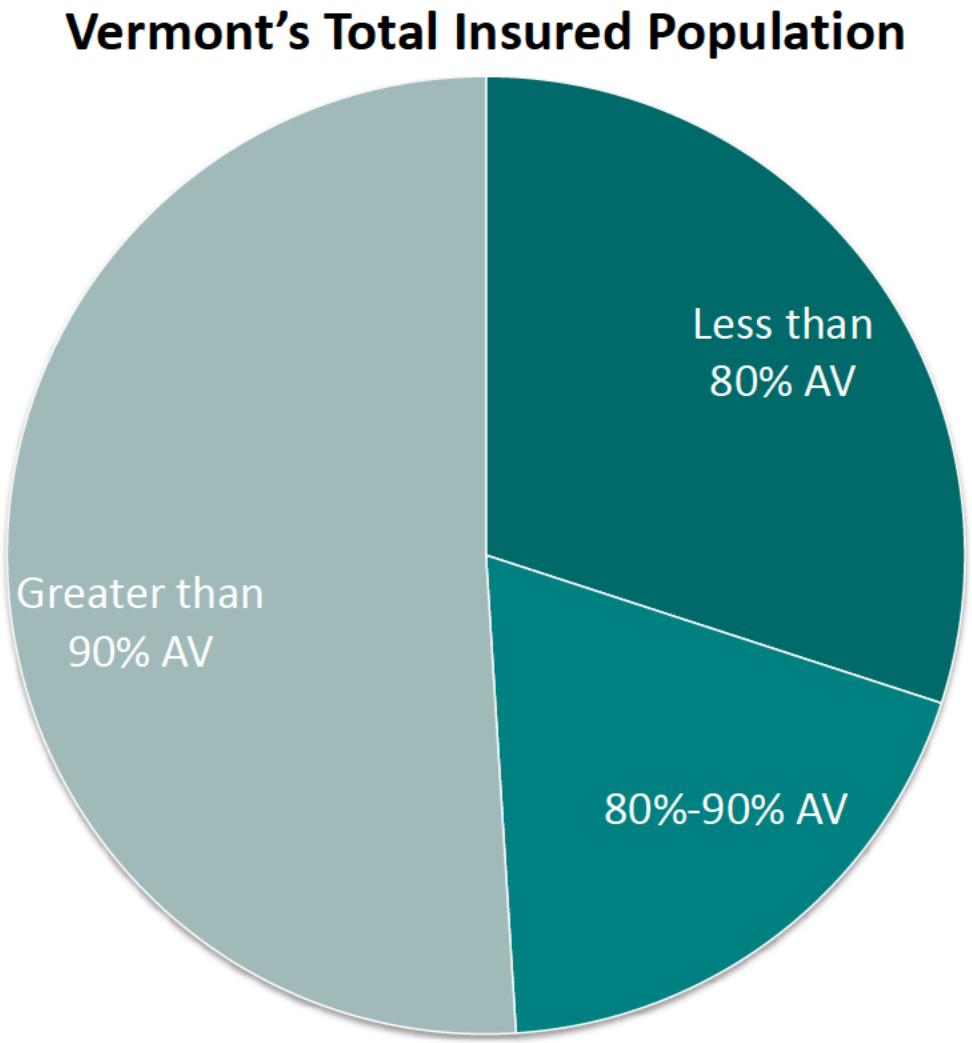
Level of Cost Sharing

- These different levels of cost sharing are called actuarial value (AV)
- Actuarial value means the total average costs of covered services that your plan will cover
- In a plan with a high AV, you will pay less in co-pays, co-insurance, and deductibles
- A plan with a low AV, you will pay more in co-pays, co-insurance, and deductibles

Level of Cost Sharing—AV Examples



Level of Cost Sharing – 2013

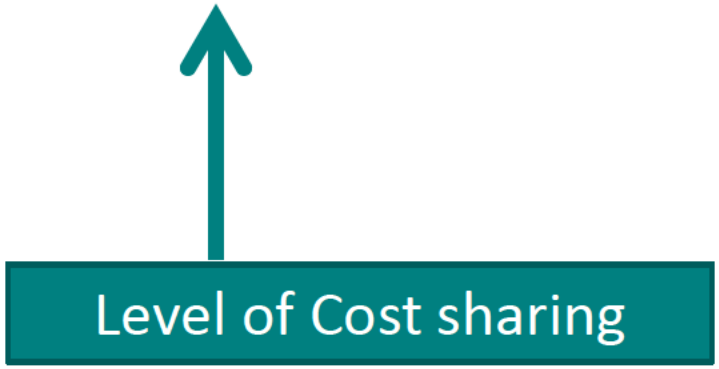


VERMONT HEALTH CARE REFORM

GMC Benefits and Level of Cost Sharing

The Affordable Care Act Waiver requires state to:

- Cover the same or more people than under the ACA
- Provide coverage that is as good or better than the ACA
- Provide coverage that is as affordable or more affordable than the ACA
- Not increase the federal deficit



GMC Benefits and Level of Cost Sharing

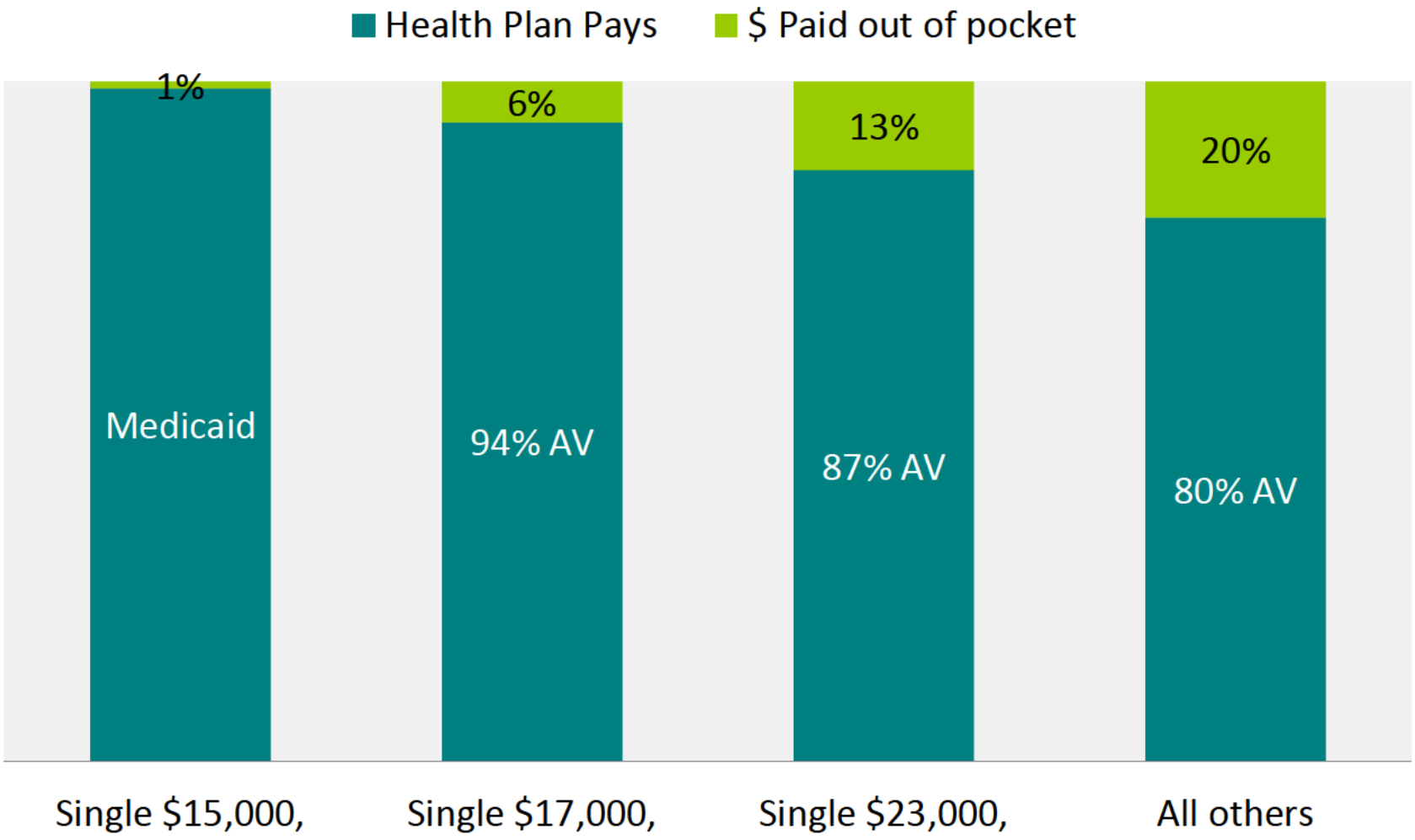
- Act 48 states that the GMC plan must be have at least an 80% AV
  - This looks like a gold plan in Vermont Health Connect

- Act 48 preferred an 87% AV plan for GMC
  - This is close to a platinum plan in Vermont Health Connect

GMC Benefits and Cost Sharing

- The Affordable Care Act requires us to provide coverage that is as affordable or more affordable than the ACA.
- This means that people who are eligible to pay lower out of pocket costs through cost sharing reductions in Vermont Health Connect will pay lower out of pocket costs under GMC

ACA Cost Sharing Sliding Scale



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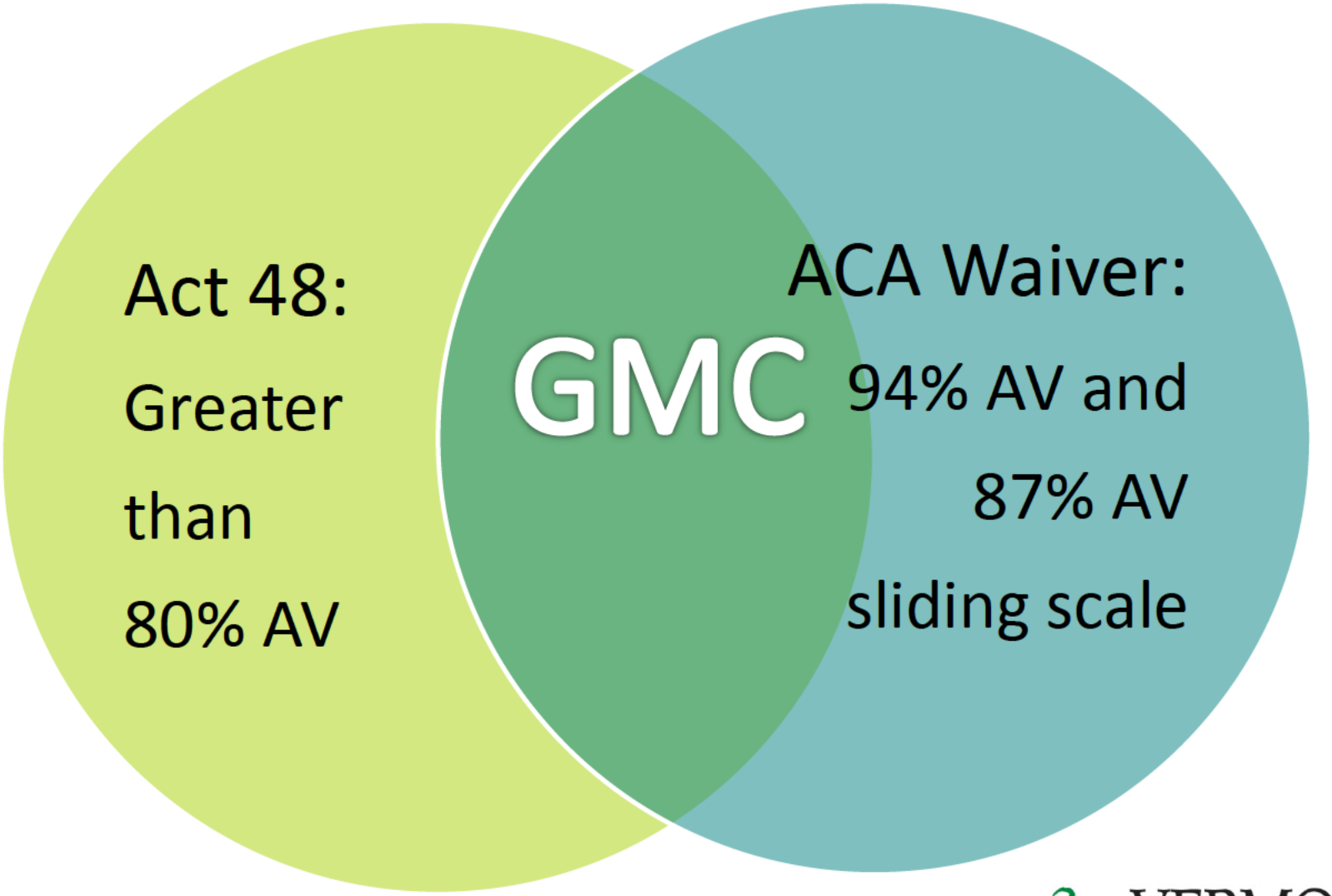
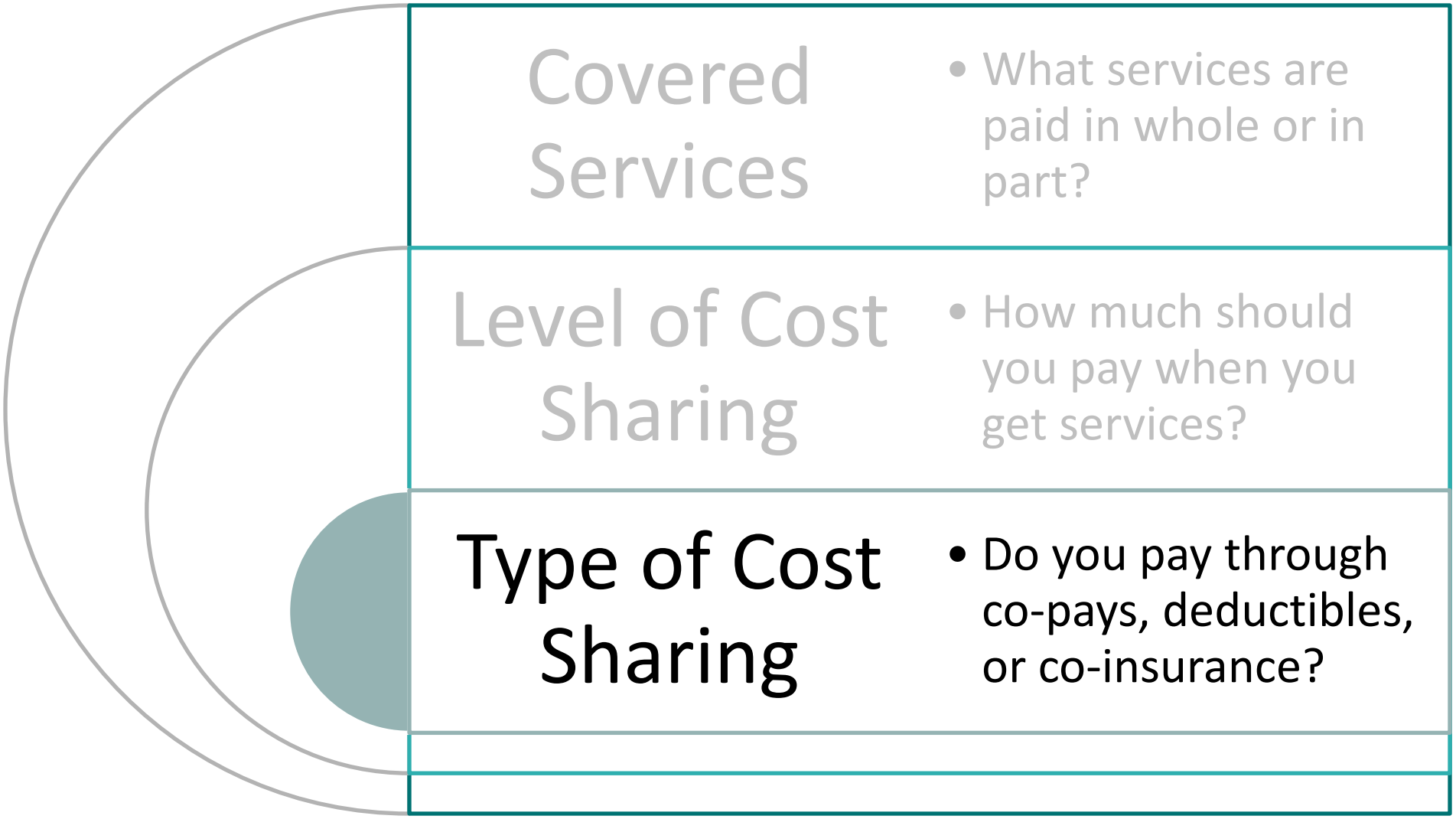
GMCB's Legal Parameters



Benefits and Type of Cost Sharing



Type of Cost Sharing: Definitions

What is a deductible?

- The amount you owe for health care services your health insurance or plan covers before your health insurance or plan begins to pay.
  - Preventive services are covered 100%
  - Deductible may not apply to all services, like primary care physician's visits

Type of Cost Sharing: Definitions

What is co-insurance?

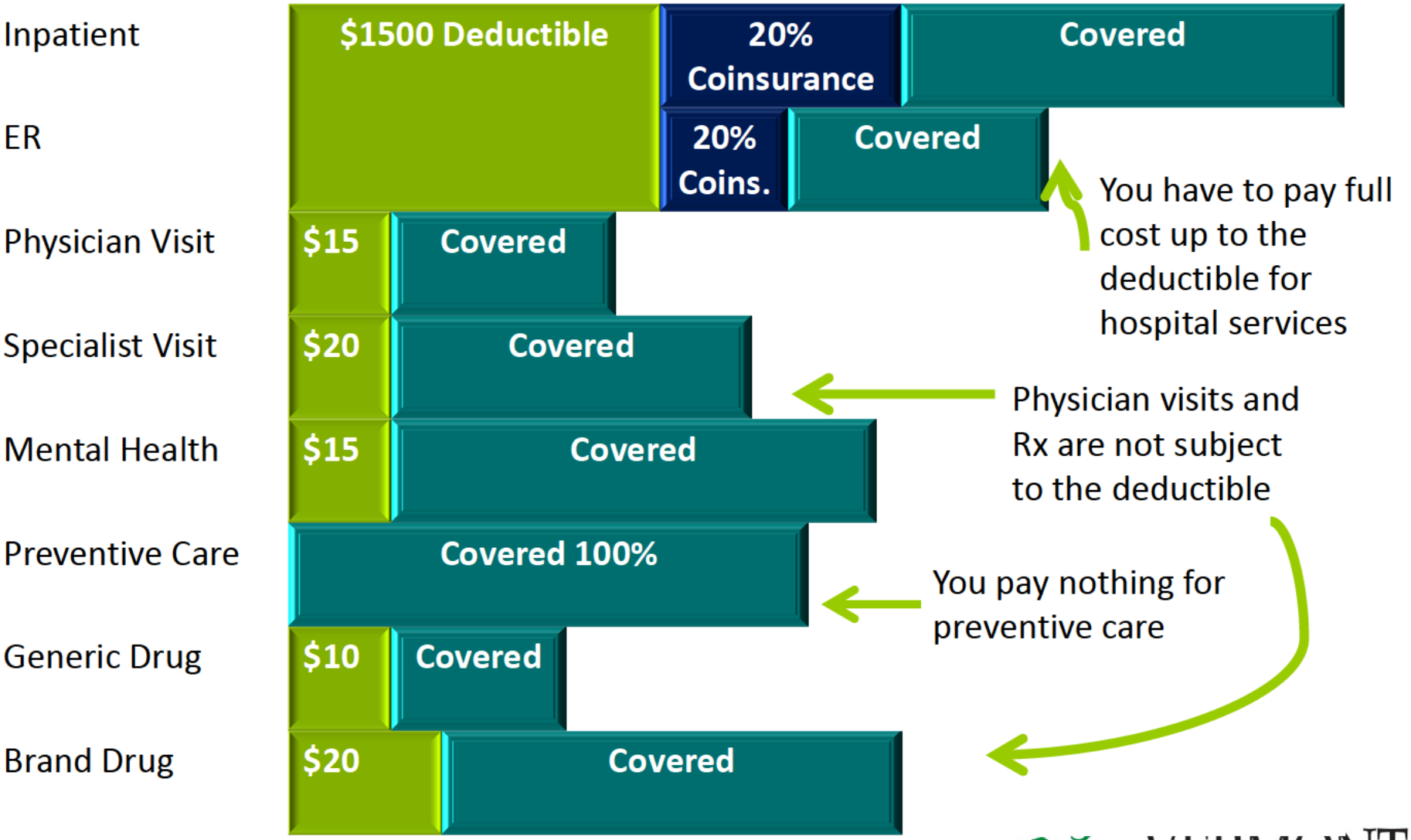
- Your share of the costs of a covered health care service, calculated as a percent (for example, 20%) of the allowed amount for the service.
- For example, if the cost of a hospital service under your health plan is $1,000, your coinsurance payment of 20% would be $200. The health insurance or plan pays the rest of the allowed amount.

Type of Cost Sharing: Definition

What is a co-pay?

- A fixed amount (for example, $15) you pay for a covered health care service, usually when you get the service. The amount can vary by the type of covered health care service.

Type of Cost Sharing: Plan Example



VERMONT HEALTH CARE REFORM

Type of Cost Sharing: Plan Example

- Family of four. One child with diabetes. Parent A with cholesterol and high blood pressure meds. Parent B to receive colonoscopy. Other child breaks arm in a ski accident.

	Units	Cost /unit	Allowed Costs	Deductible	Co-pay	Co-ins
PCP Visits	8	$100	$800	N/A	$120	N/A
Diab. meds (generic)	12	$144	$1,728	N/A	$120	N/A
Cholesterol meds	12	$79	$948	N/A	$240	N/A
ER & Hosp. services	1	$3,000	$3,000	$1500	N/A	$300
Colonoscopy (preventive)	1	$4,300	$4,300	$0	$0	$0
Total cost				**$10,776**		
Family pays				**$2,280**		

Questions?

Appendix B-6. Presentation to the Green Mountain Care Board
December 11, 2014

Green Mountain Care: Lay of the Land for Covered Services and Level of Cost Sharing

Robin J. Lunge, J.D., MHCDS
Director of Health Care Reform, AOA

Devon J. Green, J.D.
Special Counsel on HCR, AOA

December 11, 2014

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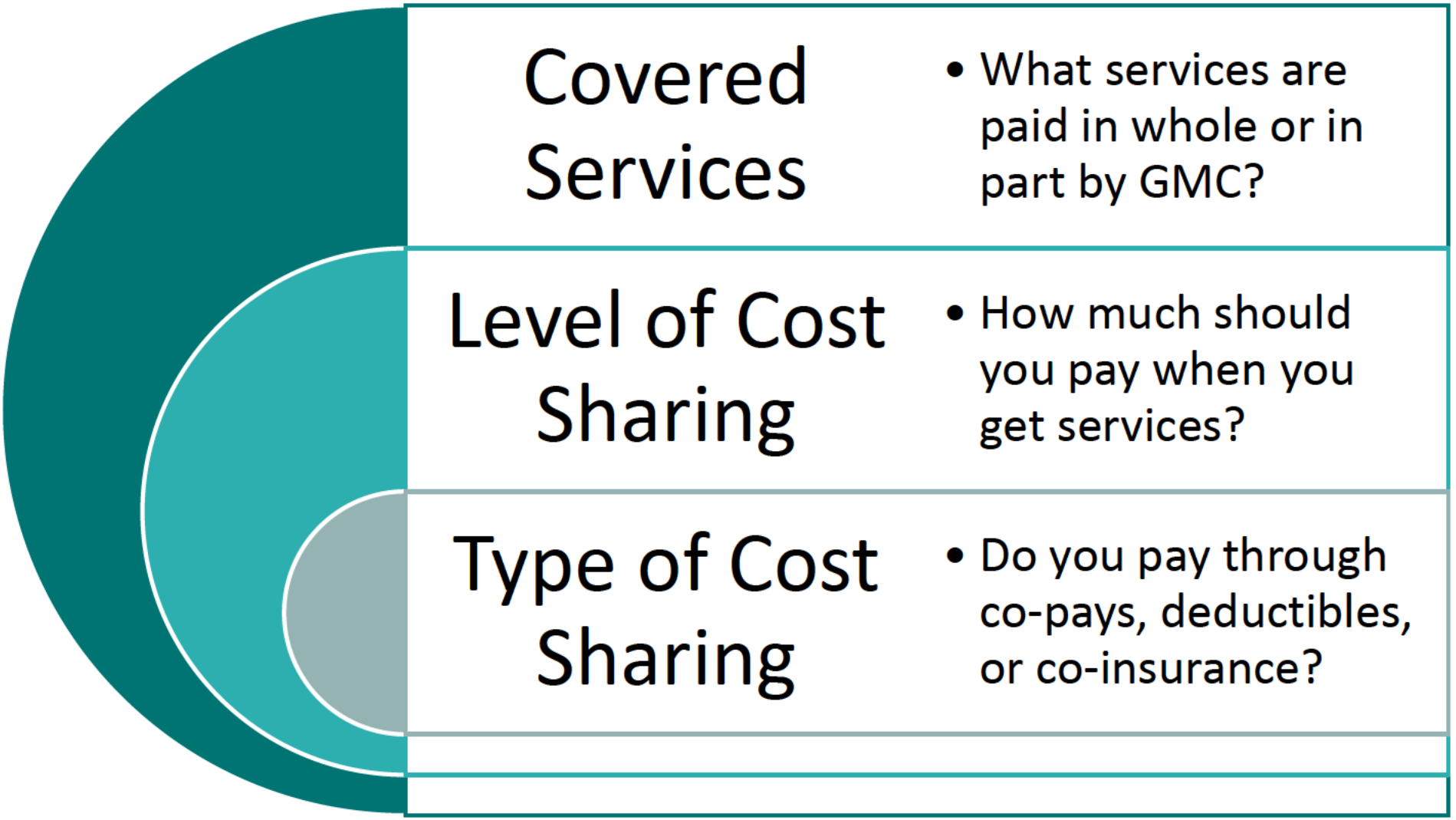
HEALTH CARE REFORM

Discussion for Today

- Covered Services
  - Today's covered services
  - Overview of covered services in other states
  - Overview of covered services in other countries
- Level of Cost Sharing
  - Level of cost sharing in Vermont today
  - Overview of level of cost sharing in other countries
- Benefit design public input

Health Care Reform Goals: Why Reform?

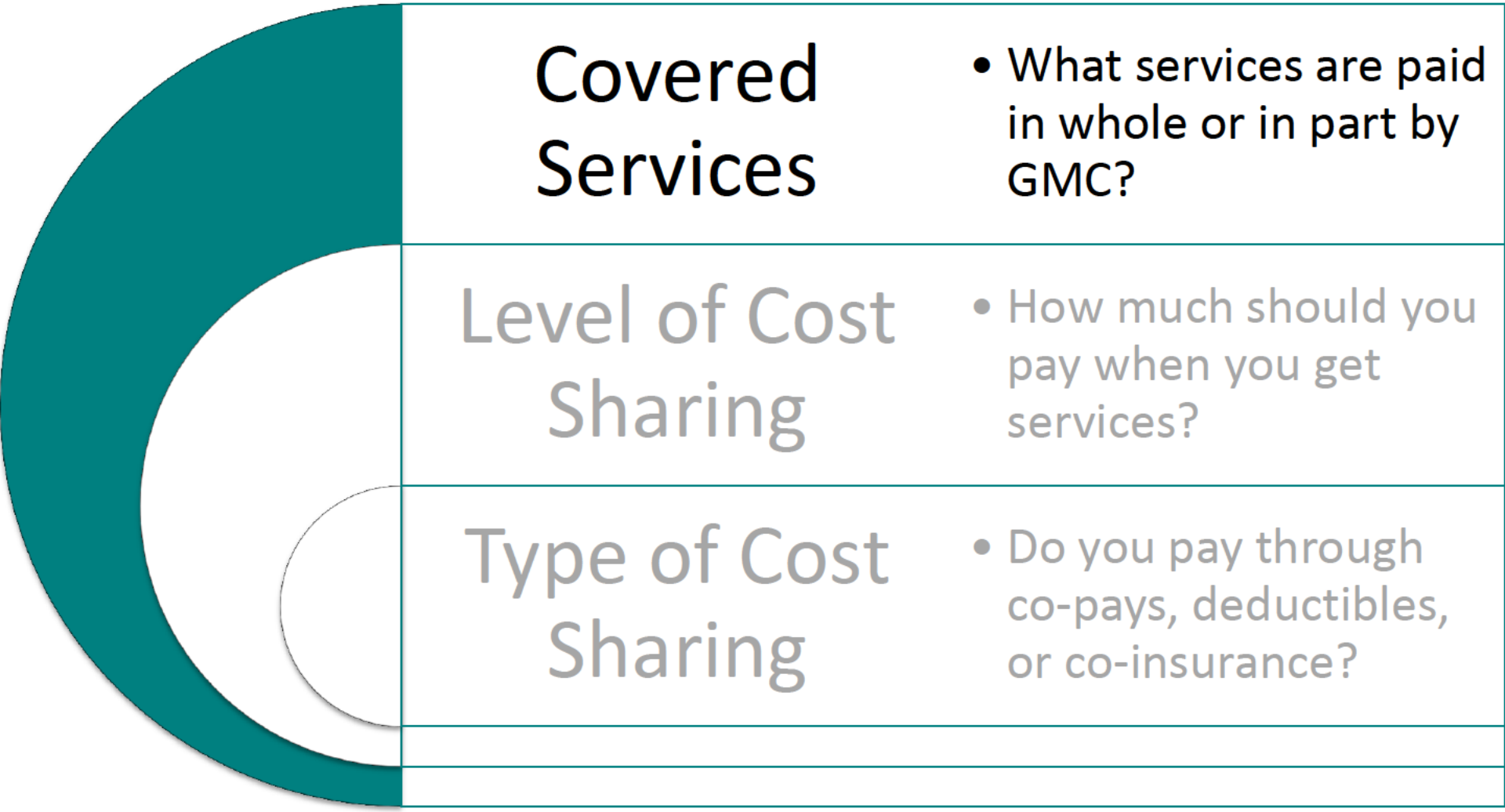
GMC Benefits



Design Considerations

- Federal and state requirements for benefits
- Equity
- Administrative cost & complexity
- Options fit together, easy to explain
- Individual out of pocket cost (average & max)
- Medical cost & utilization
- Change from current/expected
- Federal & state tax implications

GMC Benefits and Covered Services



Covered Services Today

	Essential Health Benefit	State Employee and Retirees		VEHI Education Employees and Retirees	
		SelectCare	Total Choice	300 Ded	VHP
Chiropractic	Limit 12 visits then prior approval required	Limit 60 visits per year (total visits for PT, OT, ST, Chiro)	Limit 60 visits per year (total visits for PT, OT, ST, Chiro)	Prior approval required after 12th visit	Prior approval required after 12th visit
Infertility	Not covered	Up to $50,000 lifetime max	Up to $50,000 lifetime max	Not covered	Not covered
Bariatric Surgery	Covered	Covered, medical necessity	Covered, medical necessity	With prior approval	With prior approval
Fertility Drugs	Covered	Covered	Covered	Covered	Covered
Routine Eye Exams	1/year for children	$100/2 years	$100/2 years	Not covered	1/year

Covered Services Today

State Mandates stay in place:

- Maternity coverage
- Outpatient contraceptive services, including sterilization
- Home health care
- Emergency room services
- Newborn coverage
- Autism spectrum disorders for children
- Chiropractic services
- Prosthetic devices
- Mammograms
- Anesthesia for dental procedures performed on certain covered persons
- Child Vaccine benefits
- Prostate screenings
- Colorectal cancer screening
- Diabetes treatment
- Mental health and substance abuse
- Clinical trials for cancer patients
- Chemotherapy treatment
- Orally administered anticancer medication
- Treatment of inherited metabolic diseases
- Craniofacial disorders
- Off-label use

GMCB's Legal Parameters

- Green Mountain Care must have all of the ACA's essential health benefits (EHBs)
- State law requires GMCB to consider adding the following services:
  - Adult dental
  - Adult vision
  - Hearing
  - Long Term Care
- Vermont will not receive any extra federal funding to cover these services

Covered Services State Comparison– Dental EHB

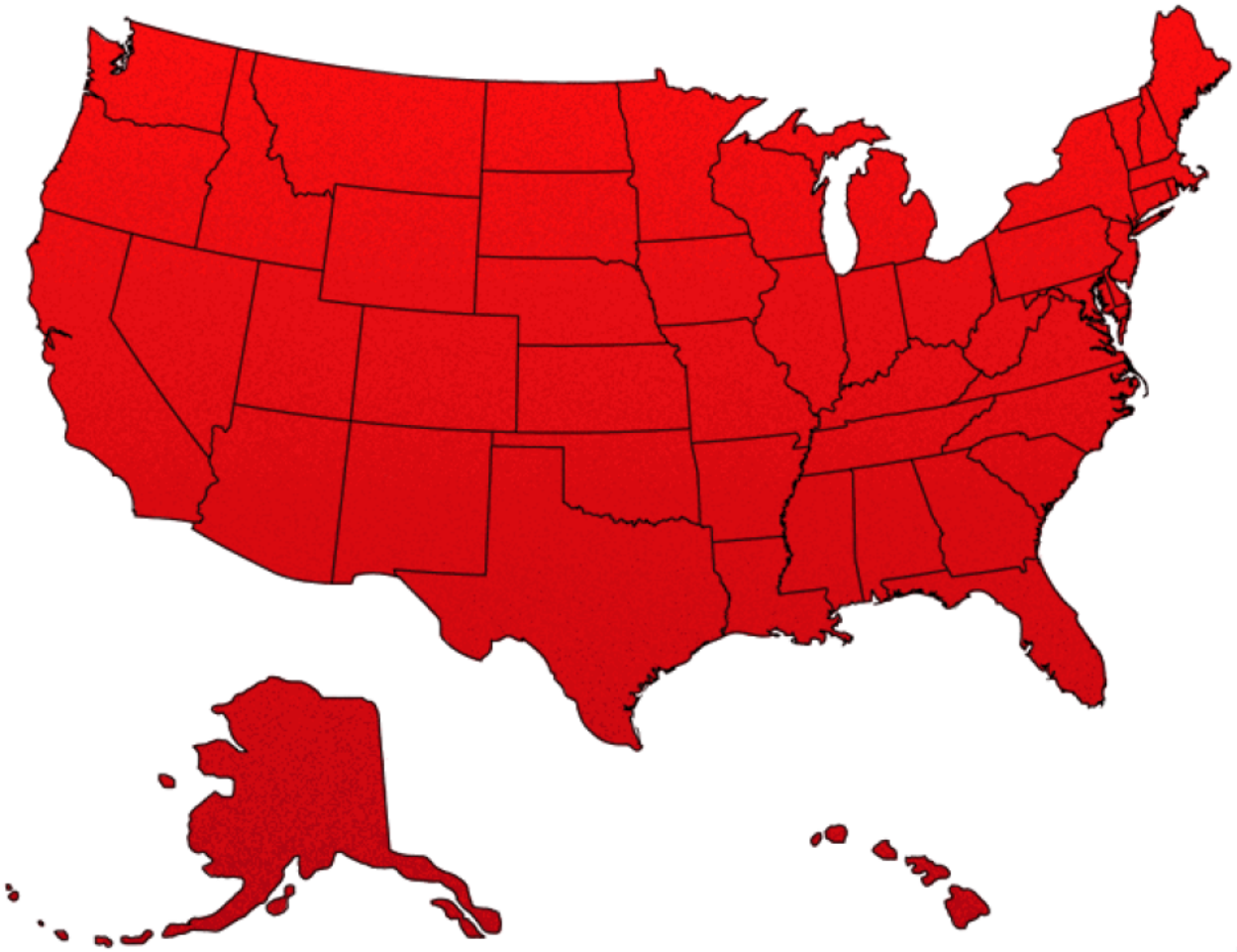
- At the last meeting, GMCB requested an overview of how adult dental is covered in other states
- We examined the essential health benefits package of each state as well as the Medicaid covered services to compare adult dental coverage

Covered Services State Comparison– Dental EHB

- All essential health benefits packages must include coverage of pediatric dental. Vermont covers pediatric dental up to age 21:
  - Prevention, evaluation and diagnosis, including radiographs when indicated
  - Periodic prophylaxis, including topical fluoride applied in a dentists office
  - Periodontal therapy
  - Treatment of injuries
  - Treatment of disease of bone and soft tissue
  - Oral surgery for tooth removal and abscess drainage
  - Treatment of anomalies
  - Endodontics (root canal therapy)
  - Restoration of decayed teeth
  - Replacement of missing teeth, including fixed and removable prosthetics (i.e. crowns, bridges, partial dentures and complete dentures)

Covered Services State Comparison– Dental EHB

Adult dental & health insurance: no states cover as EHB



Covered Services State Comparison– Dental EHB

Adult dental & health insurance:

- The U.S. Territories, except for Puerto Rico, covers:
  - 2 check-ups per year

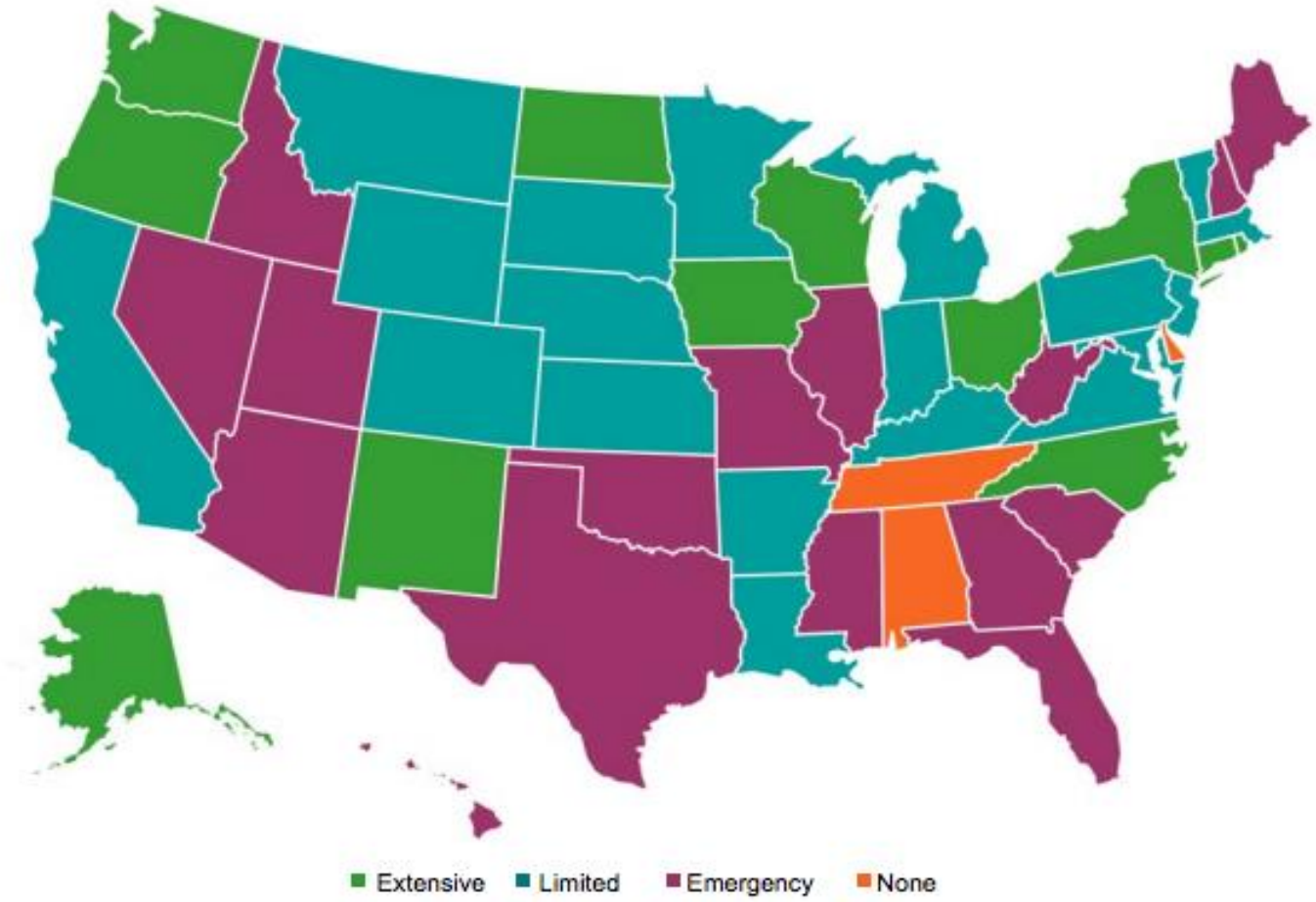
  NOTE: Feds chose federal health insurance as benchmark plan due to unique nature of territory markets
- Puerto Rico covers
  - 2 check-ups per year
  - X-rays once every three years

Covered Services State Comparison– Dental Medicaid

- Under Vermont Medicaid, adults with income up to 138% FPL receive dental under Medicaid
  - $510 per beneficiary per year
  - Beneficiaries pay $3.00 per visit for dental services
- Benefit primarily limited by access to providers
  - Source: Green Mountain Care Board: Vermont Dental Landscape Study, 2013.

Covered Services State Comparison– Dental Medicaid

- Adult Dental & Medicaid



Source: Yarbrough C, Vujicic M, Nasseh K., *More than 8 Million Adults Could Gain Dental Benefits through Medicaid Expansion.* Health Policy Resources Center Research Brief. American Dental Association. February 2014.

Covered Services State Comparison– Dental Medicaid

Benefit Level	Definition
None	No dental benefits.
Emergency	Relief of pain and infection. While many services might be available, care may only be delivered under defined emergency situations.
Limited	Includes benefits that have a per-person annual expenditure cap of $1,000 or less.
Extensive	Includes benefits that have a per-person annual expenditure cap of at least $1,000.

Covered Services International Comparison

- Health care systems in other countries generally cover:
  - Inpatient
  - Outpatient
  - Specialists
  - Clinical laboratory tests
  - Diagnostic imaging
  - Physical therapy
  - Pharmacy
- There is more variation in vision and dental coverage
- Comparisons of mental health coverage aren't readily available

Covered Services– International

	In-Patient	Out-patient	Specialist	Clinical	Imaging	Phys. Therapy	Pharmacy
Canada	✓	✓	✓	✓	✓	✗	✗
France	✓	✓	✓	✓	✓	✓	✓
Germany	✓	✓	✓	✓	✓	✓	✓
Japan	✓	✓	✓	✓	✓	✓	✓
Sweden	✓	✓	✓	✓	✓	✗	✓
Switz.	✓	✓	✓	✓	✓	✓	✓
U.K.	✓	✓	✓	✓	✓	✓	✓

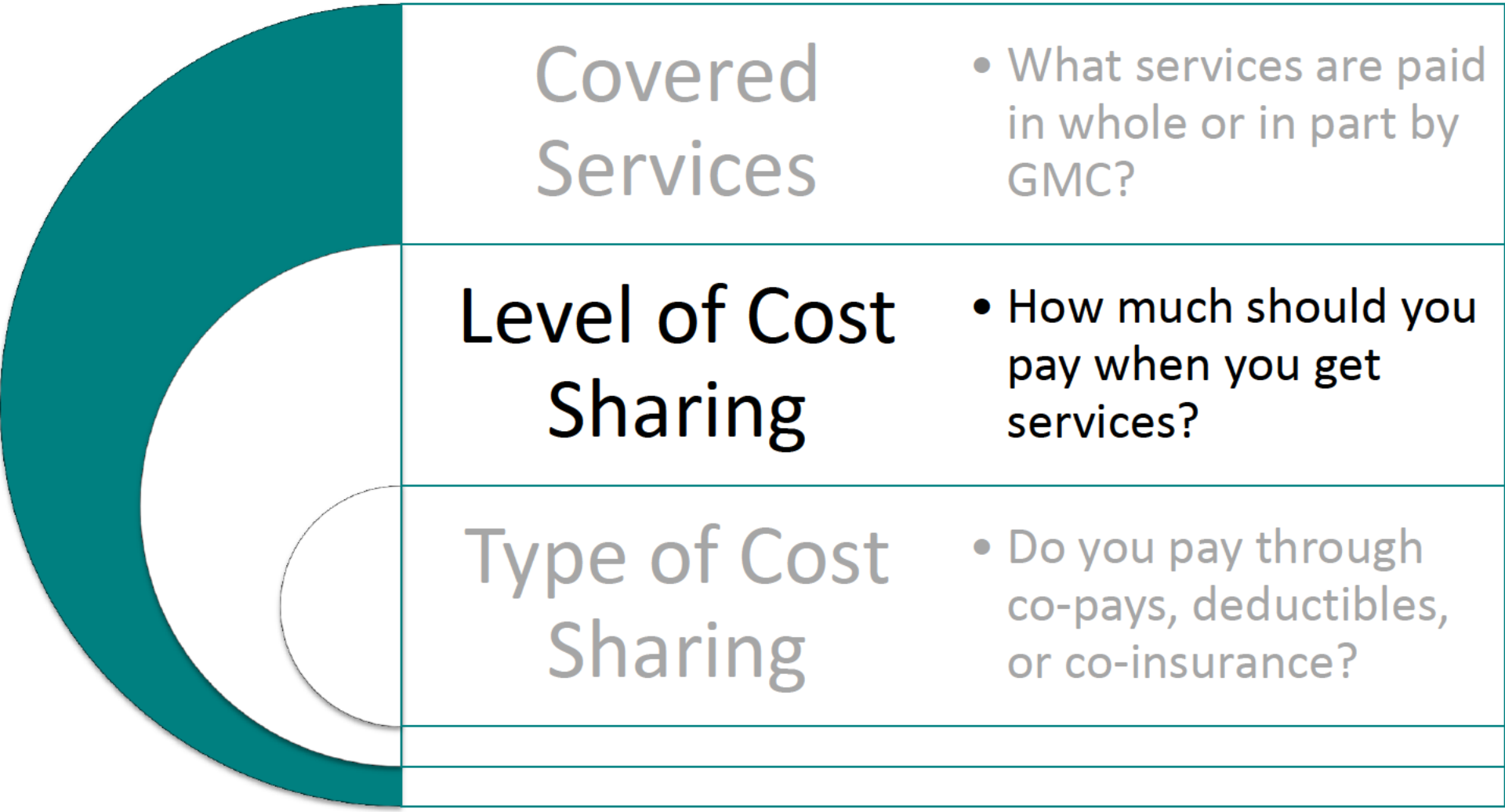
Source: Paris, V., M. Devaux and L. Wei (2010), "Health Systems Institutional Characteristics: A Survey of 29 OECD Countries", OECD Health Working Papers, No. 50, OECD Publishing. Data from 2007 or last available year, http://dx.doi.org/10.1787/5kmfxfq9qbnr-en

Covered Services– International

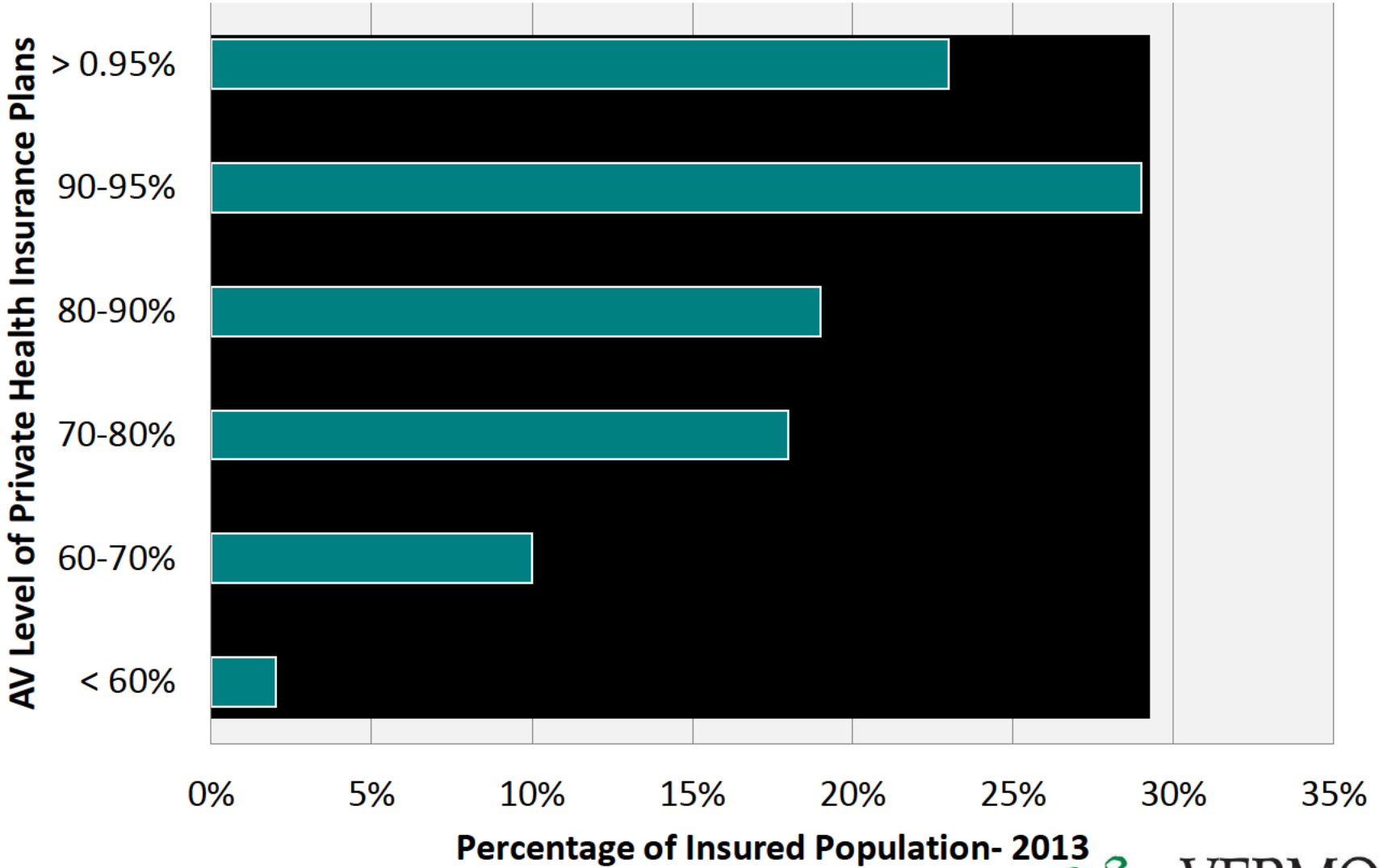
	Eyeglasses and/or contact lenses	Dental Care	Dental Prostheses
Canada	✗	✗	✗
France	½	½	½
Germany	½	✓	½
Japan	✗	✓	✓
Sweden	✗	½	½
Switzerland	½	✗	✗
United Kingdom	✗	✓	✓

Source: Paris, V., M. Devaux and L. Wei (2010), "Health Systems Institutional Characteristics: A Survey of 29 OECD Countries", OECD Health Working Papers, No. 50, OECD Publishing. Data from 2007 or last available year, http://dx.doi.org/10.1787/5kmfxfq9qbnr-en

GMC Benefits and Covered Services



Level of Cost Sharing Today– Vermont



VERMONT
HEALTH CARE REFORM

Excise Tax on “Cadillac” Plans

- In 2018, a 40% excise tax will be assessed on the cost of coverage for health plans that exceed a certain annual limit
  - $10,200 for individual coverage
  - $27,500 for couples and family coverage
  - Numbers are for 2018, will be indexed to inflation

Excise Tax on "Cadillac" Plans

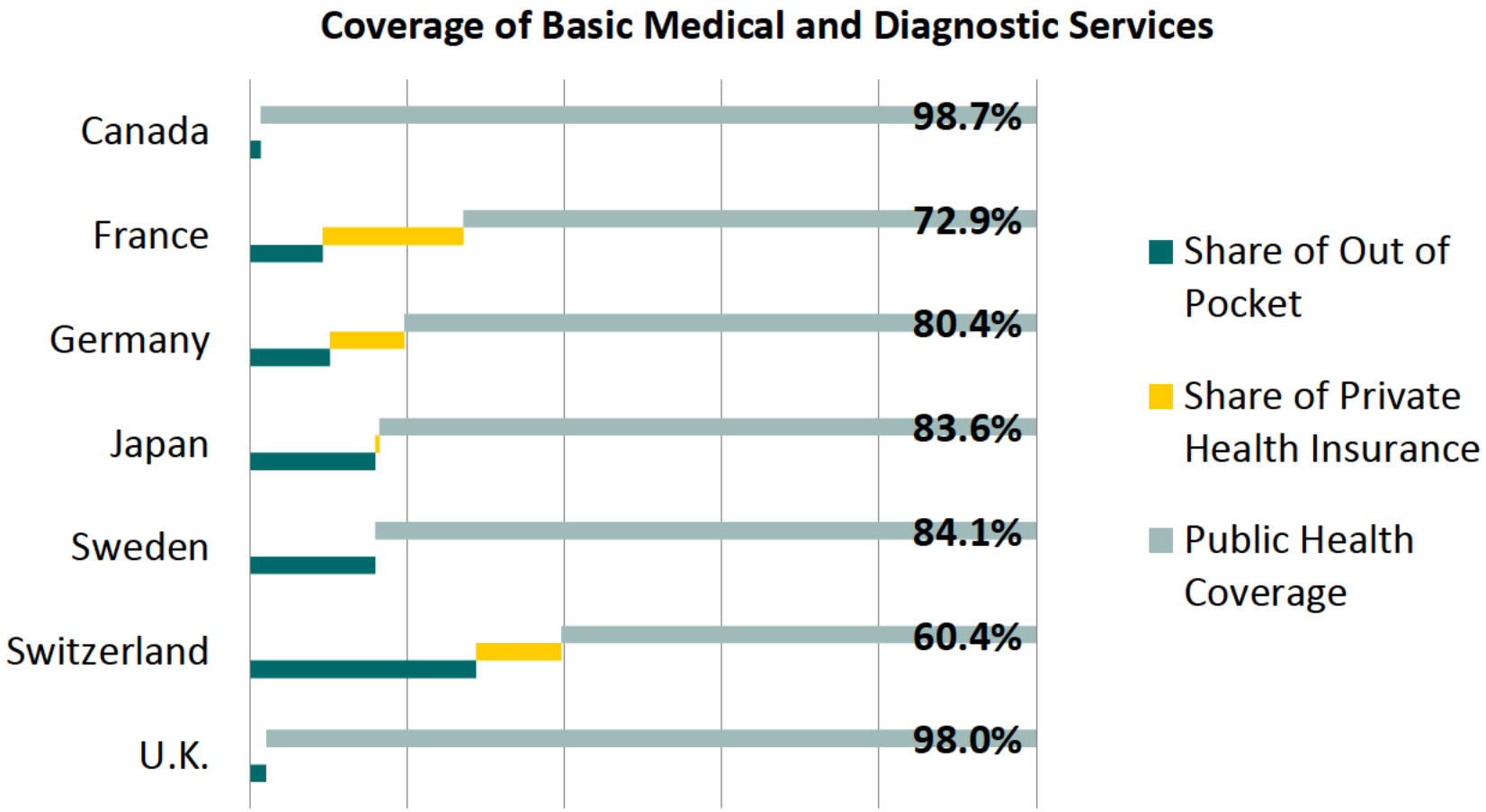
EXHIBIT 1

Employers' Responses to the Excise Tax, 2013

The International Foundation of Employee Benefit Plans asked 879 single-employer plans if they were taking action to avoid the 2018 excise tax.	
Yes	16.8%
No, but considering	40.0%
No, no plan to do so	13.5%
Not sure	9.6%
Not applicable, have no high-cost plans	20.0%
Employers that answered "yes," by size	
0–50	4.1%
51–499	13.1%
500–4,999	18.2%
5,000–9,999	18.5%
10,000+	29.4%

SOURCE International Foundation of Employee Benefit Plans, "2013 Employer-Sponsored Health Care: ACA's Impact: Survey Results," 2013.

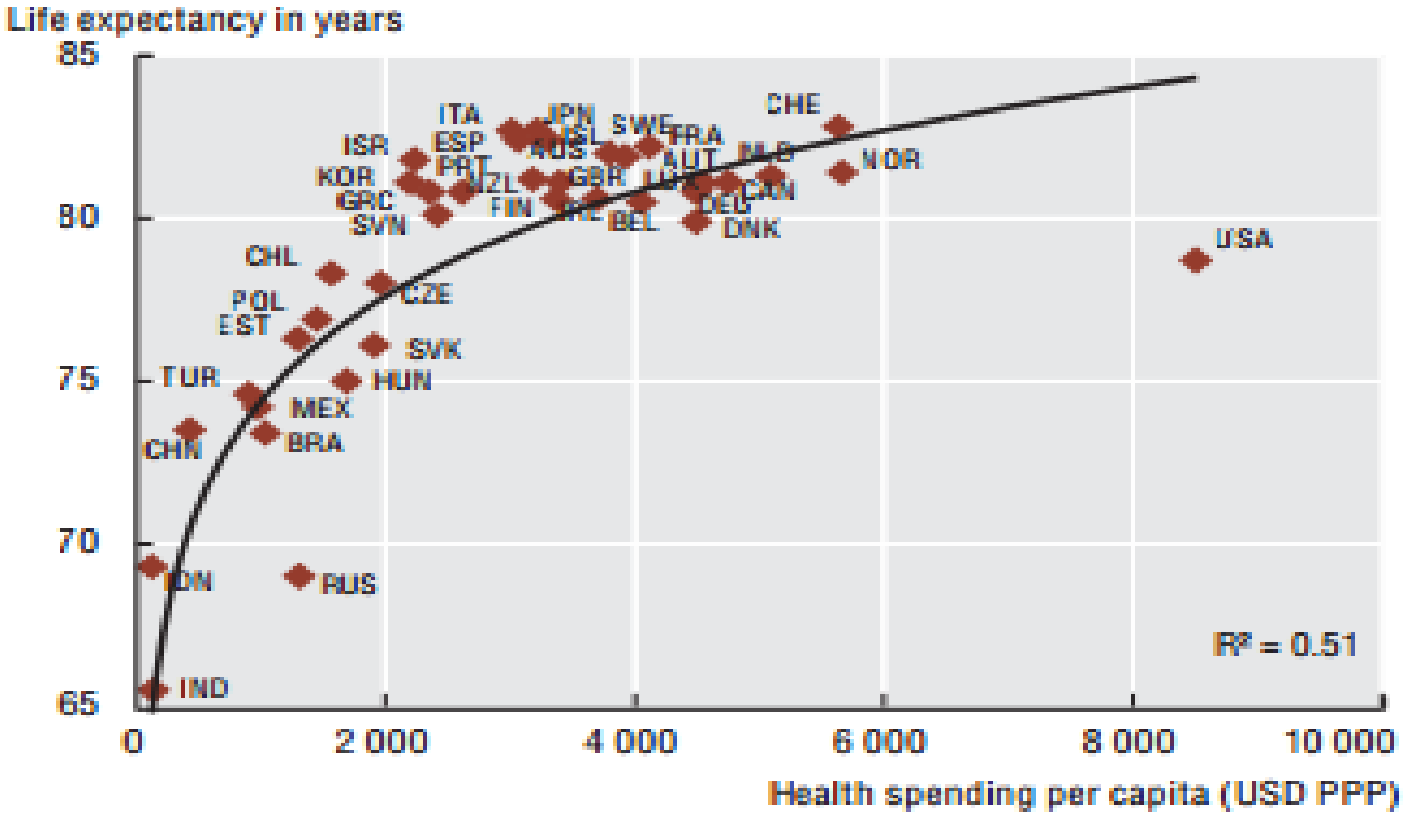
Level of Cost Sharing– International



Source: Paris, V., M. Devaux and L. Wei (2010), "Health Systems Institutional Characteristics: A Survey of 29 OECD Countries", OECD Health Working Papers, No. 50, OECD Publishing. Data from 2007 or last available year http://dx.doi.org/10.1787/5kmfxfq9qbnr-en

Spending and Health Outcomes

Life Expectancy at birth and health spending per capita, 2011 (or nearest year)



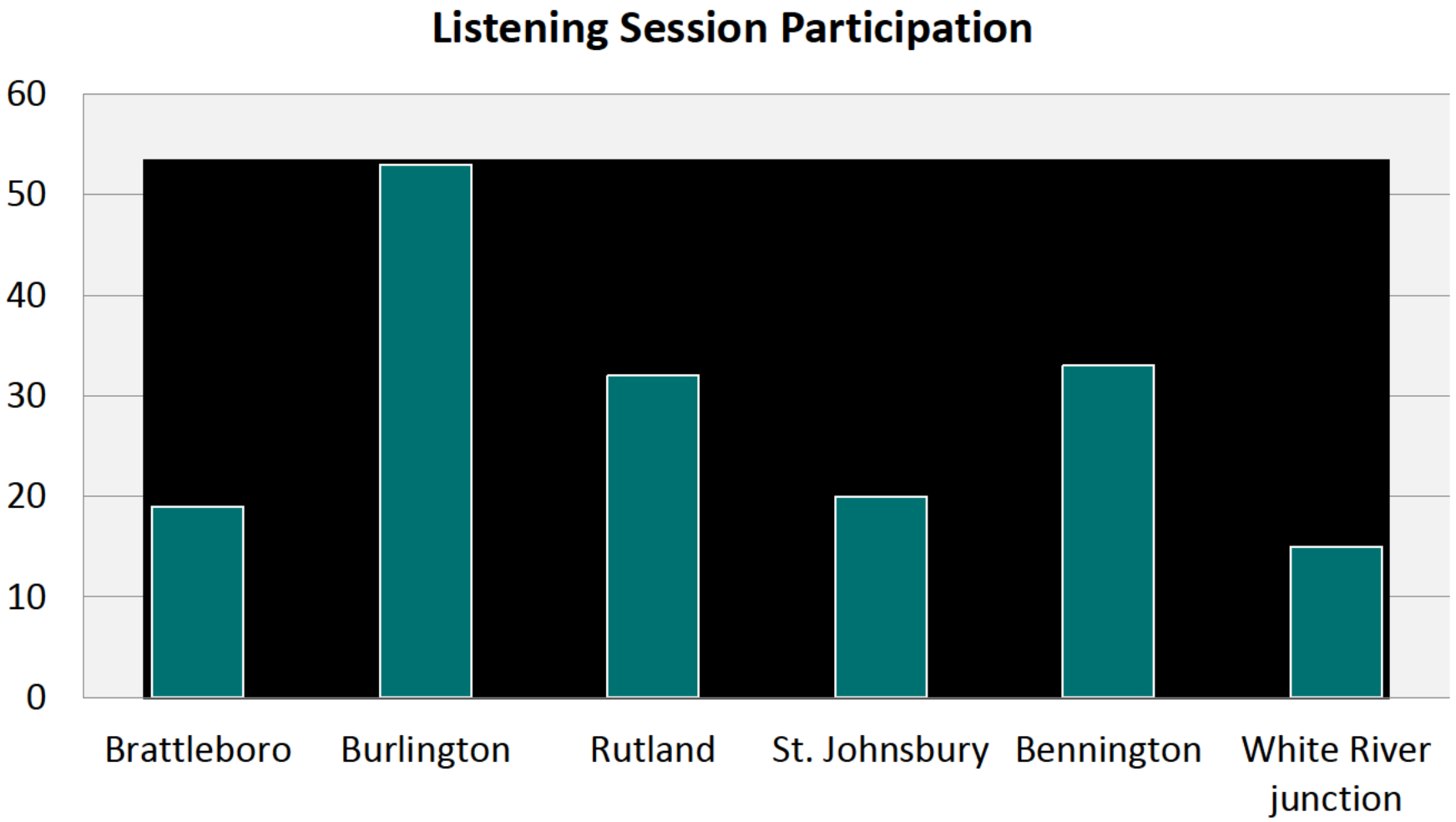
Source: OECD Health Statistics 2013, http://dx.doi.org/10.787/health-data-en; World Bank for non-OECD countries

PUBLIC INPUT

2012 Listening Sessions

- During the spring of 2012, AHS and AoA held a series of listening sessions around the state of Vermont to gather input on GMC's benefit design
  - April 25 – Brattleboro, Marlboro College Grad Center
  - May 2 – Burlington, City Hall Contois Auditorium
  - May 8 – Rutland Free Library, Fox Room
  - May 31 – Public Hearing with GMCB held at 11 VIT video-conferencing sites around the state
  - June 7 – St. Johnsbury, Catamount Arts
  - June 13- Bennington, Firehouse
  - June 20 – White River Junction, Hartford High School

2012 Listening Sessions



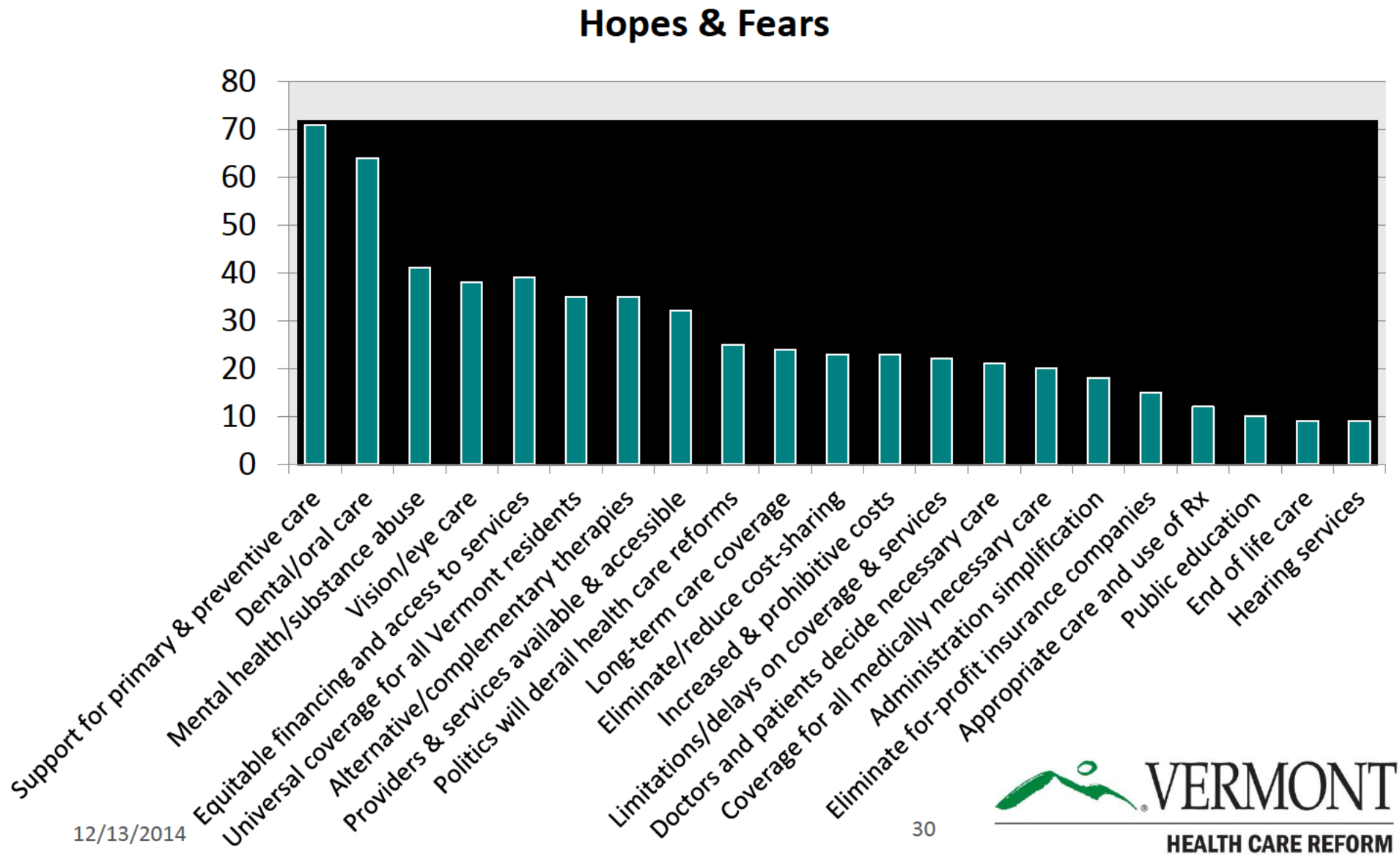
VERMONT
HEALTH CARE REFORM

2012 Listening Sessions

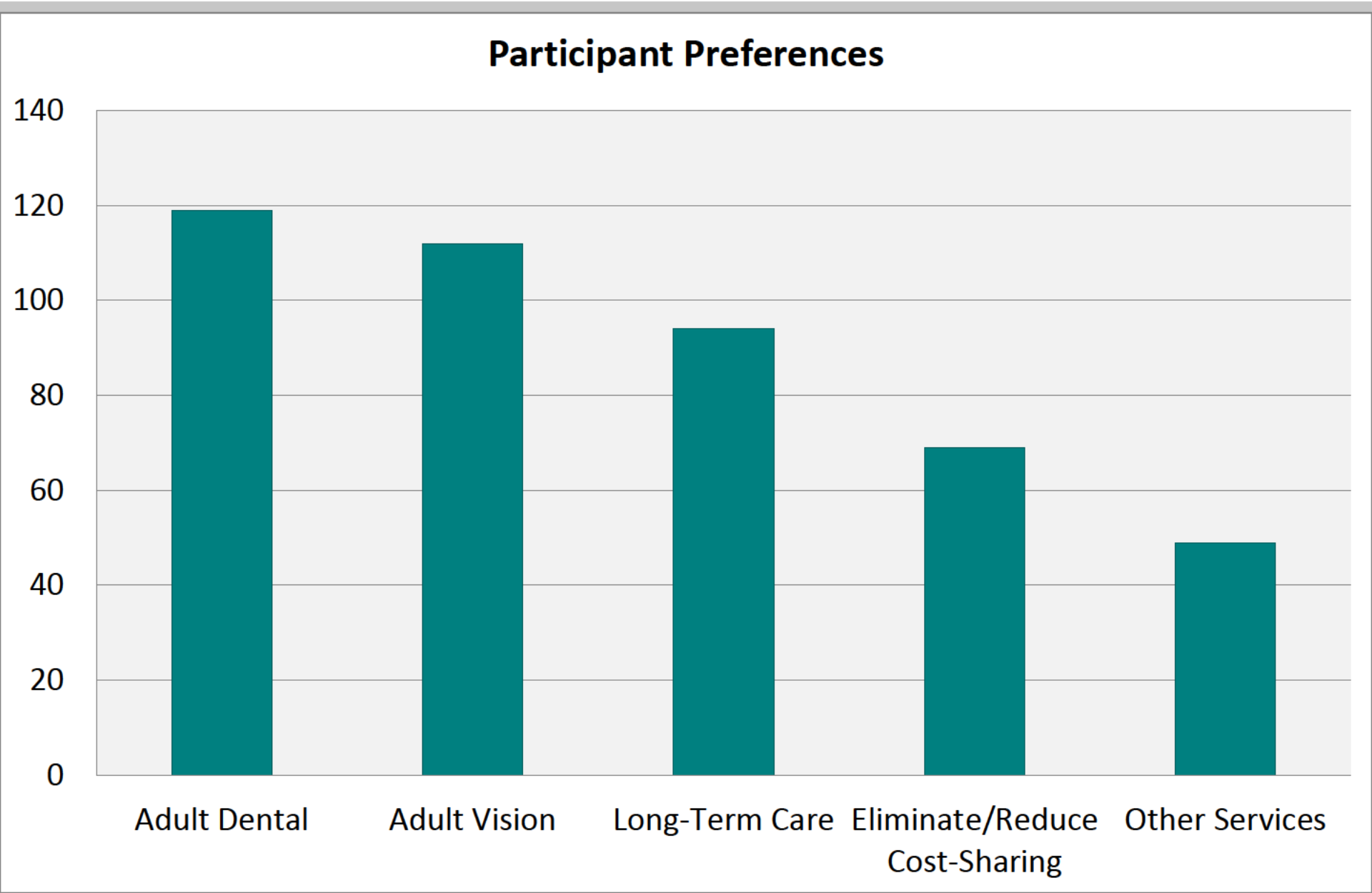
The listening sessions were divided into three components:

- Information- Health care reform implementation timeline and background information to frame discussion on benefit design.
- *Exercise #1* - Gathering open-ended feedback on hopes and fears from the public surrounding benefits and the single-payer system.
- *Exercise #2* - Setting priorities and examining the boundaries and limitations of a publicly financed system.

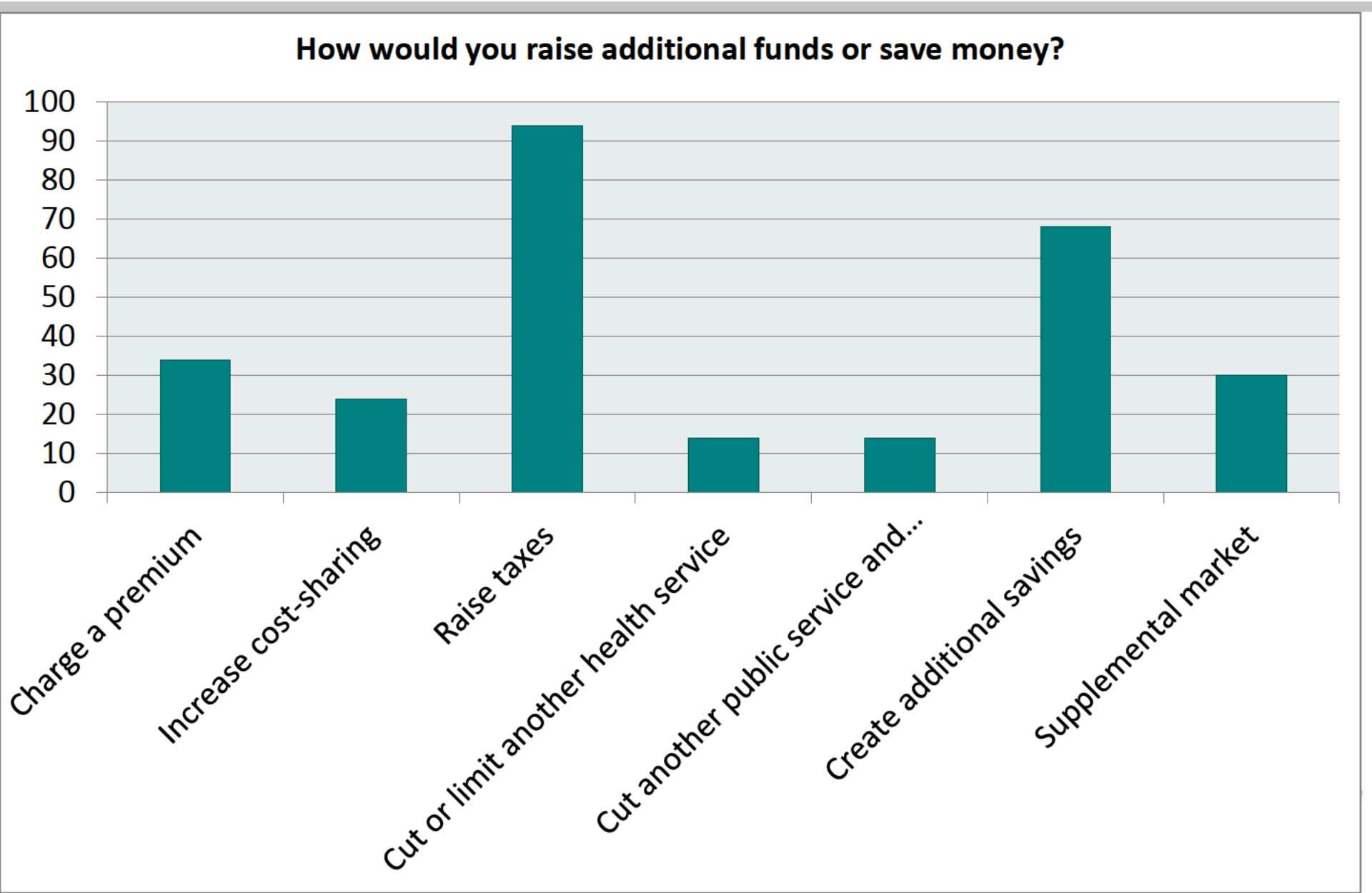
2012 Listening Sessions



2012 Listening Sessions



2012 Listening Sessions



Questions?

Appendix B-7. Presentation by Ellen Meara, Ph.D on Health Economics: Value Based Benefit Design

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Dartmouth
INSTITUTE
FOR HEALTH POLICY & CLINICAL PRACTICE
GEISEL SCHOOL OF MEDICINE AT DARTMOUTH

Health Economics: Value-Based Benefits & Analytics

Vermont House Health Care Committee
Ellen Meara, PhD

MARCH 26, 2014

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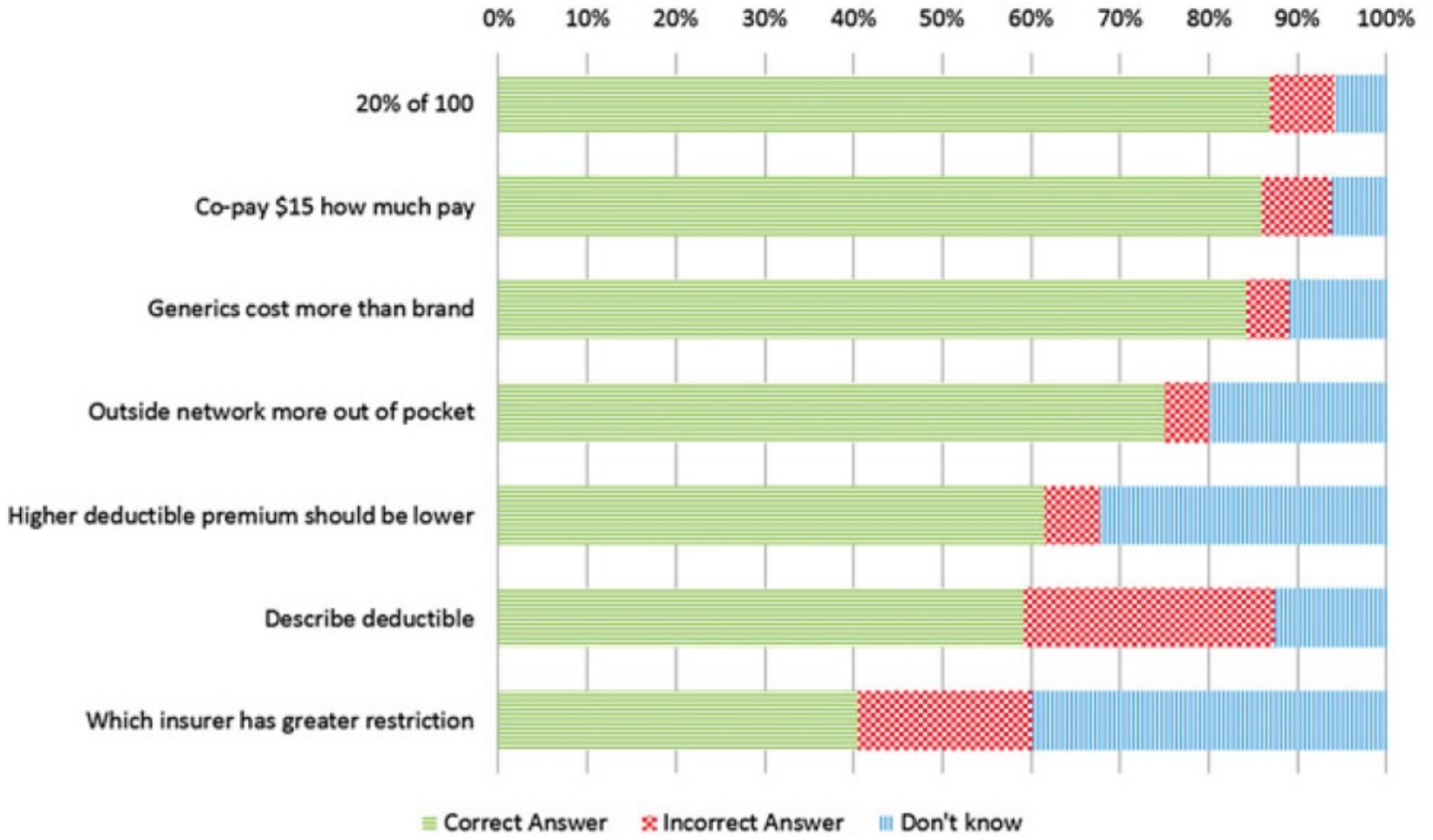
Context

Americans' (Lack of) Understanding of Health Insurance, 9/13



Source: Barcellos SH, Wuppermann AC, Carman KG, et al. Preparedness of Americans for the Affordable Care Act. *PNAS*. 2014.

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Goals

1. There is a tradeoff between insurance and costs
2. Cost-sharing lowers health care spending
3. Cost-sharing has unintended consequences

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Goals

1 **There is a tradeoff between insurance and costs**

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Tradeoff Between Insurance and Costs

Why do we want health insurance?	How is health insurance different?
Protection in case of (major) illness/injury	Not a one-time event like fires / accidents

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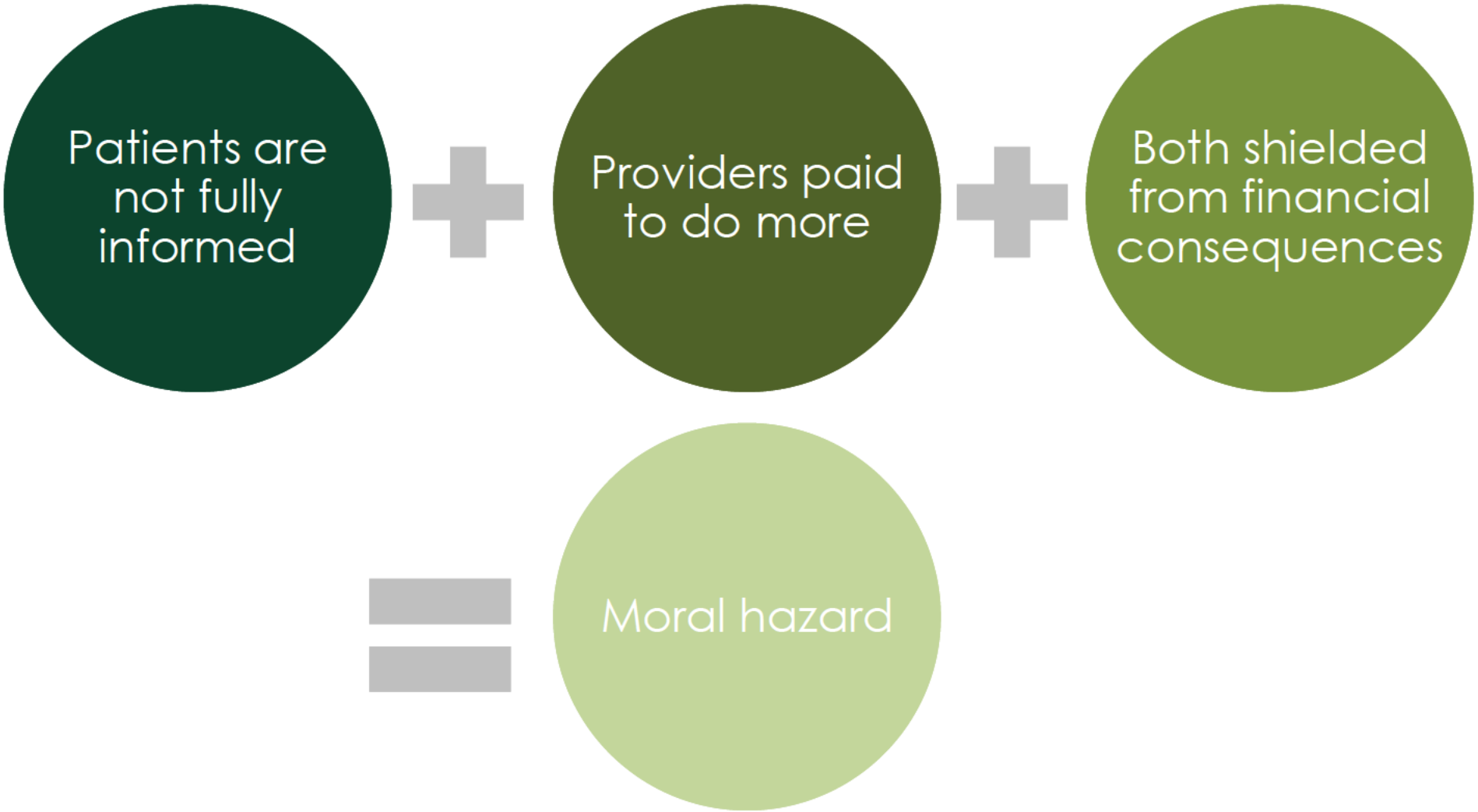
Tradeoff Between Insurance and Costs



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Goals

2 Cost-sharing lowers health care spending

3 Cost-sharing has unintended consequences

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Cost-Sharing Effects

How Has Cost-Sharing Been Used?

- Deductible and Coinsurance
- Copayment
- Tiered Formularies
- Value-Based Insurance Design
- High Deductibles

Cost-Sharing Effects

How Has Cost-Sharing Been Used?

Deductible and Coinsurance

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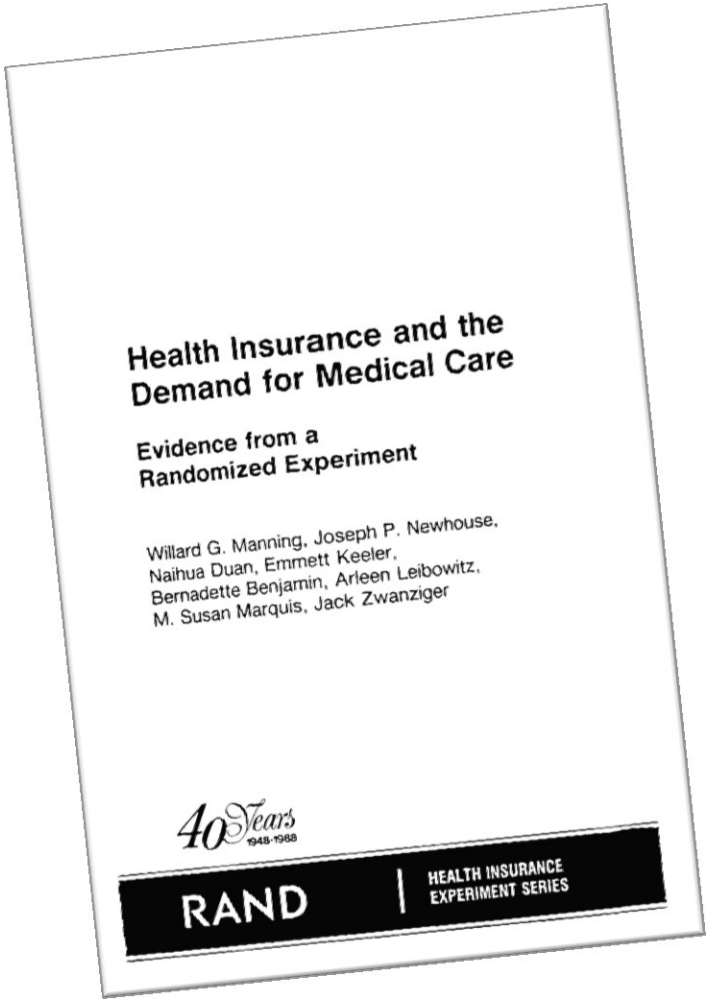
Cost-Sharing Effects: Deductible and Coinsurance



RAND Randomly Assigned 5,800 People

Plan (arm)	Coinsurance	Max Out-of-Pocket as % of Income	Deductible
Free Care	0%	NA	$0
25%	25%	5%	$0
50%	50%	10%	$0
95%	95%	15%	$0
Deductible	0%	NA	$150 – single $450 - family

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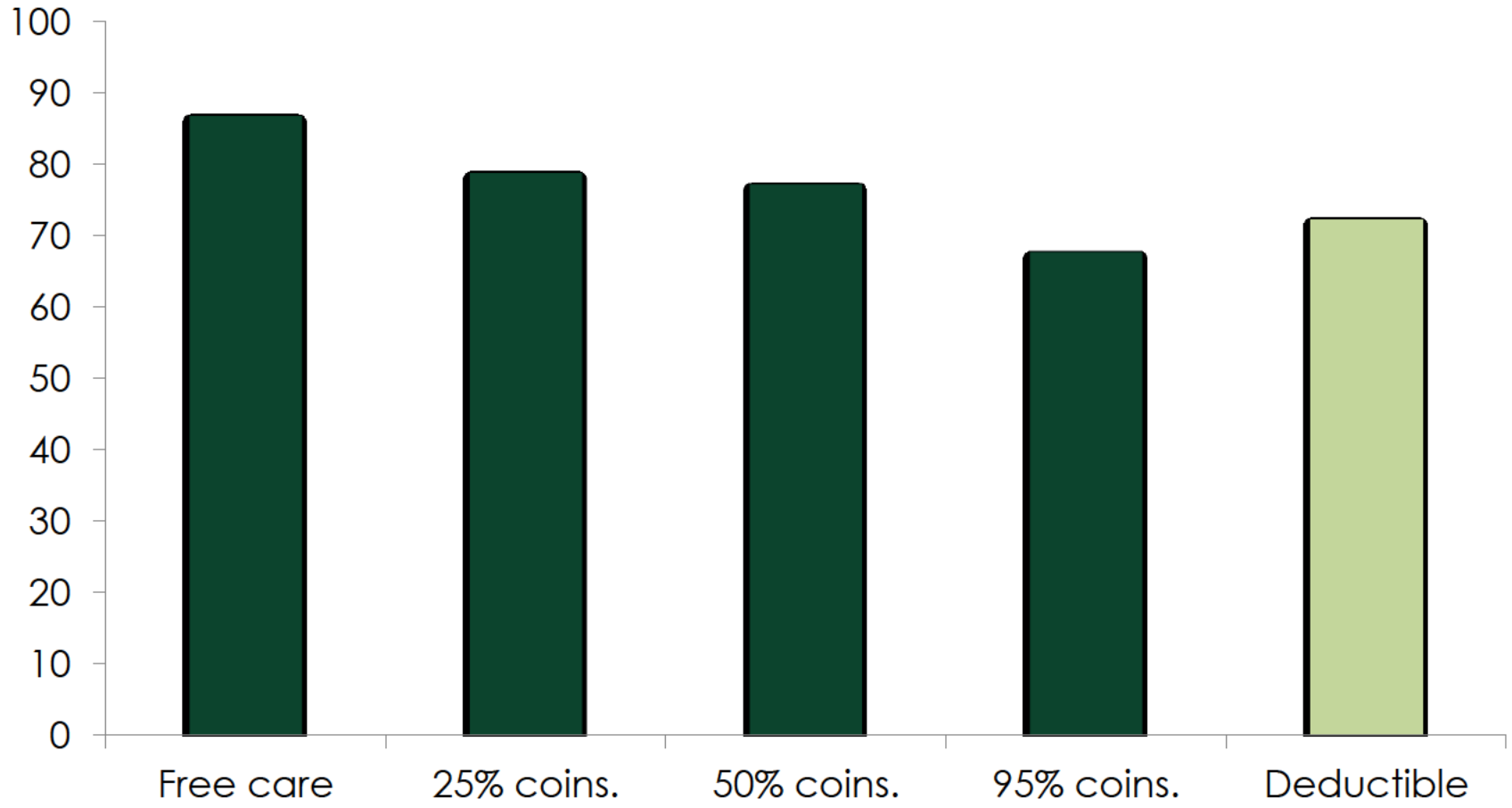
Cost-Sharing Effects: Deductible and Coinsurance

Percent of Beneficiaries Getting Any Medical Care



p-value<.0001 for difference across plans

Source: Manning et al. (1988). *Health Insurance and the Demand for Medical Care: Evidence from a Randomized Experiment*.

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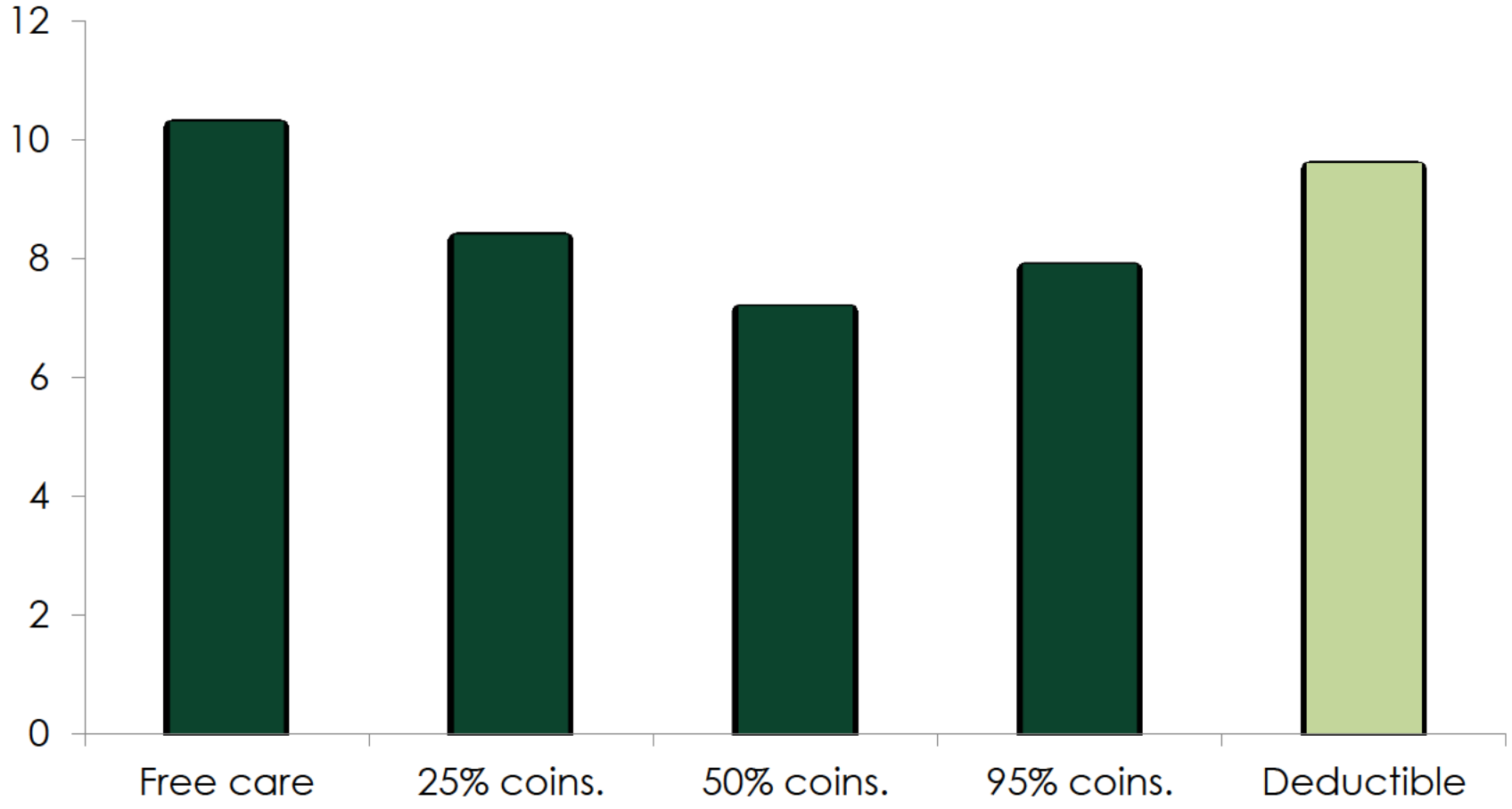
Cost-Sharing Effects: Deductible and Coinsurance

Percent of Beneficiaries with One or More Inpatient Admissions



p-value=.0006 for difference across plans

Source: Manning et al. (1988). *Health Insurance and the Demand for Medical Care: Evidence from a Randomized Experiment*.

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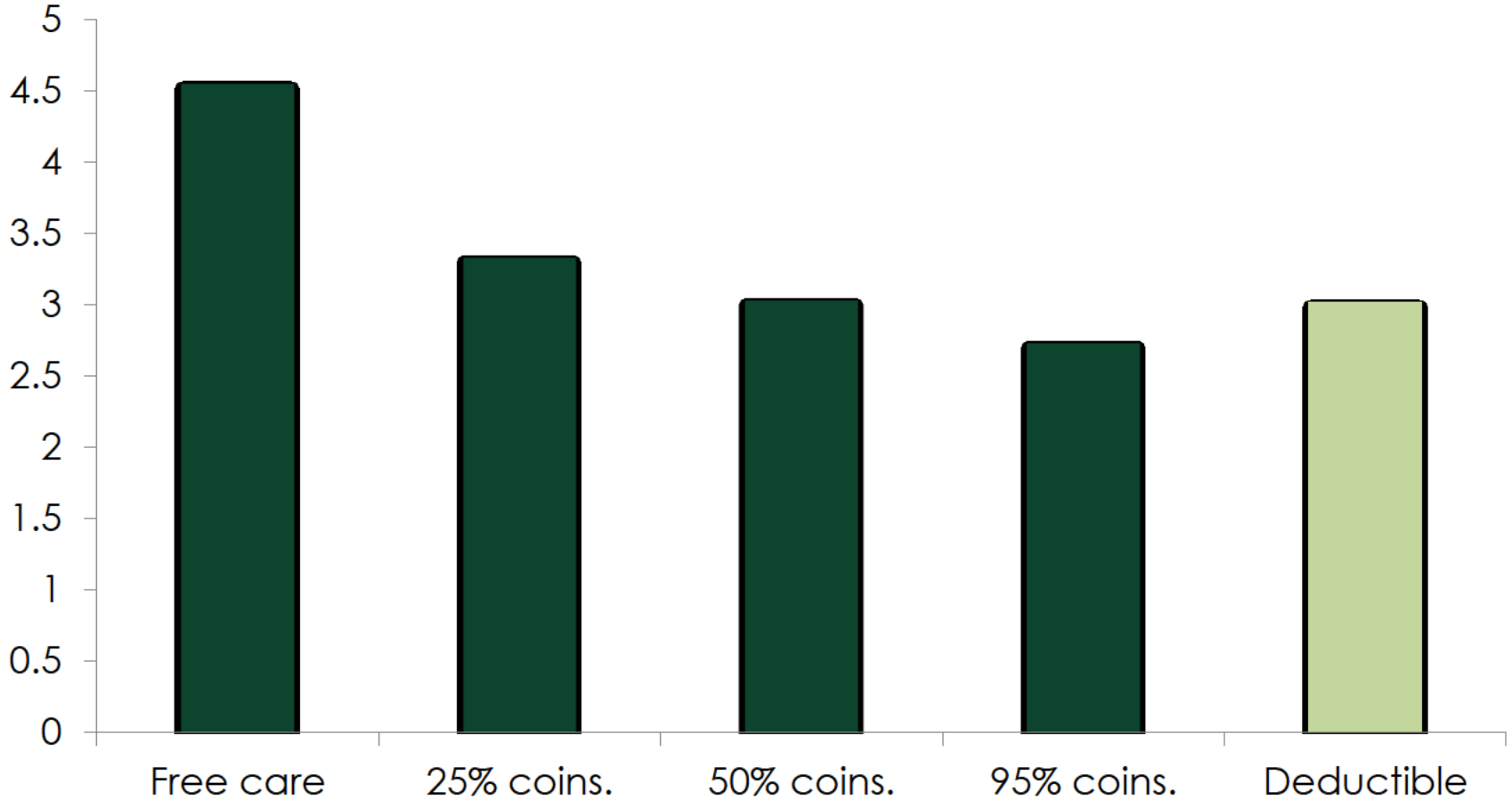
Cost-Sharing Effects: Deductible and Coinsurance

Annual Number of Face-to-Face Visits Per Beneficiary



p-value<.0001 for difference across plans

Source: Manning et al. (1988). *Health Insurance and the Demand for Medical Care: Evidence from a Randomized Experiment*.

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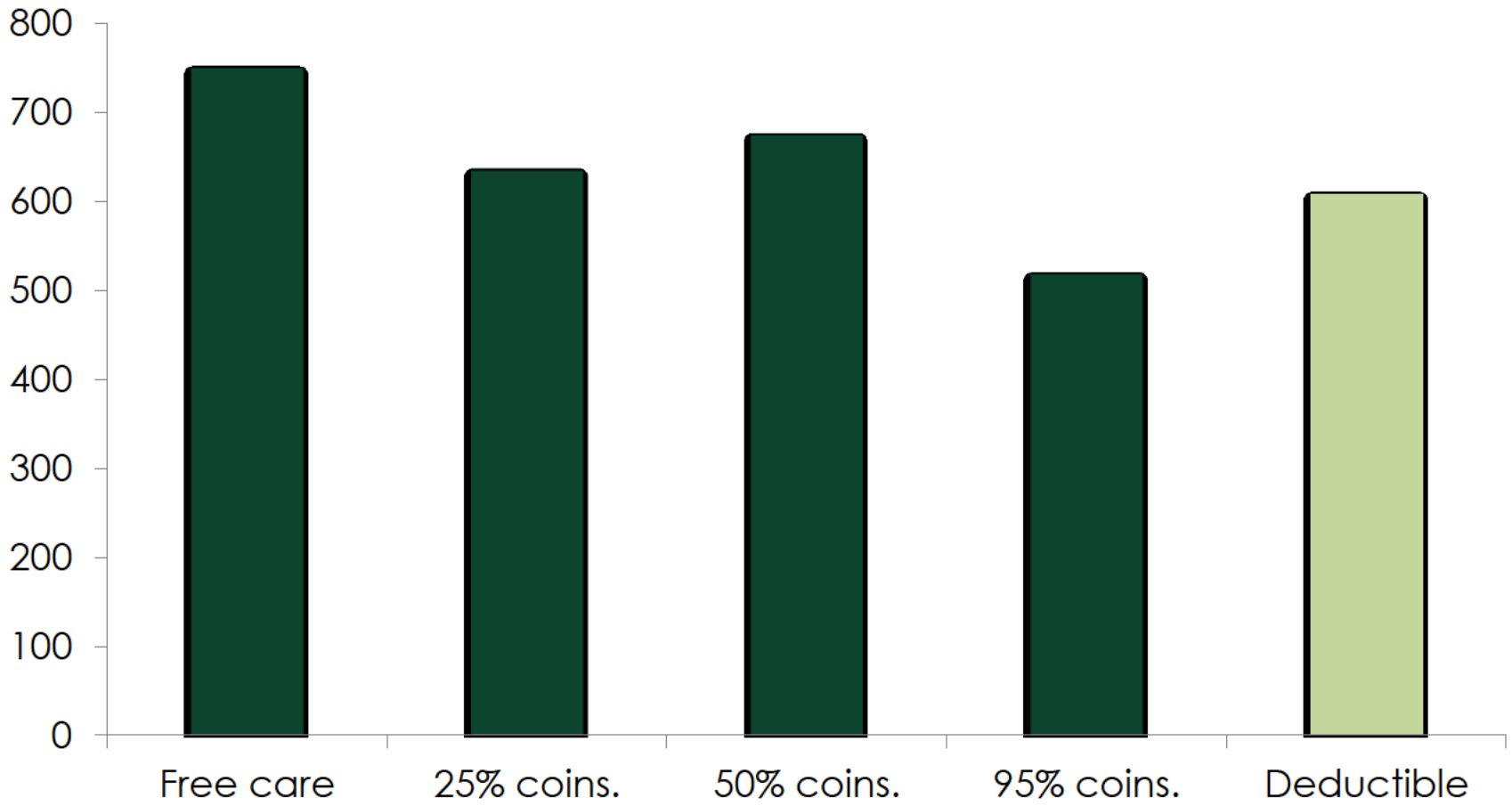
Cost-Sharing Effects: Deductible and Coinsurance

Total Annual Expenditures Per Beneficiary (1984 Dollars)



p-value=.003 for difference across plans

Source: Manning et al. (1988). *Health Insurance and the Demand for Medical Care: Evidence from a Randomized Experiment*.

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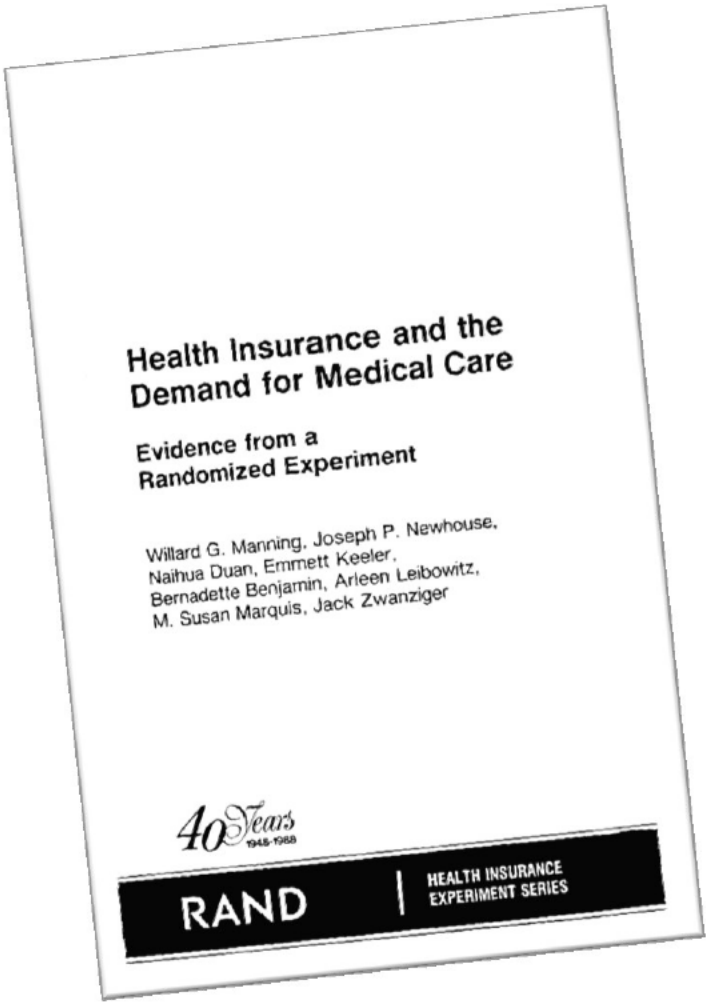
Cost-Sharing Effects: Deductible and Coinsurance



Utilization

Higher coinsurance **reduces effective and ineffective care** by same amount. A 10% rise in cost to patients led to 2% lower spending.

Outcomes

Higher coinsurance does not affect health outcomes for **healthy beneficiaries**.

Low-income groups at-risk of illness had adverse effects.

Cost-Sharing Effects

How Has Cost-Sharing Been Used?

Copayment

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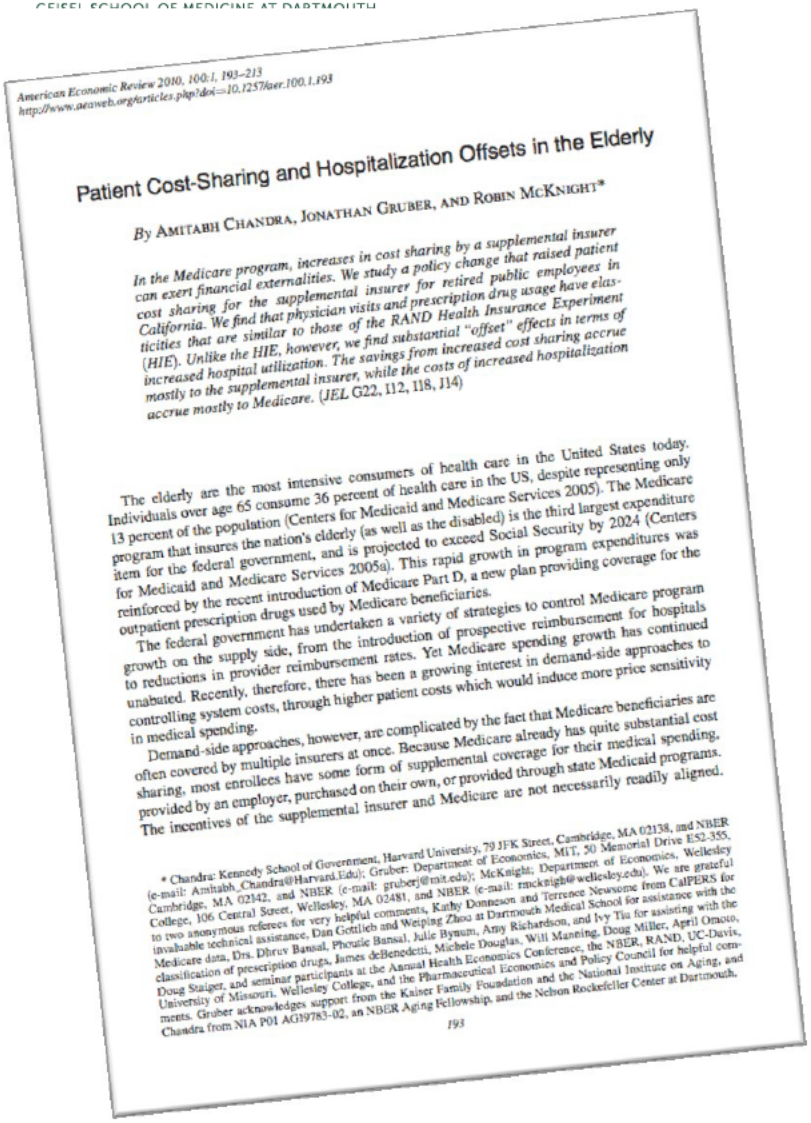
Cost-Sharing Effects: Copayment



American Economic Review 2010, 100:1, 193–213
http://www.aeaweb.org/articles.php?doi=10.1257/aer.100.1.193

Patient Cost-Sharing and Hospitalization Offsets in the Elderly

By Amitabh Chandra, Jonathan Gruber, and Robin McKnight*

In the Medicare program, increases in cost sharing by a supplemental insurer can exert financial externalities. We study a policy change that raised patient cost sharing for the supplemental insurer for retired public employees in California. We find that physician visits and prescription drug usage have elasticities that are similar to those of the RAND Health Insurance Experiment (HIE). Unlike the HIE, however, we find substantial "offset" effects in terms of increased hospital utilization. The savings from increased cost sharing accrue mostly to the supplemental insurer, while the costs of increased hospitalization accrue mostly to Medicare. (JEL G22, I12, I18, J14)

The elderly are the most intensive consumers of health care in the United States today. Individuals over age 65 consume 36 percent of health care in the US, despite representing only 13 percent of the population (Centers for Medicaid and Medicare Services 2005). The Medicare program that insures the nation's elderly (as well as the disabled) is the third largest expenditure item for the federal government, and is projected to exceed Social Security by 2024 (Centers for Medicaid and Medicare Services 2005a). This rapid growth in program expenditures was reinforced by the recent introduction of Medicare Part D, a new plan providing coverage for the outpatient prescription drugs used by Medicare beneficiaries.

The federal government has undertaken a variety of strategies to control Medicare program growth on the supply side, from the introduction of prospective reimbursement for hospitals to reductions in provider reimbursement rates. Yet Medicare spending growth has continued unabated. Recently, therefore, there has been a growing interest in demand-side approaches to controlling system costs, through higher patient costs which would induce more price sensitivity in medical spending.

Demand-side approaches, however, are complicated by the fact that Medicare beneficiaries are often covered by multiple insurers at once. Because Medicare already has quite substantial cost sharing, most enrollees have some form of supplemental coverage for their medical spending, provided by an employer, purchased on their own, or provided through state Medicaid programs. The incentives of the supplemental insurer and Medicare are not necessarily readily aligned.

* Chandra: Kennedy School of Government, Harvard University, 79 JFK Street, Cambridge, MA 02138, and NBER (e-mail: Amitabh_Chandra@Harvard.Edu); Gruber: Department of Economics, MIT, 50 Memorial Drive E52-355, Cambridge, MA 02142, and NBER (e-mail: gruberj@mit.edu); McKnight: Department of Economics, Wellesley College, 106 Central Street, Wellesley, MA 02481, and NBER (e-mail: rmcknigh@wellesley.edu). We are grateful to two anonymous referees for very helpful comments, Kathy Donneson and Terrence Newsome from CalPERS for invaluable technical assistance, Dan Gottlieb and Weiping Zhou at Dartmouth Medical School for assistance with the Medicare data, Drs. Dhruv Bansal, Phoutle Bansal, Julie Bynum, Amy Richardson, and Ivy Tiu for assisting with the classification of prescription drugs, James deBenedetti, Michele Douglas, Will Manning, Doug Miller, April Omoto, Doug Staiger, and seminar participants at the Annual Health Economics Conference, the NBER, RAND, UC-Davis, University of Missouri, Wellesley College, and the Pharmaceutical Economics and Policy Council for helpful comments. Gruber acknowledges support from the Kaiser Family Foundation and the National Institute on Aging, and Chandra from NIA P01 AG19783-02, an NBER Aging Fellowship, and the Nelson Rockefeller Center at Dartmouth.

Utilization

10% rise in price leads to 1.5% **decline** in utilization.

Reductions occurred for acute, chronic, other drugs.

Outcomes

Hospitalizations went up (especially for sickest)

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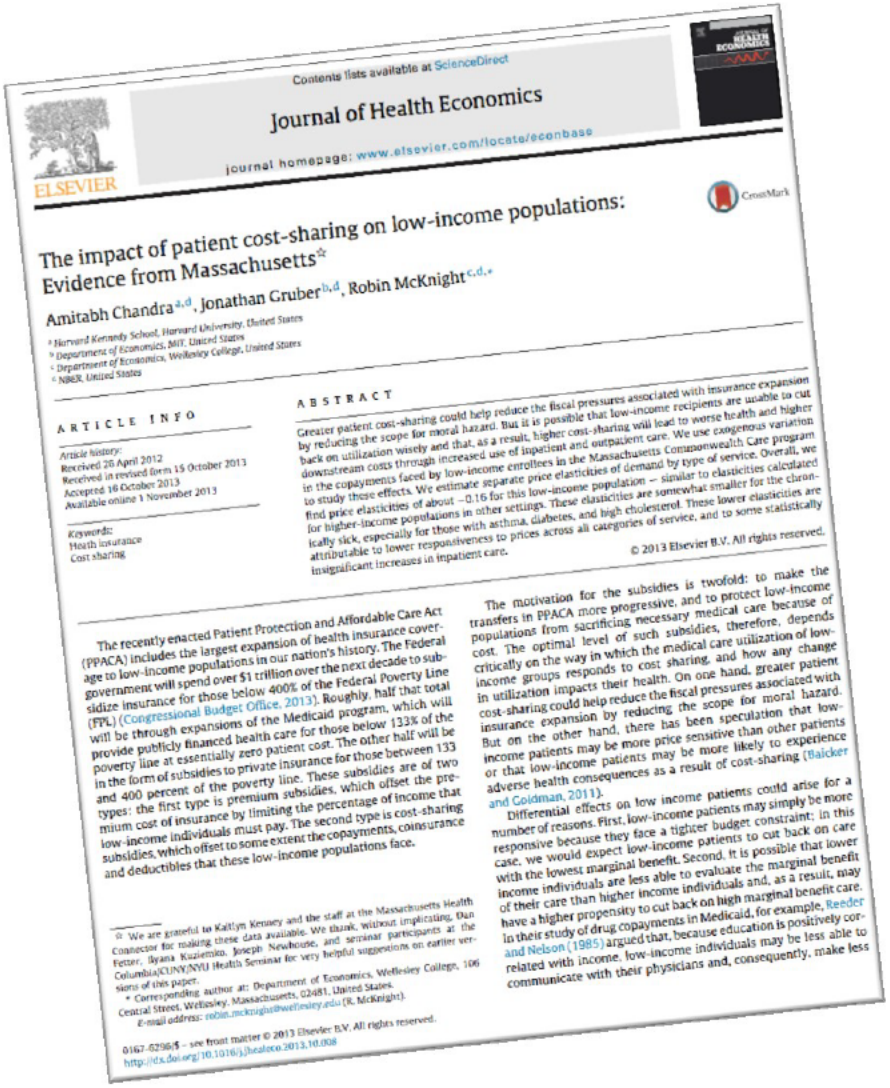
Cost-Sharing Effects: Copayment



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The impact of patient cost-sharing on low-income populations: Evidence from Massachusetts☆

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ABSTRACT

Greater patient cost-sharing could help reduce the fiscal pressures associated with insurance expansion by reducing the scope for moral hazard. But it is possible that low-income recipients are unable to cut back on utilization wisely and that, as a result, higher cost-sharing will lead to worse health and higher downstream costs through increased use of inpatient and outpatient care. We use exogenous variation in the copayments faced by low-income enrollees in the Massachusetts Commonwealth Care program to study these effects. We estimate separate price elasticities of demand by type of service. Overall, we find price elasticities of about −0.16 for this low-income population – similar to elasticities calculated for higher-income populations in other settings. These elasticities are somewhat smaller for the chronically sick, especially for those with asthma, diabetes, and high cholesterol. These lower elasticities are attributable to lower responsiveness to prices across all categories of service, and to some statistically insignificant increases in inpatient care.

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The recently enacted Patient Protection and Affordable Care Act (PPACA) includes the largest expansion of health insurance coverage to low-income populations in our nation's history. The Federal government will spend over $1 trillion over the next decade to subsidize insurance for those below 400% of the Federal Poverty Line (FPL) (Congressional Budget Office, 2013). Roughly half that total will be through expansions of the Medicaid program, which will provide publicly financed health care for those below 133% of the poverty line at essentially zero patient cost. The other half will be in the form of subsidies to private insurance for those between 133 and 400 percent of the poverty line. These subsidies are of two types: the first type is premium subsidies, which offset the premium cost of insurance by limiting the percentage of income that low-income individuals must pay. The second type is cost-sharing subsidies, which offset to some extent the copayments, coinsurance and deductibles that these low-income populations face.

The motivation for the subsidies is twofold: to make the transfers in PPACA more progressive, and to protect low-income populations from sacrificing necessary medical care because of cost. The optimal level of such subsidies, therefore, depends critically on the way in which the medical care utilization of low-income groups responds to cost sharing, and how any change in utilization impacts their health. On one hand, greater patient cost-sharing could help reduce the fiscal pressures associated with insurance expansion by reducing the scope for moral hazard. But on the other hand, there has been speculation that low-income patients may be more price sensitive than other patients or that low-income patients may be more likely to experience adverse health consequences as a result of cost-sharing (Baicker and Goldman, 2011).

Differential effects on low income patients could arise for a number of reasons. First, low-income patients may simply be more responsive because they face a tighter budget constraint; in this case, we would expect low-income patients to cut back on care with the lowest marginal benefit. Second, it is possible that lower income individuals are less able to evaluate the marginal benefit of their care than higher income individuals and, as a result, may have a higher propensity to cut back on high marginal benefit care. In their study of drug copayments in Medicaid, for example, Reeder and Nelson (1985) argued that, because education is positively correlated with income, low-income individuals may be less able to communicate with their physicians and, consequently, make less

☆ We are grateful to Kaitlyn Kenney and the staff at the Massachusetts Health Connector for making these data available. We thank, without implicating, Dan Fetter, Iryana Kuziemko, Joseph Newhouse, and seminar participants at the Columbia|CUNY|NYU Health Seminar for very helpful suggestions on earlier versions of this paper.

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Utilization

Higher copayments lead to decreased **utilization**.

Outcomes

Higher copayments **do not result** in a hospital offset.

Cost-Sharing Effects

How Has Cost-Sharing Been Used?

Tiered Formularies

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Cost-Sharing Effects: Tiered Formularies

The NEW ENGLAND JOURNAL of MEDICINE

SPECIAL ARTICLE

The Effect of Incentive-Based Formularies on Prescription-Drug Utilization and Spending

Halden A. Huskamp, Ph.D., Patricia A. Deverka, M.D., Arnold M. Epstein, M.D., Robert S. Epstein, M.D., Kimberly A. McGuigan, Ph.D., and Richard G. Frank, Ph.D.

ABSTRACT

BACKGROUND
Many employers and health plans have adopted incentive-based formularies in an attempt to control prescription-drug costs.

METHODS
We used claims data to compare the utilization of and spending on drugs in two employer-sponsored health plans that implemented changes in formulary administration with those in comparison groups of enrollees covered by the same insurers. One plan simultaneously switched from a one-tier to a three-tier formulary and increased all enrollee copayments for medications. The second switched from a two-tier to a three-tier formulary, changing only the copayments for tier-3 drugs. We examined the utilization of angiotensin-converting–enzyme (ACE) inhibitors, proton-pump inhibitors, and 3-hydroxy-3-methylglutaryl coenzyme A reductase inhibitors (statins).

RESULTS
Enrollees covered by the employer that implemented more dramatic changes experienced slower growth than the comparison group in the probability of the use of a drug and a major shift in spending from the plan to the enrollee. Among the enrollees who were initially taking tier-3 statins, more enrollees in the intervention group than in the comparison group switched to tier-1 or tier-2 medications (49 percent vs. 17 percent, $P<0.001$) or stopped taking statins entirely (21 percent vs. 11 percent, $P=0.04$). Patterns were similar for ACE inhibitors and proton-pump inhibitors. The enrollees covered by the employer that implemented more moderate changes were more likely than the comparison enrollees to switch to tier-1 or tier-2 medications but not to stop taking a given class of medications altogether.

CONCLUSIONS
Different changes in formulary administration may have dramatically different effects on utilization and spending and may in some instances lead enrollees to discontinue therapy. The associated changes in copayments can substantially alter out-of-pocket spending by enrollees, the continuation of the use of medications, and possibly the quality of care.

From the Department of Health Care Policy, Harvard Medical School (H.A.H., R.G.F.); the Department of Health Policy and Management, Harvard School of Public Health (A.M.E.); and the Section on Health Services and Policy Research, Department of Medicine, Brigham and Women's Hospital (A.M.E.) — all in Boston; and Medco Health Solutions, Franklin Lakes, N.J. (P.A.D., R.S.E., K.A.M.). Address reprint requests to Dr. Huskamp at the Department of Health Care Policy, Harvard Medical School, 180 Longwood Ave., Boston, MA 02115, or at huskamp@hcp.med.harvard.edu.

N Engl J Med 2003;349:2224-32.
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Utilization

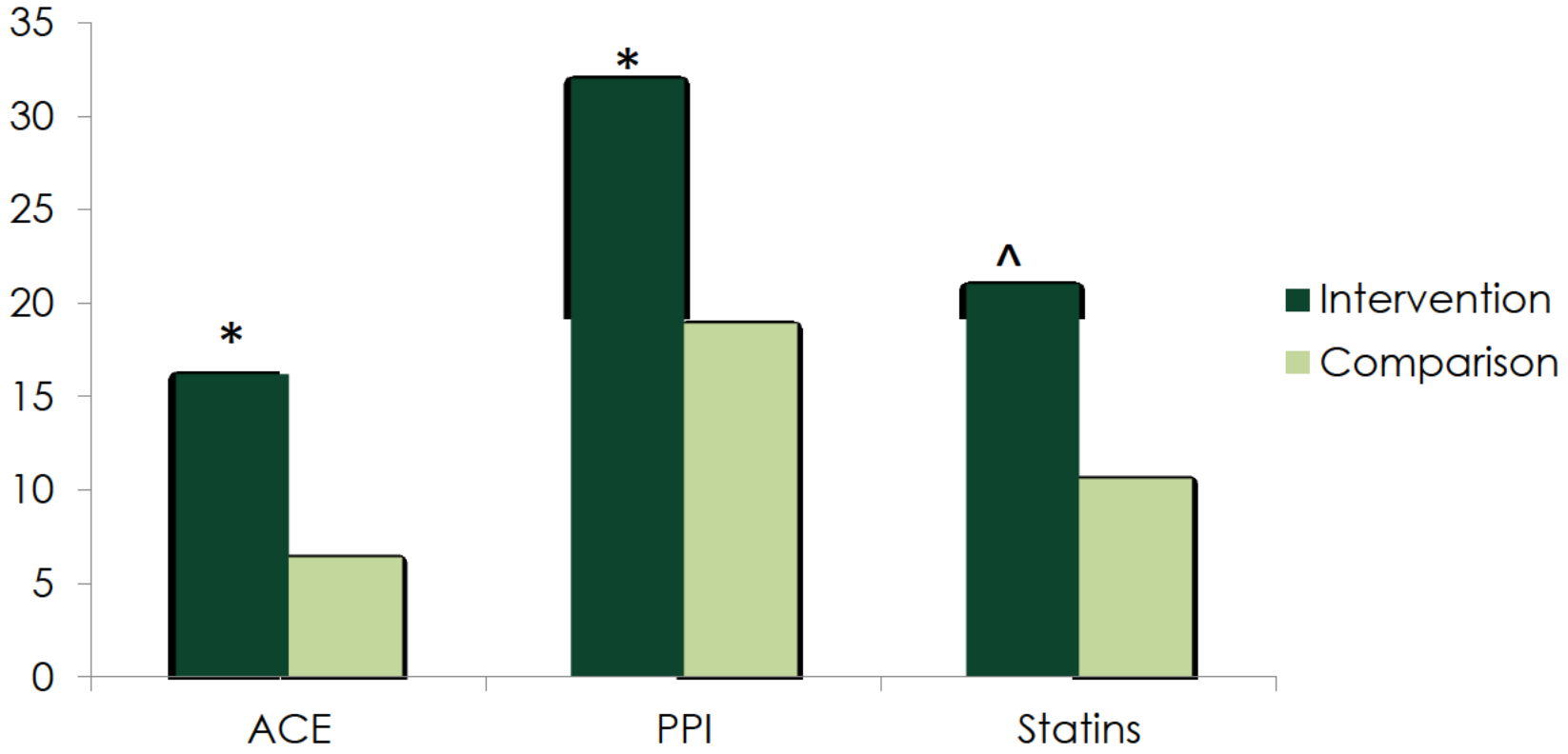
Drug spending **declined**, regardless of drug class.

Outcomes

Some patients **stopped** altogether.

Cost-Sharing Effects: Tiered Formularies

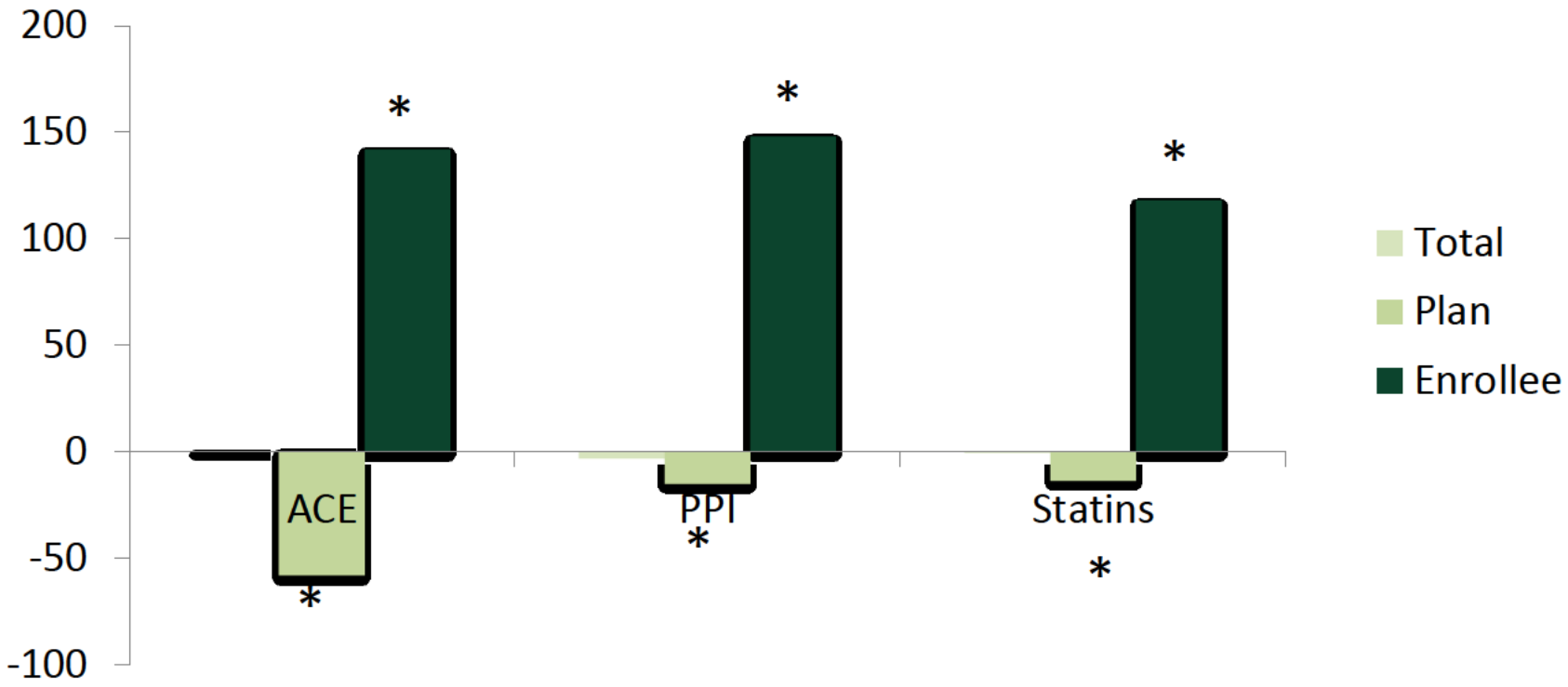
Percent Discontinuing Use in Drug Class



* P <.0001 for difference between intervention & comparison groups
^ P =.04 for difference between intervention & comparison

Cost-Sharing Effects: Tiered Formularies

Percentage Point Change In Spending, Intervention – Control Group



*P <.0001 for difference between intervention & comparison groups

Cost-Sharing Effects

How Has Cost-Sharing Been Used?

Value-Based Insurance Design

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Cost-Sharing Effects: Value-Based Insurance Design

Utilization

10% drop in price leads **to 1-4% rise** in Rx use

Cost-Sharing Effects

How Has Cost-Sharing Been Used?

High Deductibles

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Cost-Sharing Effects: High Deductibles

POLICY

Healthcare Spending and Preventive Care in High-Deductible and Consumer-Directed Health Plans

Melinda Beeuwkes Buntin, PhD; Amelia M. Haviland, PhD; Roland McDevitt, PhD; and Neeraj Sood, PhD

Objective: To investigate the effects of high-deductible health plans (HDHPs) and consumer-directed health plans (CDHPs) on healthcare spending and on the use of recommended preventive care.

Study Design: Retrospective study.

Methods: We analyzed claims and enrollment data for 806,707 households from 53 large US employers, 28 of which offered HDHPs or CDHPs. We estimated the effects of HDHP or CDHP enrollment on healthcare cost growth between 2004 and 2005 using a difference-in-difference method that compared cost growth for families who were enrolled in HDHPs or CDHPs for the first time in 2005 with cost growth for families who were not offered HDHPs or CDHPs. Control families were weighted using propensity score weights to match the treatment families. Using similar methods, we examined the effects of HDHP or CDHP enrollment on the use of preventive care and the effects of HDHP or CDHP offering by employers on the mean cost growth.

Results: Families enrolling in HDHPs or CDHPs for the first time spent 14% less than similar families enrolled in conventional plans. Families in firms offering an HDHP or a CDHP spent less than those in other firms. Significant savings for enrollees were realized only for plans with deductibles of at least $1000, and savings decreased with generous employer contributions to healthcare accounts. Enrollment in HDHPs or CDHPs was also associated with moderate reductions in the use of preventive care.

Conclusions: The HDHPs or CDHPs with at least a $1000 deductible significantly reduced healthcare spending, but they also reduced the use of preventive care in the first year. This merits additional study because of concerns about enrollee health.

(Am J Manag Care. 2011;17(8):222-230)

For author information and disclosures, see end of text.

Curbing increases in healthcare costs is a top priority for policy makers and for employers. Many believe that high-deductible health plans (HDHPs), also known as consumer-directed health plans (CDHPs), when coupled with personal savings accounts, might be one way to hold down costs. These plans, intended to make patients more cost conscious, are becoming increasingly popular, and healthcare reform may foster further growth in enrollment. As of 2009, 20% of Americans with employer coverage were enrolled in a plan with a deductible high enough to be eligible for a health savings account. Among those purchasing coverage directly, 47% had a deductible at least this high.[1] A survey of large employers at the beginning of 2010 found that more than 54% offered at least 1 CDHP option, and another 7% were planning in 2011 to adopt one.[2] Growth is expected from 2 sources, mainly CDHPs with low premiums offered through health insurance exchanges and more CDHP offerings in the employer market because of taxes placed on generous "Cadillac" plans.

Despite growing enrollment, little is known about the effects of HDHPs or CDHPs on healthcare costs and on the use of necessary care. Even less is known about the influence of specific HDHP or CDHP provisions, including deductible levels and account offerings.[3] Both questions are of key importance for those who are selecting plans in the employer or individual market. Part of the problem is the lack of good pre-post data for persons enrolling in diverse HDHP or CDHP and conventional plans. Most evidence is limited to studies with data from a single carrier, a single employer, or a single year; therefore, the findings may not apply outside of those settings. A review of these studies concluded that moving consumers from traditional plans to high-deductible plans could result in significant savings; however, coupling these plans with funded personal accounts could reduce this effect.[4] More recent work suggests that some CDHP plan designs might lead to higher spending over time, to discontinuation of chronic disease medications by patients, and to decreased use of office visits, hospitalizations, and emergency department care.[5-8] Other peer-reviewed studies[9-11] have found instances in which CDHP enrollment has no discernible effect on the use of preventive care. Reviewing a set of industry studies, the American

In this article
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Full text and PDF
Web exclusive
eAppendixes 1 to 5

Utilization

Reduction in utilization overall, even for free preventive care

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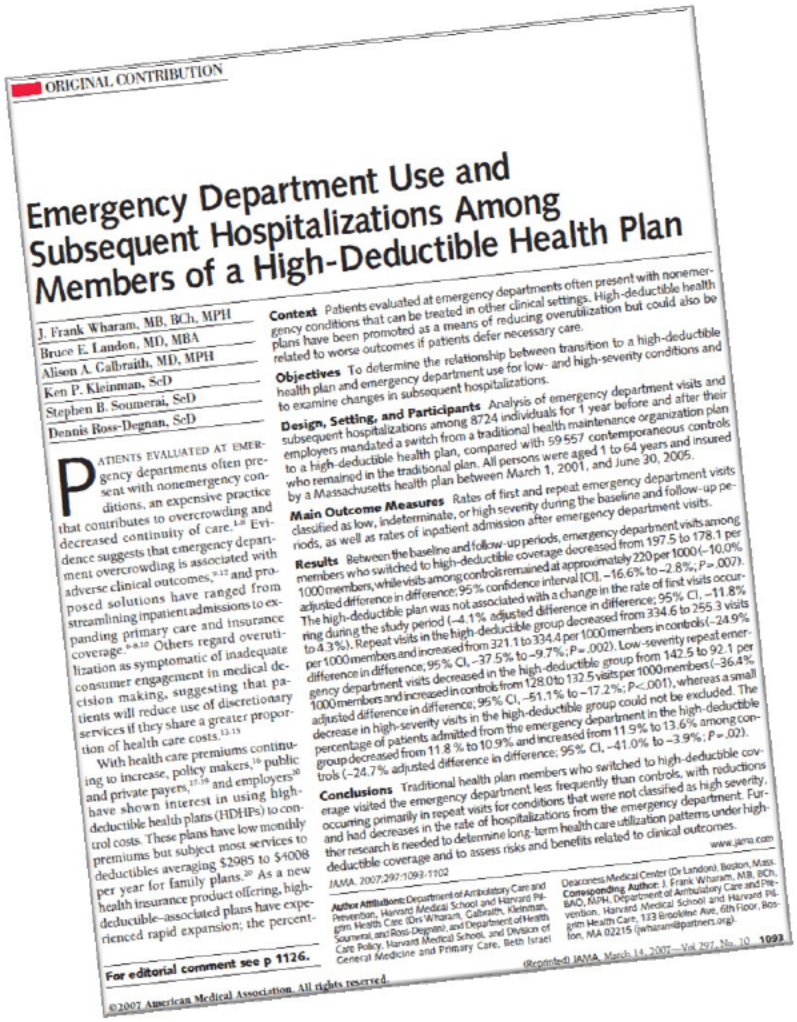
Cost-Sharing Effects: High Deductibles



ORIGINAL CONTRIBUTION

Emergency Department Use and Subsequent Hospitalizations Among Members of a High-Deductible Health Plan

J. Frank Wharam, MB, BCh, MPH
Bruce E. Landon, MD, MBA
Alison A. Galbraith, MD, MPH
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Stephen B. Soumerai, ScD
Dennis Ross-Degnan, ScD

Context Patients evaluated at emergency departments often present with nonemergency conditions that can be treated in other clinical settings. High-deductible health plans have been promoted as a means of reducing overutilization but could also be related to worse outcomes if patients defer necessary care.

Objectives To determine the relationship between transition to a high-deductible health plan and emergency department use for low- and high-severity conditions and to examine changes in subsequent hospitalizations.

Design, Setting, and Participants Analysis of emergency department visits and subsequent hospitalizations among 8724 individuals for 1 year before and after their employers mandated a switch from a traditional health maintenance organization plan to a high-deductible health plan, compared with 59 557 contemporaneous controls who remained in the traditional plan. All persons were aged 1 to 64 years and insured by a Massachusetts health plan between March 1, 2001, and June 30, 2005.

Main Outcome Measures Rates of first and repeat emergency department visits classified as low, indeterminate, or high severity during the baseline and follow-up periods, as well as rates of inpatient admission after emergency department visits.

Results Between the baseline and follow-up periods, emergency department visits among members who switched to high-deductible coverage decreased from 197.5 to 178.1 per 1000 members, while visits among controls remained at approximately 220 per 1000 (−10.0% adjusted difference in difference; 95% confidence interval [CI], −16.6% to −2.8%; $P=.007$). The high-deductible plan was not associated with a change in the rate of first visits occurring during the study period (−4.1% adjusted difference in difference; 95% CI, −11.8% to 4.3%). Repeat visits in the high-deductible group decreased from 334.6 to 255.3 visits per 1000 members and increased from 321.1 to 334.4 per 1000 members in controls (−24.9% difference in difference; 95% CI, −37.5% to −9.7%; $P=.002$). Low-severity repeat emergency department visits decreased in the high-deductible group from 142.5 to 92.1 per 1000 members and increased in controls from 128.0 to 132.5 visits per 1000 members (−36.4% adjusted difference in difference; 95% CI, −51.1% to −17.2%; $P<.001$), whereas a small decrease in high-severity visits in the high-deductible group could not be excluded. The percentage of patients admitted from the emergency department in the high-deductible group decreased from 11.8 % to 10.9% and increased from 11.9% to 13.6% among controls (−24.7% adjusted difference in difference; 95% CI, −41.0% to −3.9%; $P=.02$).

Conclusions Traditional health plan members who switched to high-deductible coverage visited the emergency department less frequently than controls, with reductions occurring primarily in repeat visits for conditions that were not classified as high severity, and had decreases in the rate of hospitalizations from the emergency department. Further research is needed to determine long-term health care utilization patterns under high-deductible coverage and to assess risks and benefits related to clinical outcomes.

www.jama.com
JAMA. 2007;297:1093-1102

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For editorial comment see p 1126.

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Utilization

Reduction in Emergency Room use even for severe emergencies

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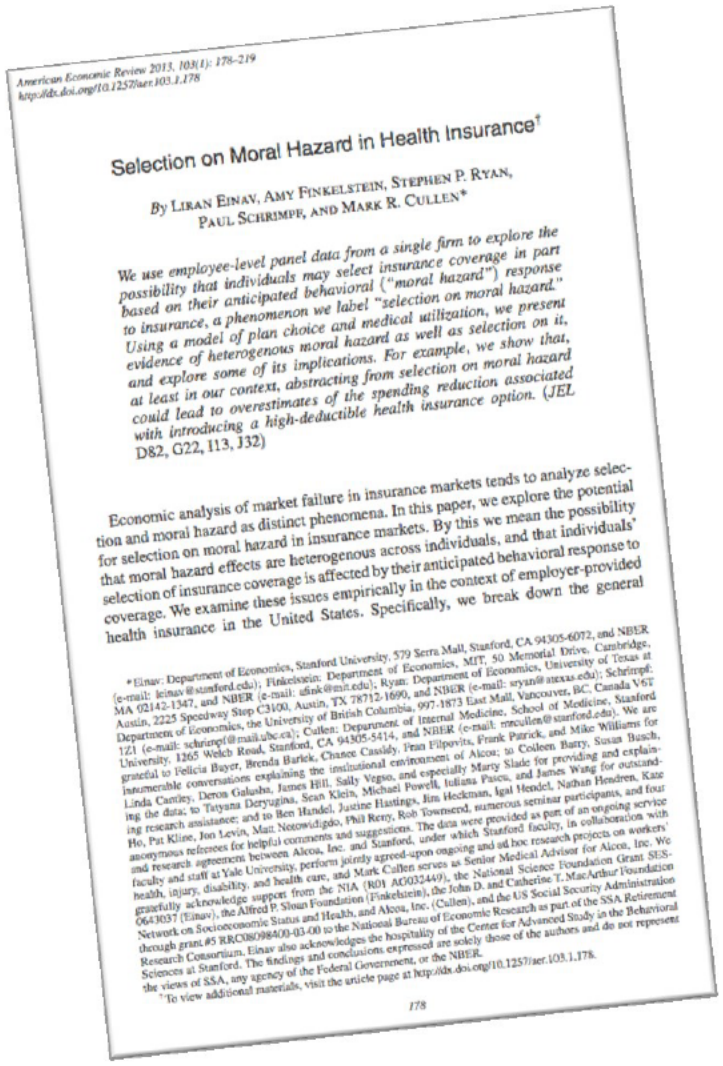
Cost-Sharing Effects: High Deductibles



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Selection on Moral Hazard in Health Insurance†

By Liran Einav, Amy Finkelstein, Stephen P. Ryan, Paul Schrimpf, and Mark R. Cullen*

We use employee-level panel data from a single firm to explore the possibility that individuals may select insurance coverage in part based on their anticipated behavioral ("moral hazard") response to insurance, a phenomenon we label "selection on moral hazard." Using a model of plan choice and medical utilization, we present evidence of heterogenous moral hazard as well as selection on it, and explore some of its implications. For example, we show that, at least in our context, abstracting from selection on moral hazard could lead to overestimates of the spending reduction associated with introducing a high-deductible health insurance option. (JEL D82, G22, I13, J32)

Economic analysis of market failure in insurance markets tends to analyze selection and moral hazard as distinct phenomena. In this paper, we explore the potential for selection on moral hazard in insurance markets. By this we mean the possibility that moral hazard effects are heterogenous across individuals, and that individuals' selection of insurance coverage is affected by their anticipated behavioral response to coverage. We examine these issues empirically in the context of employer-provided health insurance in the United States. Specifically, we break down the general

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Outcomes

Distorts timing of care

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Cost-Sharing Effects

Type of cost sharing	Utilization fell as price rose?	Adverse events vs. better health care?
Deductible Coinsurance Copay	Yes – indiscriminately by service & population	Perhaps for low income, sickest patients
Tiered formularies	Yes – all drugs	Some evidence in asthma patients over age 5
Value-based design	Yes -	Increased medication compliance
High deductibles	Yes – even for "exempt" services	Not studied

Things to keep in mind

Estimated effects of cost-sharing are remarkably consistent across settings:

- Every 10% rise in price causes fall in use/spending that is 4% or less (most are around 2.0%)

Health effects hard to demonstrate

- Average, healthy patient not affected
- Adverse events possible for sicker, poorer patients

Cost-Sharing Effects

Will cost-sharing contain medical spending?

- YES, by about 20% if cost-sharing doubles

Will cost-sharing contribute to Act 48 goals of high-quality care & sustainable costs?

- Not nearly as likely for sickest, most vulnerable Vermonters
- Should be exercised strategically

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Goals

1. There is a tradeoff between insurance and costs
2. Cost-sharing lowers health care spending
3. Cost-sharing has unintended consequences

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Health Economics: Value-Based Benefits & Analytics

Vermont House Health Care Committee
Ellen Meara, PhD

MARCH 26, 2014

Appendix B-8. Department of Human Resources Benefit Summary SELECTCARE 2014

The SelectCare POS Plan

Summary of Benefits for the Employees and Retirees of the State of Vermont

What Does "POS" Mean?

- The "SelectCare POS Plan" is a "Point-of-Service" (POS) plan. In this plan, you decide whether or not to use a network doctor or hospital at the **"point of service"**, meaning, each time you use a medical service. When you use a network provider, the plan is similar to an HMO, with no annual deductible and small copay per visit.

It's Your Choice

- You get access to quality care at the lowest out-of-pocket costs available under your plan by having your care coordinated through your Primary Care Physician and by seeing network providers. You also get the **freedom to choose** providers who aren't part of the network. Your copays are lowest when you see participating providers, but you're still covered for visits to non-network providers at a higher cost share.

Important Medical Plan Features

- You may choose a Primary Care Physician (PCP) – your personal doctor -- to coordinate your care. As your needs change, you may change your Primary Care Physician for any reason.
- **Preventive care services** for every covered family member and paid at 100%.
- See a participating OB/GYN – **no referral** required.
- **Emergency and urgent care are covered** wherever you go, worldwide, **24 hours a day**.

Drug Plan

- The program is administered by Express Scripts, Inc. The annual deductible is $25 per covered person per year. The plan covers 90% of the cost of generic drugs, 80% of the cost of preferred brand drugs and 60% of the cost for non-preferred brand drugs. For the 2014 Plan Year, the maximum out-of-pocket cost per individual per year is $775 (which includes the deductible). **40% copay drugs do not contribute to the maximum out of pocket limit.** At the local pharmacy, you show you drug plan card and pay your copay; the State is automatically billed for the balance of the cost. The drug plan also features a mail order option, with the convenience of direct home delivery for long-term maintenance drugs.

BENEFIT HIGHLIGHTS	IN-NETWORK	OUT-OF-NETWORK
Primary Care Physician (PCP) Office Visit such as:	**YOUR COST IS THE COPAY – WITH NO ANNUAL MEDICAL DEDUCTIBLE.**	**THE PLAN PAYS 70% AFTER THE ANNUAL MEDICAL DEDUCTIBLE.**
Preventive Care/Well Care:		
Periodic Physical Exams (Children and Adults)	Paid at 100%	70%
Routine Immunizations and Injections	Paid at 100%.	70%
Adult/Child Medical Care for Illness or Injury	$20 Copay per office visit	70%
Procedures performed in a Physician's Office	$20 Copay	70%
Routine Mammograms	Paid at 100%	Paid at 100%
Specialist Office Visits such as:		
Consultations and Referral Physician Services	$20 Copay per office visit	70%
Well Care (Includes Pap Test and PSAs)	Paid at 100%	70%
Procedures performed in Physician's office	$20 Copay per office visit	70%
Inpatient Hospital Services:		
Semi-Private Room and Board	$250 Copay per admission	70%
Physician Services		
Diagnostic/Therapeutic Lab and X-ray		***All inpatient hospital admissions require Precertification. Call the toll-free number on your ID Card.***
Drugs and Medication		
Operating and Recovery Room		
Radiation Therapy and Chemotherapy		
Anesthesia and Inhalation Therapy		
Inpatient Surgeon's Charges	Paid at 100%.	70%
Second Surgical Opinion	$20 Copay per office visit.	70%
Outpatient Facility Services including:		
Operating Room, Recovery Room, Procedure Room and Treatment Room including:	Paid at 100%.	70%
Physician Services		
Diagnostic/Therapeutic Lab and X-rays		
Anesthesia and Inhalation Therapy		
Outpatient Preadmission Testing		
Office Visit	Paid at 100%.	70%
Outpatient Facility	Paid at 100%.	70%
Laboratory and Radiology Services such as:		
MRIs, MRAs, CAT Scans and PET Scans	Paid at 100%.	70%
Other Laboratory and Radiology Services		
Short-Term Rehabilitative Therapy including Physical, Speech, Occupational and Chiropractic Therapies.	$20 Copay per office visit – **Maximum of 60 visits per year in aggregate.***	70% **Maximum of 60 visits per year in aggregate.***
Prescription Drugs		
For both Retail and Mail Order Drugs Combined:		
Annual Deductible (Separate from your medical deductible)	$25 per individual/$75 per family	Not Covered
Plan Pays	90% for generic drugs, 80% for preferred brand drugs, and 60% for non-preferred brand drugs	
Your 2013 Annual Maximum Copay, excluding deductible	$750 per person	
2013 Maximum Out-Of-Pocket expense per year	$775 per person ($750 maximum copays plus $25 annual deductible.) , then the plan pays 100% for the rest of the calendar year	
Emergency and Urgent Care Services at:		
Physician's Office	$20 Copay	If true emergency, benefits are the same as the in-network benefits. If not a true emergency, benefits are paid at 70%.
Emergency Room, Urgent Care or Outpatient Facility	$50 Copay per visit, (waived if admitted)	
Ambulance	Paid at 100%.	
Maternity Care Services		
Initial Office Visit to Confirm Pregnancy	$20 Copay	70%
All other office visits	Paid at 100%.	70%
Delivery		
Hospital Charges	$250 Copay per admission	70%
Physician Charges	Paid at 100%.	70%
Inpatient Services at Other Health Care Facilities including: Skilled Nursing, Rehabilitation and Sub-Acute Facilities	Paid at 100%.**60 days maximum per calendar year**	70%. **Precertification applies. 60 days maximum per calendar year**
Home Health Services	Paid at 100%.	70% ; **40 visits per calendar yr.**
Family Planning Services		
Office Visits (tests, counseling)	$20 Copay	70%
X-ray/lab if billed by separate facility	Paid at 100%.	70%
Vasectomy/Tubal Ligation (excludes reversals)		70% **Precertification applies**
Inpatient Facility	$250 per admission	70%
Outpatient Facility	Paid at 100%.	70%
Surgery in Physician's Office	$20 Copay	
Infertility Treatment – Up to $50,000/lifetime		
Office Visits (tests, counseling)	$20 Copay	Covered in-network only
X-ray/lab if billed by separate facility	Paid at 100%.	
Treatment/Surgery (includes In-vitro Fertilization, Artificial Insemination, GIFT and ZIFT) done at an inpatient or outpatient facility or physician's office.	Paid at 100%.	Covered in-network only

BENEFIT HIGHLIGHTS	IN-NETWORK	OUT-OF-NETWORK
Mental Health and Substance Abuse Precertification Required		
Inpatient Mental Health	100%	70%
Inpatient Substance Abuse	100%	70%
Inpatient Substance Abuse Detoxification	100%	70%
Inpatient Substance Abuse Rehab Facility	100%	70%
Outpatient Mental Health	100%	70%
Marital/Family Counseling	100%	Not Covered
Outpatient Substance Abuse	100%	70%
Durable Medical Equipment	Paid at 100%.	70% **$700 Calendar year maximum**
External Prosthetic Appliances	Paid at 100%.	70% **$1,000 Calendar year maximum**
Vision Care	$100 every two calendar years, no deductible or coinsurance, routine exams and lenses.	
OTHER BENEFIT INFORMATION		
Annual Deductible Individual Family	None None	$500 $1,000
Annual Out-of-Pocket (OOP) Maximum Individual Family	None None	$2,000 plus deductible $6,000 plus deductible
Coinsurance	None	The plan pays 70% of eligible charges after the annual deductible is met. You pay 30% of the charges after the annual deductible is met.
Precertification (Inpatient, Outpatient, and MRI's)	Handled by your physician	Member must obtain approval
Lifetime Maximum	Unlimited	Unlimited

* Out-of-network treatment maximums are reduced by in-network services used.

If you use an In-NetworkProvider (In-Network Services):

- All services must be provided by or referred by your Primary Care Physician (PCP) in order to be covered except for: emergency services, routine care provided by a participating OB/GYN, and mental health and substance abuse services..

If you use a Out-of-Network Provider (Out-of-Network Services):

- All out-of-network hospital admissions, outpatient surgeries and MRI's must be precertified by the member. Precertification **is not required** for emergency admissions. To precertify, call the telephone number on the back of your ID card.
- Benefits which are not covered out-of-network are: Organ Transplants, Infertility Treatment and Prescription Drugs.
- Once the out-of-pocket maximum for Out-of-Network services is reached, the plan pays 100% of eligible charges for the remainder of the calendar year.

Appendix B-9. Scenarios Illustrating Benefit Designs

State of Vermont **APPENDIX B-9. SCENARIOS**

Estimated Out of Pocket Costs For illustrative purposes only

Based on Plan Designs as of December 16, 2014

Scenario	Copay 93.5% (State Adj)	Deductible 87.0% (Catamount Adj)	Deductible Subsidy 93.5%	HDHP 80%
Pregnancy	$872	$1,705	$695	$2,100
Mental Health	$620	$900	$520	$1,445
COPD	$1,122	$2,140	$850	$2,100
Multiple Sclerosis	$2,155	$1,713	$850	$2,100
Family of Four	$515	$984	$544	$2,790

Illustrative purposes only. Based on estimated provider payment rates and a set number, type and order of services.

State of Vermont
Estimated Out of Pocket Costs - Pregnancy Scenario
Based on Plan Designs as of December 16, 2014

APPENDIX B-9. SCENARIOS
For illustrative purposes only

Scenario:
27 year old female on Single insurance. Pregnant. ER visit/delivery/surgery due to Ectopic pregnancy.

Pregnancy Services	# Units	Allowed Cost per Service	Allowed Costs	Copay 93.5% (State Adj)	Deductible 87.0% (Catamount Adj)	Deductible Subsidy 93.5%	HDHP 80%
OB/GYN exams	8	$98	$781	$280	$160	$160	$620
Ambulance	1	$1,081	$1,081	$0	$616	$296	$15
Drug - preferred brand	3	$237	$710	$217	$105	$45	$710
ER services	1	$5,220	$5,220	$75	$1,044	$1,044	$75
Surgery	1	$16,820	$16,820	$0	$3,364	$3,364	$1,550
Hospitalization	1	$5,406	$5,406	$300	$1,081	$1,081	$250
Total Potential Member Costs			$30,018	$872	$6,370	$5,990	$3,220
Total Potential Member Costs - Medical			$29,308	$655	$6,265	$5,945	$2,510
Total Potential Member Costs - Drug			$710	$217	$105	$45	$710
Maximum Out of Pocket - Combined			N/A	N/A	N/A	N/A	$2,100
Maximum Out of Pocket - Medical			$5,000	$1,600	$650	N/A	
Maximum Out of Pocket - Drug			$1,300	$1,250	$200	N/A	
Total Paid by Member			**$872**	**$1,705**	**$695**	**$2,100**	

Illustrative purposes only. Based on estimated provider payment rates and a set number, type and order of services.

State of Vermont
Estimated Out of Pocket Costs - Mental Health Scenario
Based on Plan Designs as of December 16, 2014

APPENDIX B-9. SCENARIOS
For illustrative purposes only

Scenario:
35 year old male with bipolar disease. Lithium maintenance meds. PCP visits twice per year for testing. Also sees psychiatrist 18 times per year.

Mental Health Services	# Units	Allowed Cost per Service	Allowed Costs	Copay 93.5% (State Adj)	Deductible 87.0% (Catamount Adj)	Deductible Subsidy 93.5%	HDHP 80%
PCP visit	2	$102	$204	$50	$20	$20	$107
Drugs - maintenance (generic)	12	$46	$557	$120	$120	$60	$101
Lab tests	1	$901	$901	$0	$580	$260	$901
Psychiatrist visits	18	$240	$4,325	$450	$180	$180	$335

Total Potential Member Costs	$5,987	$620	$900	$520	$1,445
Total Potential Member Costs - Medical	$5,430	$500	$780	$460	$1,344
Total Potential Member Costs - Drug	$557	$120	$120	$60	$101

Maximum Out of Pocket - Combined	N/A	N/A	N/A	$2,100
Maximum Out of Pocket - Medical	$5,000	$1,600	$650	N/A
Maximum Out of Pocket - Drug	$1,300	$1,250	$200	N/A

Total Paid by Member	**$620**	**$900**	**$520**	**$1,445**

Illustrative purposes only. Based on estimated provider payment rates and a set number, type and order of services.

State of Vermont
Estimated Out of Pocket Costs - COPD Scenario
Based on Plan Designs as of December 16, 2014

APPENDIX B-9. SCENARIOS
For illustrative purposes only

COPD Services	# Units	Allowed Cost per Service	Allowed Costs	Copay 93.5% (State Adj)	Deductible 87.0% (Catamount Adj)	Deductible Subsidy 93.5%	HDHP 80%
PCP	2	$108	$216	$50	$20	$20	$113
Hospitalized twice	2	$7,208	$14,417	$600	$3,283	$2,963	$1,800
Drugs (generic)	12	$23	$278	$120	$120	$60	$96
Drugs (brand)	12	$122	$1,460	$352	$420	$180	$393
Home oxygen and equipment	1	$3,364	$3,364	$0	$673	$673	$917
Total Potential Member Costs			$19,735	$1,122	$4,516	$3,896	$3,320
Total Potential Member Costs - Medical			$17,997	$650	$3,976	$3,656	$2,830
Total Potential Member Costs - Drug			$1,738	$472	$540	$240	$490
Maximum Out of Pocket - Combined			N/A	N/A	N/A	$2,100	
Maximum Out of Pocket - Medical			$5,000	$1,600	$650	N/A	
Maximum Out of Pocket - Drug			$1,300	$1,250	$200	N/A	
Total Paid by Member			**$1,122**	**$2,140**	**$850**	**$2,100**	

Illustrative purposes only. Based on estimated provider payment rates and a set number, type and order of services.

State of Vermont
Estimated Out of Pocket Costs - Multiple Sclerosis Scenario
Based on Plan Designs as of December 16, 2014

APPENDIX B-9. SCENARIOS
For illustrative purposes only

Multiple Sclerosis Services	# Units	Allowed Cost per Service	Allowed Costs	Copay 93.5% (State Adj)	Deductible 87.0% (Catamount Adj)	Deductible Subsidy 93.5%	HDHP 80%
PCP visits	6	$96	$577	$150	$60	$60	$121
Neurologist	3	$360	$1,081	$105	$60	$60	$390
Rehab visits	24	$60	$1,442	$600	$673	$368	$405
Durable medical equipment	1	$6,007	$6,007	$0	$260	$240	$15
Drugs - Specialty	12	$1,201	$14,417	$5,812	$660	$360	$1,263
Total Potential Member Costs			$23,524	$6,667	$1,713	$1,089	$2,195
Total Potential Member Costs - Medical			$9,107	$855	$1,053	$729	$932
Total Potential Member Costs - Drug			$14,417	$5,812	$660	$360	$1,263
Maximum Out of Pocket - Combined			N/A	N/A	N/A	$2,100	
Maximum Out of Pocket - Medical			$5,000	$1,600	$650	N/A	
Maximum Out of Pocket - Drug			$1,300	$1,250	$200	N/A	
Total Paid by Member			**$2,155**	**$1,713**	**$850**	**$2,100**	

Illustrative purposes only. Based on estimated provider payment rates and a set number, type and order of services.

State of Vermont
Estimated Out of Pocket Costs - Family of Four Scenario
Based on Plan Designs as of December 16, 2014

APPENDIX B-9. SCENARIOS
For illustrative purposes only

Scenario:
Family of four. One child with diabetes. Dad with cholesterol and high blood pressure meds. Mother to receive colonoscopy. Other child breaks arm in ski accident.

Family of Four Services	# Units	Allowed Cost per Service	Allowed Costs	Copay 93.5% (State Adj)	Deductible 87.0% (Catamount Adj)	Deductible Subsidy 93.5%	HDHP 80%
PCP visits	8	$100	$961	$200	$80	$80	$389
Drug - Diabetes (generic)	12	$173	$2,072	$120	$120	$60	$1,066
Drug - Cholesterol, BP (generic)	12	$95	$1,141	$120	$120	$60	$60
ER services	1	$1,322	$1,322	$75	$664	$344	$1,275
Colonoscopy (preventive)	1	$5,166	$5,166	$0	$0	$0	$0
Total Potential Family Costs			$10,662	$515	$984	$544	$2,790
Total Potential Family Costs - Medical			$7,449	$275	$744	$424	$1,664
Total Potential Family Costs - Drug			$3,214	$240	$240	$120	$1,126
Maximum Out of Pocket - Combined			N/A	N/A	N/A	$4,200	
Maximum Out of Pocket - Medical			$10,000	$3,200	$1,300	N/A	
Maximum Out of Pocket - Drug			$2,600	$2,500	$400	N/A	
Total Paid by Family			**$515**	**$984**	**$544**	**$2,790**	

Illustrative purposes only. Based on estimated provider payment rates and a set number, type and order of services.

Appendix B-10. GMC Secondary: Adding an Out of Pocket Limit to Medicare

Appendix B-10

Calculation of Medicare FFS AV at Various MOOP levels

		Catamount Subsidy (93.5%) = $650 (medical only)		Catamount (87%) = $1,600 (medical only)		HDHP 80% = $2,100 (includes Rx)							State 93.5% = $5,000 (medical only)				
MOOP	**$250**	**$500**	**$1,000**	**$1,250**	**$1,800**	**$2,100**	**$2,400**	**$2,500**	**$3,000**	**$3,600**	**$4,000**	**$4,800**	**$5,100**	**$5,750**	**$6,600**	**$6,750**	**$999,999,999**
Results with LDS Dual/Non Dual Mix																	
Allowed PMPM - 2012	$770	$770	$770	$770	$770	$770	$770	$770	$770	$770	$770	$770	$770	$770	$770	$770	$770
Allowed PMPM - 2017	$888	$888	$888	$888	$888	$888	$888	$888	$888	$888	$888	$888	$888	$888	$888	$888	$888
Implied Annual Trend	2.9%	2.9%	2.9%	2.9%	2.9%	2.9%	2.9%	2.9%	2.9%	2.9%	2.9%	2.9%	2.9%	2.9%	2.9%	2.9%	2.9%
Cost Share PMPM	$17	$32	$52	$60	$74	$79	$84	$86	$92	$99	$102	$108	$110	$113	$117	$118	$132
Impact of MOOP	$115	$101	$80	$72	$59	$53	$48	$47	$40	$34	$30	$24	$22	$19	$15	$15	$0
Paid PMPM	$870	$856	$835	$828	$814	$808	$803	$802	$795	$789	$785	$779	$778	$774	$771	$770	$755
Resulting AV w/MOOP	**98.0%**	**96.4%**	**94.1%**	**93.2%**	**91.7%**	**91.1%**	**90.5%**	**90.3%**	**89.6%**	**88.9%**	**88.5%**	**87.8%**	**87.6%**	**87.2%**	**86.8%**	**86.8%**	**85.1%**
Medicare FFS AV (no MOOP)	**85.1%**	**85.1%**	**85.1%**	**85.1%**	**85.1%**	**85.1%**	**85.1%**	**85.1%**	**85.1%**	**85.1%**	**85.1%**	**85.1%**	**85.1%**	**85.1%**	**85.1%**	**85.1%**	**85.1%**

For discussion and illustrative purposes only. Uses Medicare limited data set to estimate the impact of various maximum out of pocket levels on the Medicare FFS population. Parts A and B only.

Appendix C-1: The Gruber Microsimulation Model

Microsimulation is a method of analysis that uses a computer program to model ("simulate") the effects of policy changes on individual ("micro") units such as people, households and businesses. The approach used here is the type of "microsimulation" modeling used by the Treasury Department, CBO, and other government entities. This approach draws on the best evidence available in the health economics literature to model how individuals will respond to the changes in the insurance environment induced by changes in government policy.

The Gruber Microsimulation Model (GMSIM) computes the effects of health insurance policies on the distribution of health care spending and private and public sector health care costs. This model has been used over the past 15 years by a wide variety of state and federal policy makers to analyze the impacts of health insurance reforms. This model was first developed in 1999 for use in estimating the impact of tax credits on health insurance coverage, with funding from the Kaiser Family Foundation. Over the subsequent 15 years, the model's capability has been expanded to consider the full variety of possible health interventions, including public insurance expansions, employer or individual mandates, purchasing pools for insurance, single payer systems, and more.

GMSIM was the basis for the empirical modeling in the well-known February 2011 report by Professor William Hsaio. The 2011 report attempted to provide a comprehensive overview of the factors involved in transitioning to a unified and universal health care system. Central to that report was a careful modeling of the Vermont health care economy, and how it would be affected by that transition. The 2011 report is now somewhat out of date; in particular, recent survey data of Vermont households on their insurance status is now available to update the model. But the basic structure provides an excellent starting point for modeling the incidence of current health care spending.

Microsimulation Model Construction

Structure of GMSIM

The GMSIM is a complex model that has grown over 15 years to address a wide variety of health policy questions. In this section, we provide a brief overview of the model. The assumptions included in the modeled are detailed in Appendix C-2.

The GMSIM builds upon micro-data on individuals, including data available for Vermont residents in the Vermont Household Health Insurance Survey (VHHIS) and in national datasets such as the Current Population Survey (CPS).

This data on individuals is then carefully supplemented by data on employers. GMSIM builds "synthetic firms," assigning each individual worker in the dataset a set of co-workers selected to represent the likely true set of co-workers in that firm. The model uses data from the Vermont Department of Labor and the Vermont Department of Taxes to show, for workers of any given earnings level, the earnings distribution of their co-workers. Using these data, other sample individuals are randomly selected in order to statistically replicate the earnings distribution for that worker's earnings level. These workers then become the co-workers in a worker's synthetic firm.

Assigning Incidence

A starting point for any analysis of financing reform is a rich understanding of the incidence of existing health care spending. "Incidence" refers to entities that are ultimately responsible for certain costs. Only by first understanding who bears the burden of health care costs in Vermont today can we paint a rich picture of how financing alters that burden.

Addressing questions such as the incidence of health care spending requires assigning the incidence of different types of health care spending to different entities. In this section we discuss each element of health care spending and to whom it is assigned for incidence purposes, drawing on economic theory and evidence for making such assignments.

***Medicaid Expenditures*:** The incidence of Medicaid expenditures is allocated between the federal government and the state government, using future projections of the Vermont Federal Matching Assistance Percentages (FMAPs) for the base Medicaid population, the ACA expansion population, and the CHIP program. We applied these percentages to Medicaid expenditure data provided by the Vermont Agency of Human Services.

Other Government Insurance: For those covered by other government insurance (primarily military coverage) the incidence is fully on the Federal government.

***Family Premiums and Out of Pocket Medical Spending*:** The incidence of family spending on health insurance and medical spending is directly on the family, with one important exception: federal tax breaks to insurance spending. The most significant of these federal tax breaks are the deduction from federal income taxation for health insurance premiums for the self-employed and the deduction of employee premiums from state and federal taxable income for the vast majority of employees. We use aggregated data provided by the Vermont Tax Department to estimate each of these items for Vermont residents in order to assign the relative incidence between the family and the state and federal government.

***Private Employer Health Insurance Premiums*:** Employer-sponsored health insurance premiums are the single largest element of health care spending in the state. There is a large literature in economics showing that the incidence of employer premium payments is on employee wages.

We begin with the typical economics assumption that health insurance premiums were fully shifted to workers' wages in a lump sum (constant dollar) fashion across all employees. We then augment that modeling with a minimum wage constraint – wages cannot be reduced below the minimum wage, so any extra costs induced by this constraint are borne by the employer. We assume that wages are "sticky," that is, that employers do not redirect costs or savings from health care coverage immediately to wages, but rather redirect these funds over several years.

***State Health Care Spending*:** The state of Vermont and its localities spend a large share of their budgets on health care, ranging from employee health insurance spending, to the state share of Medicaid spending, to other state public health programs. For state and local health insurance spending, we assume lower incidence on wages relative to private employers.

The share of state taxes that are collected on businesses are assigned to employers as part of their incidence.

The various elements of incidence described above can have multiple impacts on any family, through their own health care spending, health insurance premiums, and state taxes. We integrate of all these changes into one total incidence measure for each family.

Modeling Green Mountain Care

The GMSIM takes as its starting point the situation in Vermont post-ACA. The model incorporates the latest available information on the impacts of the ACA in Vermont in setting the baseline for any analysis. This information includes the most recent available data on exchange enrollment across plans; plan prices and characteristics; enrollment in Medicaid; and other insurance coverage information. The GMSIM fully incorporates all aspects of the ACA.

We then model the transition to Green Mountain Care in 2017. We model the "steady state" situation in Vermont after full transition, and then consider various scenarios for transition paths to that steady state.

Modeling the impact of GMC involves several steps. First, individuals are enrolled in GMC as a default. The impacts of this default enrollment vary by type of individual:

- Uninsured individuals are directly enrolled into GMC.
- Those who currently purchase individual insurance are directly enrolled into GMC.
- Those who are on public insurance will also be directly enrolled. However, for those low income individuals who have benefits packages more generous than GMC, we also model the "wrap-around" benefits to which they are entitled.

The most difficult case is those who have employer-sponsored insurance, since employers can choose to continue to offer ESI. It also is important to differentiate multi-state employers who may be slower to change their benefits offering in response to GMC. As well, existing employers and employees will move to GMC as a function of the generosity of the program relative to their employer sponsored insurance. We use data provided by Wakely Consulting Group to measure the share of large firm employees who are employed in multi-state firms.

We then apply assumptions regarding the percentage of individuals who will remain on ESI under certain conditions. Next, we apply assumptions as to which employers will purchase supplemental insurance above GMC for their employees, and to what actuarial value. Finally, we apply assumptions as to which individuals will purchase supplemental insurance above GMC, and to what actuarial value. These assumptions are detailed in Appendix C-2.

Incorporating Actuarial Analysis

Moving to Green Mountain Care is a major reform to the insurance system which goes well beyond the types of reforms that have been studied in the past. As such, it is critical to have a sophisticated insurance pricing model which accounts for the impact of population flows and insurance design on insurance markets. The microsimulation team worked iteratively with actuaries from Wakely Consulting Group to consider the effect of insurance market change on population movements (the focus of GMSIM) and pricing (the focus of actuarial analysis).

Incorporating actuarial analysis is critical for understanding several aspects of the GMC reform.

The first is changes in health care utilization due to the changes in the nature of the health insurance package. Next, the actuarial analysis models the ultimate cost of care within the GMC pool based on the health mix and utilization decisions of those who enroll in GMC.

In particular, the integration between actuarial and economic modeling worked as follows:

- Initial insurance market prices and conditions were integrated into the model as described above
- Based on these initial conditions, as well as the policy change and form of financing, GMSIM was used to model population and income flows
- The resulting relative morbidity of populations in GMC, relative to the pre-GMC market, was then passed to Wakely.
- These morbidity changes were then incorporated into an actuarial model to capture the impact on pricing. This accounts for the potential changes in GMC population pools arising from the transition to GMC.
- This information is passed back to GMSIM by the actuary

GMSIM incorporates this information in the form of new prices in GMC populations.

Data Sources

Our modeling of the incidence of health care spending in Vermont draws upon a wide variety of rich data sources that are available for the state.

The 2012 Vermont Household Health Insurance Survey (VHHIS)

In 2012, the state of Vermont under took a detailed collection of data on households and their insurance coverage through the VHHIS. This survey gathered data from more than 4,600 Vermont households, with data on almost 11,000 state residents. This is a very large sample for a state of this size; in contrast, the three year pooled sample from the Current Population Survey that was used in the Hsaio report was only about two-thirds as large. The VHHIS data collection was cutting edge, including collection both from landlines and cell phone only households. And there was an oversample of the uninsured which allows for more comprehensive modeling of the behavior of this group.

The data include a rich battery of information for each household member, including but not limited to:

- Type of insurance coverage
- Source of insurance coverage
- Duration of insurance coverage/uninsured
- Medical expenditures
- Medical utilization and location of care
- Health Insurance premiums

- Barriers to health care receipt
- Health status
- Demographics (age, gender, education, etc.)
- Employment
- Job characteristics, including firm size and provision of health insurance
- Family income

As described above, these data provide the ideal basis for the type of microsimulation modeling that is required for a rich incidence analysis in Vermont.

Augmenting the VHHIS

While the VHHIS is the most comprehensive data source available for this analysis, it has three limitations. First, it is two years out of date. Second, there is well known under/misreporting of key measures in survey data, such as coverage by public insurance or medical expenditures. Such measurement problems could lead to important misstatements of the incidence of health care spending and the subsequent effects of reform. Finally, a number of important expenditure items are not collected by the VHHIS but are central to understanding the incidence of health care spending in Vermont.

We therefore carefully augment the VHHIS in a number of ways to produce the best possible estimates:

Medicaid coverage. Underreporting of public insurance coverage is a well-known problem in survey data. We therefore recalibrate to state and federal reports of enrollment by type of enrollee (e.g. child, disabled & blind, elderly, etc).

Public insurance spending**.** The VHHIS has no data on the insured spending of those who are enrolled in public insurance. We use data from state and federal sources to impute per capita spending by type of enrollee. Specifically, we used Medicaid expenditure data provided by the Vermont Agency of Human Services (AHS) and Department of Vermont Health Access (DVHA). These expenditures include both DVHA Medicaid expenditures as well as expenditures for mental health services and long term care services and supports provided through other departments within AHS. Estimates of managed care investments were also included in public insurance spending.

Employer-sponsored insurance premiums**.** The survey includes data on the employee portion of employer-sponsored insurance premiums, but not on the employer portion. Three Vermont insurers, Blue Cross Blue Shield of Vermont, Cigna and MVP, provided data on enrollment and premiums by firm size (both total premiums and the employer/employee shares) for their Vermont book of business.

***Individual market insurance premiums*.** Blue Cross Blue Shield of Vermont, Cigna and MVP provided data on enrollment and premiums for their individual policies.

***Income*.** The VHHIS is not designed to focus on income collection in the same way as Census data sets such as the Current Population Survey or the American Community Survey. We therefore recalibrate the income distribution in the VHHIS to match the distribution from these more precise Census data sets, as well as income data provided by the Vermont Department of Taxes.

Appendix C-2: Microsimulation Assumptions

This Appendix describes the assumptions provided by the State of Vermont to be used for the microsimulation analysis. It also describes the type of output provided to the State as an output from the model. It is important to remember that the numbers presented throughout this report are **estimates** despite the precise dollar amounts. Readers should avoid drawing strong conclusions from small differences, which result due to rounding.

Populations

A. Population counts: Population counts by type of insurance for the 94% AV Best Policies run can be found in Appendix A-1.
   1. *Non-group*: those holding individual insurance policies (no longer exists under GMC)
   2. *Medicaid primary*: those who are Medicaid eligible and have no other insurance (incorporated fully into GMC)
   3. *Employer sponsored insurance*: this is divided into private, state, local and municipal employees
   4. *Federal government insurance*: Federal Employee Health Benefits
   5. *Uninsured*
   6. *Medicare*: overall Medicare enrollment, as well as supplementation by individuals (medi-gap), by Medicaid (duals), and by employers
   7. *Military insurance*
   8. *GMC enrollment*: overall GMC enrollment, and separately present those who are receiving employer supplementation to GMC and those who are purchasing GMC supplements on their own
   9. *Commuters in*: We assume that residents of other states who work in Vermont for a Vermont firm are able to enroll in GMC. These non-residents would pay the public premium in the same manner and amount as a Vermont resident with the same income and family size.

B. Key assumptions relating to these population counts include:
   1. We assume the number of uninsured is zero under GMC due to the operational planning by the State.
   2. We assume all employees of small firms (with fewer than 100 employees) drop ESI and go onto GMC, under the state's Affordable Care Act Section 1332 waiver.
   3. We assume a three year phase down of ESI for large firms. We break down large group ESI down into four groups – those in national firms and those not in national firms, and then within those we distinguish between those who have an ESI AV higher than they are offered on GMC and those that have a lower ESI AV. Our assumptions for the percentage of employees of large firms who remain on ESI are laid out in the following table:

Large Group ESI Assumptions	National firms	Vermont only firms
Firm offers ESI with AV *Greater* than GMC's AV	Year 1: 60% remain on ESI Year 2: 40% remain on ESI Year 3 & thereafter: 12.5% remain on ESI	Year 1: 25% remain on ESI Year 2: 12.5% remain on ESI Year 3 & thereafter: 0% remain on ESI
Firm offers ESI with AV *Lower* than GMC's AV	Year 1: 30% remain on ESI Year 2: 15% remain on ESI Year 3 & thereafter: 0% remain on ESI	0% remain on ESI in any year

4. We assume that all employees of state, local, and municipal employers drop ESI in the first year and go onto GMC.
5. For federal employees, we assume that virtually all federal employees move on to GMC rather than pay for both ESI and GMC. We assume no impact on military.
6. We assume no impact on Medicare.

C. Data sources for populations include the Vermont Household Health Insurance Survey (VHHIS), enrollment in public insurance programs provided by the Vermont Agency of Human Services and Department of Vermont Health Access, and data reported by Vermont health insurers for this project.

Private Insurance Coverage and Spending

Spending is in millions, while enrollment is in thousands of persons.

A. Key assumptions relating to private coverage and spending include:

1. *Trend*: We assume private insurance spending increases based on the trends projected in Table 17 of the National Health Expenditure accounts.[1]

2. *Non-group* premium spending is spending on individual insurance without GMC

3. *Individual supplementation of GMC*: We measure spending on individual supplementation of GMC by allowing individuals to supplement in either of two cases:

[1] See Table 17 of the National Health Expenditure Data, found at http://www.cms.gov/Research-Statistics-Data-and-Systems/Statistics-Trends-and-Reports/NationalHealthExpendData/NationalHealthAccountsProjected.html

a. If the individual's ex-ante AV is above their GMC AV, and their ex-ante premium is above their individual contribution to GMC, then they buy-up to their ex-ante AV, and
b. If the individual's ex-ante AV is above their GMC AV, but their ex-ante premium is below their individual contribution to GMC, then they buy-up 50% of the difference between their ex-ante AV and GMC AV.

4. *Individual supplementation of Medicare*: We assume no change due to GMC.

5. *Private employer spending:* We show base coverage for active workers (those remaining on ESI), as well as supplementation of active workers who move to GMC. We also show supplemental spending for retirees.
   a. *Supplemental coverage*: To model private employer supplementation of GMC, we consider the firm's spending on the employees' ex-ante premium before GMC, and the ex-ante AV of the plan the employer provided before GMC. Our assumptions are summarized as follows:
      (1) If the firm spent *more* on the employee's ex-ante premium than GMC AND the ex-ante AV of the plan the employer provided is higher than the employee is receiving on GMC, then the employer supplements the employee up to the ex-ante AV, with similar cost sharing arrangements (e.g. 80/20 cost sharing).
      (2) If the firm spent *less* on the employee's ex-ante premium than before GMC, but the ex-ante AV of the plan the employer provided is higher than the employee is receiving on GMC, then the employer supplements up to 50% of the AV difference.

   b. *Employer savings re-directed to employee wages*: To the extent that an employer's spending on health insurance without GMC exceeds the employer's spending under GMC on the GMC payroll tax, plus any supplemental coverage for its employees to maintain previous coverage levels, we assume that the employer will re-direct some of its savings to employee wages.
      1. *Total amount shifted to wages*: We assume that private employers redirect 60% of savings to wages the first year, 80% the second year, and 100% each year after that.
      2. *Total remaining un-shifted*: This represents extra costs to wages that employers are unable to shift to due minimum and nominal wage restrictions.
      3. *Total withheld:* This represents savings to wages that firms choose not to shift (this is a wage stickiness assumption). We assume that employers re-direct any remaining savings to uses other than wages, for example, investing in capital equipment, paying down debt, or new hiring.

6. *Federal Employee Spending:* We assume no change in insurance coverage for federal employees. We assume no federal supplementation.

7. *Military Spending*: We assume no change in military health insurance coverage. We assume no supplementation.

8. *State/local/municipal employees:*
   a. *Coverage for active workers*: We assume all public employees move to GMC
   b. *Supplemental coverage*: This category includes active employees and retirees; samples are too small to split them out. We make the same assumptions regarding public employer supplementation of GMC as we made for private employer supplementation in paragraph 5.a.
   c. *Employer savings re-directed to employee wages*: We assume that state, local and municipal employers savings after paying the GMC payroll tax and any supplemental coverage as follows. State, local and municipal employers redirect 50% of savings to wages in the first year, 60% in the second year, 80% in the third year, 90% in the fourth year, and 100% in all remaining years.

B. Data Sources: Private coverage and spending projections were based on data reported by Vermont health insurers for this project.

GMC Enrollment & Spending

GMC spending per member per month by category of enrollee was calculated by actuaries at Wakely Consulting Group. (See methodology in Appendix D.) This includes:

1. GMC spending, and enrollment on GMC, for each type of employer
2. GMC spending for Medicaid primary
3. We are assuming no GMC effect on Medicare
4. GMC spending for individuals not in the labor force

GMC enrollment and spending was modeled based on the behavior of synthetic firms and individuals created for this model.

Data sources for GMC enrollment and spending include data reported by Vermont health insurers for this project, the Vermont Household Health Insurance Survey (VHHIS), the Vermont Health Care Uniform Reporting and Evaluation System (VHCURES), data provided by the Vermont Department of Labor, data provided by the Vermont Tax Department, and public program enrollment and spending reports.

State and Local Budget Implications

We looked at state and local budget implications by breaking down GMC spending across categories and adding in state spending on Medicaid & GMC supplementation of Medicare.

This shows revenues to the state, under both ACA & GMC scenarios, from traditional taxes, as well as the new GMC payroll tax, the GMC individual contributions, and the dollar transfer from the federal government to cover Medicaid costs and 1332 waiver pass-through funding.

A. Key assumptions

1. *Wage effects on taxes:* As noted above, we assume that employers that experience savings under GMC will re-direct some savings to employee wages. Employees who receive higher wages will pay a portion of those wages in higher state income tax. We assume that these employees will spend some of their higher wages on goods and services, resulting in small increases to revenues from the state's sales tax, meals tax, gas tax, etc.

2. *State spending*:
   a. *Provider payment rates:* GMC and Medicaid spending assumes GMC pays standard payment rates to health care providers for all GMC enrollees. These standard provider payment rates are a blend of commercial and Medicaid rates.
   b. *Medicaid fixed costs:* Medicaid spending assumes some spending will not vary with enrollment, utilization and GMC payment rates (e.g. graduate medical education costs, investment in Managed Care Organizations, Long-Term Care costs).

3. *State Revenue:*
   a. *GMC payroll tax:* The employer payroll tax would be levied at a rate of 11.5% on all Vermont businesses on their qualifying Vermont payroll. Qualifying payroll is all payroll except wages for any individual employee in excess of $200,000 with that amount adjusted annually for inflation.
   b. *GMC individual contributions:* we use a percent of income contribution in the same format as the ACA. 0% of income up to 138% FPL, 2.5% of income from 138-150% FPL, 2.5% - 9.5% of income from 150-400% FPL, and 9.5% of income at 400% + FPL, capped at $27,500.
   c. *Federal funding for Medicaid:* Federal Financial Participation (FFP) on Medicaid expenditures assumes that Vermont's base and CHIP Federal Matching Assistance Percentages (FMAPs) continue to decrease by 2% per year until the base FMAP reaches the federal minimum of 50.00% in 2020. The FMAP for the federal expansion population (childless adults <138% FPL) is calculated according to the ACA formula. The FMAP projections are displayed in the following table.

Projections of the Federal Matching Assistance Percentage (FMAP) for Vermont Medicaid

FMAP by Calendar Year	SCHIP: Children 237% - 312% FPL	Expansion population: Childless Adults <138% FPL	Base FMAP: All other Medicaid-eligible populations, including Dual eligibles
2014	69.93%	78.52%	57.04%
2015	74.95%	82.47%	56.18%
2016	90.18%	86.09%	53.64%

Projections of the Federal Matching Assistance Percentage (FMAP) for Vermont Medicaid			
2017	89.45%	86.52%	52.58%
2018	88.73%	89.76%	51.55%
2019	88.14%	93.00%	50.59%
2020+	88.00%	90.00%	50.00%

d. *Federal ACA Pass-Through Funding:* uses conservative assumptions and assumes that the federal government will forward to Vermont the funds that it would otherwise provide to individuals in Advance Premium Tax Credits (APTCs) and Cost Sharing Reductions (CSRs) under the ACA, less funds it would collect from the Cadillac Tax, individual mandate, and equity assessment (large employer penalty). Federal ACA pass-through funding decreases from 2018 forward because it is offset by federal Cadillac tax revenue. The state uses a slightly less conservative assumption in its balance sheet and does not reduce the pass-through funding by the Cadillac Tax, individual mandate, and equity assessment (large employer penalty). The calculation methodology that will be used by the federal government for pass-through funding has not yet been published by the federal government and thus is uncertain.
e. *Provider taxes*: We assume that under GMC the existing provider taxes will be repealed, including the taxes on nursing home beds and acute hospital, psychiatric hospital, ICF/MR, home health and outpatient pharmacy revenues.
f. *Other state revenue sources*: We assume the employer assessment will be repealed and that revenue from the claims tax and premium tax will be substantially reduced under GMC.

Federal Budget Implications

Federal spending includes the Federal Medicaid payments to Vermont, as well as spending on ACA individual and firm tax credits.

<u>Key assumptions:</u>

1. *Federal spending*:
   a. *Federal transfer to Vermont for Medicaid primary:* Federal Financial Participation (FFP) for Medicaid Primary increases under GMC because total state Medicaid expenditures increase.
   b. *Federal ACA Tax Credit Spending* is the same without GMC and with GMC. We assume that the federal government will pass-through funding for APTCs and CSRs on behalf of individuals who, without GMC, would have received these subsidies through the Exchange in the relevant year between 2017-2021. Under the ACA, the federal government pays these funds to individuals in the form of tax credits. Under GMC, the federal government pays the funds to the state and the state directs the funds to pay for GMC.

2. *Federal revenue:*
    a. *ACA revenues* (Cadillac tax, mandate & equity assessment) are the same with and without GMC. While Vermont firms and individuals would not be paying these taxes and assessment after the State receives an ACA waiver of these requirements, it is important to include the calculation in the event the federal government determines these projections must be subtracted in the pass-through calculation.
    b. *Federal income tax revenue:* Federal income tax revenue is expected to *increase* as a result of higher wages and not paying health care premiums pre-tax. Federal income tax revenue is expected to *decrease* as a result of deducting the GMC tax on Schedule A. The net result of these three effects is a small *decrease* in federal income tax revenue.
    c. *Payroll tax revenue* is expected to increase as a result of higher wages.

Family Spending

Spending at the family level is in actual dollars (rounded to nearest $10) and includes both earned and unearned income.

We also looked at family spending, *on average* across all families in the state. A family that spends $0 on a particular category, for example a family that pays $0 in property tax, is included as a $0 in the average.

Family spending includes:

1. *Out of pocket medical expenditures:* this line does not include premium contributions
2. *Non-group*: Individual market premium spending
3. *ESI premium spending:* Employee contribution to employer sponsored insurance premium
4. *ESI supplementation to GMC*: Employee contribution to employer sponsored supplemental insurance. We assume cost-sharing between employer and employee for supplemental insurance is similar to cost-sharing for ESI premiums (e.g. 80/20).
5. *Individual contributions for GMC*
6. *Individual supplementation of GMC*
7. *Tax payments:* Federal payroll tax includes only the individual portion of payroll taxes, not the employer portion.

Appendix D-1: Actuarial Cost Analysis and Assumptions

This Appendix describes the assumptions and analyses provided by Wakely Consulting Group (Wakely). Wakely's key analyses include 2017 cost projections, plan designs, and additional benefit modeling. The cost projections and analyses used information from multiple sources, including but not limited to health plans, micro-simulation results and the State of Vermont. For complementary information on data sources and assumptions, see Appendix C-2 on micro-simulation assumptions.

2017 Cost Projections

A. Data Sources: Many different sources of data were considered as the basis for the cost projections. The Expenditure Analysis and VHCUREs data were used as reasonability checks for the data but were not otherwise used. The data used was total cost of care (or allowed claims), including member cost sharing.

   1. *Commercial*: To project the 2017 commercial costs, Wakely relied on data provided by the health plans that included 2013 premium, allowed and paid claim costs for each of the individual, small and large group markets. This data represented a large portion of the commercial market but did not include all of the large group market. Based on reasonability checks with other data sources, the Per Member Per Month (PMPM) costs appeared reasonable to use for the entire large group market.

   2. *Medicaid*: Given the significant changes in Medicaid due to the Affordable Care Act (ACA), it was preferable to use 2014 data. The State of Vermont provided all Medicaid costs for the 2015 State Fiscal Year, split but primary, secondary, and other/fixed costs (which included items such as GME, DSH, long term supports and services and administrative costs).

B. Key assumptions relating to the projection of costs to 2017 include:

   1. *Benefit changes (Commercial only):* Under GMC, pediatric dental and vision are required to be covered benefits. Since the starting data for commercial was pre-ACA, these costs would not yet be included in the base data. An adjustment for these benefits was estimated using publicly available rate filings in Vermont, prior benefit analyses specific to Vermont, and information provided from the micro-simulation on the percent of covered lives who would receive these benefits.

   2. *Trend:* As discussed in other sections of the report, trends were developed for both the commercial and Medicaid markets. The first set of trends was to bring the base data to 2017 without GMC. These trends were developed in conjunction with Rand. The following information was used to estimate the trends (the list is not all inclusive):
      - Publicly available rate filings in Vermont
      - Emerging commercial experience in VHCUREs
      - Green Mountain Care Board hospital budgets

- Any expected SIM savings, if applicable
- Medicaid historical trends, based on data supplied by the State of Vermont
- CMS/NHE national trends

The following table shows the final allowed PMPM claim cost trends by year that were mutually agreed upon by Wakely and Rand. Given the base data was 2013 for commercial and state fiscal year 2015 for Medicaid, some of the earlier trend years were not ultimately used. Based on guidance from the State, some Medicaid "Other" costs were not trended (for example, GME payments are a fixed amount per year). Additionally, LTSS costs were trended at an annual rate of 3 percent based on information provided by the State.

Year of Trend	Medicaid	Commercial
2012-2013	3.8%	6.5%
2013-2014	4.9%	6.5%
2014-2015	1.1%	6.2%
2015-2016	2.9%	6.1%
2016-2017	3.9%	7.7%

3. *Morbidity (Commercial only):* Under GMC the covered population will be different compared to the base data. The health status difference of the population, or the morbidity change, was an output from the micro-simulation and varied based on the scenario and number of people estimated to be covered under GMC. For commercial, the two key population differences under GMC were employees who will not have coverage under GMC but are in the base data and the uninsured who will be eligible for GMC but are not in the base data. The impact of the population differences results in a significant decrease to PMPM costs, driven by the assumption that the uninsured are significantly healthier than the current population. For the commercial 94 percent actuarial value plan, including commuters and federal employees, the morbidity adjustment was estimated to be -6.4 percent based on the micro-simulation results. For Medicaid it was assumed that the uninsured who are eligible for Medicaid enrolled as part of the ACA in 2014. Thus, no additional morbidity adjustment was made for Medicaid.

4. *Provider Payments:* Under GMC, the state provided the assumption that provider payment rates would be based on the current Medicaid and commercial reimbursement rate, combined to alleviate any cost shift due to today's Medicaid rates, and then trended forward to the applicable year. These payments are expected to be neutral in total due to the elimination of the cost shift, but the changes have implications on the separate commercial and Medicaid markets. The University of Massachusetts provided provider payment rates for each market by inpatient, outpatient and professional, split by providers that will be impacted by GMC and those that will not. In general, it was

assumed any provider in Vermont as well as select providers in neighboring states, would be impacted by GMC provider payment changes. Wakely also estimated the portion of commercial and Medicaid costs that would be impacted. Many costs were excluded, including but not limited to, prescription drugs, dental, and long term services and supports (Medicaid). It was also assumed that Medicare secondary covered costs under Medicaid would not be impacted. Based on the current payment rates, the percent of costs impacted, and projected membership in each market, an estimate was made to the impact of both markets on having the same, but overall neutral, provider payment rates. This results in a large increase to the overall Medicaid costs and a notable decrease to the overall commercial costs once combined within GMC.

5. *Induced Demand (Commercial only):* Based on the current data from the health plans as well as VHCUREs, the average actuarial value (or percent of costs that are paid for through health care coverage) is around 86%. If more generous coverage is offered, it is expected that the utilization of services will increase, all else equal. Similarly, if less generous coverage is provided, utilization would be expected to decrease, all else equal. As part of the ACA, HHS released proposed induced utilization factors[1]. These factors were used to estimate the change in utilization based on the various actuarial values, interpolating where necessary. Since one GMC scenario is an actuarial value of 100%, an induced utilization assumption was developed for this scenario.

6. *Actuarial Value (Commercial only):* The actuarial value of a plan is based on the expected average claim costs covered under GMC. Various plan designs were considered with the target actuarial value used to reduce the allowed claims. For plan designs with less than a 94 percent actuarial value, a weighted average of actuarial values was completed to account for the population eligible for 94 and 87 percent cost sharing subsidies, as applicable. The distribution of the population eligible for subsidies, based on FPL, was an output of the micro-simulation and varied by scenario.

7. *Payer Administrative Expenses:* Administrative expenses for the commercial market were assumed to be 7% under GMC. This is less than the current non-benefit expense loads in health plan premiums, resulting in some savings under GMC. For Medicaid, the current administrative costs were assumed to continue under GMC.

C. Methodology: To arrive at the 2017 cost projections, the base data was used in conjunction with the above assumptions, all of which are multiplicative except administrative expenses. The result was a "premium equivalent" for both commercial and Medicaid under GMC. These premium equivalents were incorporated into the micro-simulation. If the output using the premium equivalents changed the above assumptions (e.g. morbidity), the process was re-iterated to achieve a steady state.

[1] https://www.federalregister.gov/articles/2013/03/11/2013-04902/patient-protection-and-affordable-care-act-hhs-notice-of-benefit-and-payment-parameters-for-2014#h-42

D. Results: The following tables show the premium equivalents developed for both commercial and Medicaid using the above data, assumptions and methodology. The "Other Costs" are shown in total dollars since these costs are mostly unaffected by enrollment changes. The other values are PMPM amounts.

	Commercial
2013 Allowed PMPM	$419.07
Benefit Change Factor	1.012
Trend Factor (4 years of Trend)	1.292
Morbidity	0.936
Provider Payment Change	0.880
Induced Demand	1.056
2017 GMC Allowed PMPM	$476.60
Actuarial Value	0.935
2017 GMC Paid PMPM	$445.62
Administrative Load	7%
2017 GMC Premium Equivalent	$479.16

	Medicaid		
	Primary	Secondary	Other Costs
SFY15 Allowed PMPM	$466.99	$545.13	$648,418,583
Benefit Change Factor	1.000	1.000	1.000
Trend Factor (2.5 years of Trend)	1.075	1.075	1.049
Morbidity	1.000	1.000	1.000
Provider Payment Change	1.338	1.000	1.000
Induced Demand	1.000	1.000	1.000
2017 GMC Allowed PMPM	$671.76	$586.01	$679,979,377
Actuarial Value	1.000	1.000	1.000
2017 GMC Paid PMPM	$671.76	$586.01	$679,979,377
Administrative Load			Included in Other Costs
2017 GMC Premium Equivalent	$671.76	$586.01	$679,979,377

Plan Designs

As part of GMC, several plan design options were considered at various actuarial value levels. These plan designs are described and provided in Appendix B and incorporate three actuarial value levels: 80, 87, and 94 percent. The development of these plan designs was based on the following process.

A. Gather input:

1. *Current Plan Designs* for key plans, such as state employee plan, VEHI plans, and Catamount Health were provided as the starting point for plans at the 94 and 87 percent actuarial value levels.

2. *Input* from the State of Vermont, consultants and other key stakeholders were provided that shaped some of the plan design options. This input was iterative as Wakely developed and refined various plan options.

B. Development of plan designs:

1. *The Truven Health Benefit Modeler,* developed in conjunction with Wakely, was used to develop the plan designs that would meet the target actuarial value levels. Underlying the modeler is detailed claim and enrollment data for over 42 million commercially-insured lives. Since allowed costs can have a significant impact on the actuarial value of a plan, the model was first normalized to the estimated 2017 allowed costs, which varied depending on the targeted actuarial value of the plan, largely due to induced demand but also because of differences such as morbidity. Once the model was normalized for the estimated 2017 allowed costs, the cost sharing was adjusted until the targeted actuarial value was achieved. While the model has many cost sharing inputs for various service categories, only a subset have a significant impact on the resulting actuarial value.

2. *The Federal Actuarial Value Calculator (AVC)* was used as a check of the Truven Health Benefit Modeler. This was only a high level reasonability check and the Federal AVC is expected to be less precise for several reasons. First the model is not normalized to 2017 GMC estimated allowed costs. Second, the model has less inputs which results in less precision. Lastly, the primary goal of the Federal AVC is to bucket similarly generous plans rather than be an accurate pricing tool. However, since it is critical that the plan design be reasonably accurate and pricing models will all produce different results, the Federal AVC was used to ensure the reasonability of the plan design results. In order to produce the most relevant comparison, the Draft 2016 AVC was used. Additionally, the metal level chosen in the AVC was based on the allowed costs in the Federal AVC continuance table compared to the GMC plan rather than matching the metal tier to the approximate actuarial value of the GMC plan.

3. *The 80 percent high deductible health plan* required additional modeling. This plan design has two separate deductibles, one that applies to inpatient services and another that applies to all other categories of services (the deductibles do not apply to preventive services). Neither the Truven Health Benefit Modeler nor the Federal AVC can accommodate this plan design. To approximate the actuarial value and resulting cost sharing levels for this plan, Wakely developed a combined deductible that would be similar in actuarial value to the two separate deductibles. However, this is a less precise method and the cost sharing for this plan should be considered illustrative only. If this plan is considered in the future, Wakely recommends using separate inpatient and "all other" continuance tables to model this plan design. Another alternative would be to use a claim re-adjudication process on the VHCUREs commercial data to more accurately reflect the actuarial value of this plan design. In both cases, the underlying data would need to be adjusted to reflect the expected GMC population and expected costs.

   In addition to the cost sharing, the 80 percent high deductible plans also included an account feature for the subsidy eligible population. The subsidies were more generous than the current federal ACA cost sharing subsidies with additional, higher FPLs receiving some subsidies. Wakely used the Federal AVC to estimate the impact of these accounts. No rollover of accounts was assumed although the State may consider partial rollovers in the future, particularly to encourage certain behaviors, such as receiving annual preventive care. A few federal AVC results for the accounts were not intuitive. If this plan is considered in the future, the impact of these accounts should be re-evaluated using the same proposed methods to evaluate the actuarial value and cost sharing of the plans (separate continuance tables or claim re-adjudication).
4. *Results* are based on the various scenarios and assumptions used to produce the allowed cost estimates. To the extent any of these assumptions are updated or allowed costs are refined, the plan designs would need to be updated as well. Additionally and as noted, neither the Truven Benefit Modeler nor the Federal AVC could accommodate the cost sharing structure for some of the plans (particularly select 80 percent plans). These plan designs would require further refinement and scrutiny should there be future interest in these plan options.

Additional Benefit Modeling

As required under Act 48, the estimated cost of covering hearing, adult dental, adult vision and long term care were calculated. The following is a high level summary of the assumptions that went into each of these cost estimates. The cost estimates are shown in Appendix B-1. Wakely also estimated the impact of Medicare secondary coverage where the commercial MOOP was applied to the Medicare fee for service benefits.

A. Hearing: Vermont's current Essential Health Benefits (EHB) do not cover annual hearing exams or hearing aids so would not automatically be covered services under GMC. Medicaid currently covers this benefit.

   1. *Data*: VHCUREs data was used as a basis for the cost projections. It was assumed that if an individual had a hearing aid covered that their entire employer group

had hearing coverage. Using this methodology, data for only those assumed to cover hearing benefits were used as the base data. Both utilization and cost per service or device were calculated for these members.

2. *Assumptions:*
    i. Trend: The trends used for medical costs (and listed in the above table) from 2012 to 2017 were also used for hearing.
    ii. Benefits and Cost Sharing: The benefits were set to closely align with the Medicaid benefits. One annual exam per year is covered with a $20 copay and hearing aids were covered with no member cost sharing every three years. If the State of Vermont decides in the future to pursue a deductible plan, the cost sharing should be reviewed to ensure it is appropriate considering the medical coverage.
    iii. Administrative Expenses: An assumption of 7% was used which is likely reasonable since this benefit would be incorporated into the medical coverage.
    iv. Enrollment: The scenario used in the cost estimation excluded commuters and federal employees as well as wrap coverage for employees who remain on employer sponsored coverage. If the hearing benefit is considered in the future the cost estimates should be updated to reflect the current enrollment estimates.

B. Adult Vision: Vermont's current Essential Health Benefits do not cover annual vision exams or hardware except for pediatric coverage and would therefore not be automatically covered for adults under GMC. Medicaid currently covers an exam but does not cover hardware.

1. *Data*: VHCUREs data was used as a basis for the cost projections. It was assumed that if an individual had vision hardware covered that their entire employer group had vision coverage. Using this methodology, data for only those assumed to cover vision benefits were used as the base data. Both utilization and cost per service were calculated for these members although the utilization results did not appear reasonable. The Federal vision premiums were also used to check for reasonability of the resulting cost estimates.

2. *Assumptions:*
    i. Trend: The trends used were 3 percent annual. This considers that vision typically trends lower and also that the benefit maximum would limit the impact of trend unless adjusted for inflation.
    ii. Benefits and Cost Sharing: The benefits were set to closely align with the Federal vision benefits, since these benefits are the basis for the pediatric vision benefits under Vermont's EHB. One annual exam and hardware per year are covered (frames and contacts have annual benefits maximums although the pediatric benefit does not). Since Medicaid already covers

an exam, only the cost of hardware is included as an additional cost under GMC.

iii. Administrative Expenses: An assumption of 7% was used to match the commercial medical assumption but this is likely aggressive since this benefit historically has administrative costs that are a higher percent of overall costs.

iv. Enrollment: The scenario used in the cost estimation excluded commuters and federal employees as well as wrap coverage for employees who remain on employer sponsored coverage. If the adult vision benefit is considered in the future the cost estimates should be updated to reflect the current enrollment estimates.

v. Percent of Adults: The percent of GMC enrollees that this benefit would apply based on age was an output of the micro-simulation. Adults are expected to be approximately 84% of the commercial population and 58% of the Medicaid population.

C. Adult Dental: Vermont's current Essential Health Benefits do not cover dental except for pediatric coverage and would therefore not be automatically covered for adults under GMC. Medicaid currently covers dental up to an annual maximum of $510.

1. *Data:* The primary source of dental data was 2010-2012 Vermont specific data from Truven's MarketScan Dental Data, including data only for those aged 19 and older. Given most current dental benefits include annual benefit maximums, dental data is typically missing claims once the member reaches the maximum. As a result, dental data needs to be used with caution. As a result, we also used several other sources of data or premiums to check for reasonability. These include the State employee dental premiums, Delta Dental rate filings and Delta Dental adult only Vermont Health Connect premiums.

2. *Assumptions:*

i. Trend: The trends used were 6% annual. Dental trends have been lower recently but given the longer trending period, a more conservative trend assumption was used.

ii. Benefits and Cost Sharing: Cost estimates were calculated for three different benefit and cost sharing scenarios. These are shown in Appendix B-1.

iii. An adjustment was made to estimate the impact of missing claims due to current plans having an annual benefit maximum. This adjustment was made primarily to Restorative and Major services since these services are most likely to be impacted by the benefit maximum.

iv. Administrative Expenses: An assumption of 7% was used to match the commercial medical assumption but this is likely aggressive since this benefit historically has administrative costs that are a higher percent of overall costs.

v. Enrollment: The scenario used in the cost estimation excluded commuters and federal employees as well as wrap coverage for employees who remain on employer sponsored coverage. If the adult dental benefit is considered in the future the cost estimates should be updated to reflect the current enrollment estimates.
vi. Percent of Adults: The percent of GMC enrollees that this benefit would apply based on age was an output of the micro-simulation. Adults are expected to be approximately 84% of the commercial population and 58% of the Medicaid population.

3. *Results*: Based on our analysis and the various data points reviewed, if adult dental is considered under GMC, refining these estimates and underlying data is critical to more accurately estimating the cost of adult dental. There is also likely to be increased utilization in the early years of coverage as those without prior coverage have pent up demand.

D. Long Term Services and Supports: Currently, Long Term Services and Supports (LTSS) is provided to the Vermont Medicaid population. A cost estimate was developed assuming full LTSS coverage would be extended to the non-Medicaid population in 2017.

1. *Data:* The cost estimate was based on the 2012 Vermont Health Care Expenditure data. The 2012 non-Medicaid and non-Medicare covered costs associated with home health and nursing home care were used as a starting point for the projection.

2. *Assumptions:*
   i. Trend: Costs were trended from 2012 to 2017 based on the historical LTSS 2009-2012 trend, adjusted for enrollment increases, from the Expenditure Analysis. An additional trend adjustment was made to account for the aging population in Vermont. The total average trend used varied from 4.0 to 5.0 percent annually.
   ii. Induced Demand: Based on several LTSS studies, a significant amount of LTSS is either provided by unpaid caregivers or the need goes unmet. Cost estimates for the unpaid cost ranges vary significantly. The studies we reviewed included the following:
      • A November 2010 study produced by UMass Medical School's Center for Health Law and Economics and Office of Long-Term Support Studies on behalf of the Massachusetts Long-Term Care Financing Advisory Committee. This study indicated that $8.6 billion was paid for LTSS costs in Massachusetts and that an additional $9.6 billion in cost was either unpaid or came from needs that went unmet. Applying this additional cost to the

relative non-Medicaid and non-Medicare costs results in an induced utilization factor of about 5.0.[2]

• An AARP study titled "Valuing the Invaluable: 2011 Update" estimated that in 2009, $203 billion was paid for LTSS costs nationally and an additional $405 billion was provided by unpaid care givers. Applying this additional cost to the relative non-Medicaid and non-Medicare costs results in an induced utilization factor of about 8.0.[3]

• An additional AARP study from September 2011 indicated that in 2004, 72% of older people living in the community received assistance exclusively from unpaid caregivers. This study further supports the above indication that the cost of unpaid care-giving is about two to three times the amount of total paid caregiving.[4]

iii. Cost Sharing: The analysis assumes there would be no cost sharing by the member. Costs would be significantly reduced if there were cost sharing. Additionally, implementing a waiting period of 30 to 90 days could reduce the total cost estimate by 10% to 20%.

E. Medicare Secondary Coverage: Medicare remains primary after implementation of GMC. GMC could provide secondary coverage for those with Medicare as their primary insurance. When considering the 80% AV plan, which included an income sensitive out of pocket maximum, an analysis was done of applying these maximums as secondary coverage for those on Medicare. The results of this analysis are in Appendix B-10.

1. *Data:* CMS 2012 Limited Data Set (LDS) was used as the base data for the analysis. Vermont specific data, including both dual and non-dual members, was used. Allowed PMPMs and continuance tables were developed using this data. Only Part A and B data was included. Part D (prescription drug) was not included as part of the analysis since secondary coverage with the drug benefit would be complicated.

2. *Assumptions:*
   i. Trend: The allowed costs were trended at an average of 2.9 percent annually from 2012 to 2017 based on projected Medicare fee for service costs.
   ii. Cost Sharing: The secondary coverage would apply only to Medicare fee for service (FFS) members since the Medicare Advantage population already incorporates a MOOP. The FFS cost sharing was applied to the

[2] http://www.mass.gov/eohhs/docs/eohhs/ltc/ma-ltcf-full.pdf
[3] http://assets.aarp.org/rgcenter/ppi/ltc/i51-caregiving.pdf
[4] http://www.longtermscorecard.org/~/media/Microsite/Files/Reinhard_raising_expectations_LTSS_scorecard_REPORT_WEB_v5.pdf

2017 estimated data, with a resulting 85 percent actuarial value for Parts A and B (the actuarial value varies by duals and non-duals).

3. *Results:* The impact to the actuarial value was estimated for each of the plan designs considered for the current commercial market under GMC. Wakely's Medicare bid model was used with the data and assumptions above for each MOOP amount. Given the higher expected costs of Medicare beneficiaries, the resulting actuarial value increases significantly for the lower MOOP levels. There is a more modest increase in actuarial value for MOOPs that align with the maximum allowable under the ACA for the commercial market.

Reliances and Caveats

1. Wakely relied on data and projections that were provided by the health plans, the State, Rand and Jonathan Gruber. We performed reasonability checks, but did not audit the data we received. If the underlying data or information is inaccurate or incomplete, the results of our analysis may need to be modified accordingly.

2. It is impossible to project costs several years into the future with accuracy, and it is particularly difficult to project the effects of untested reforms. We made assumptions and estimates in order to develop these projections. To the extent that actual results differ from these assumptions, our results could be materially affected.

3. This document is intended for use by the State of Vermont for discussion purposes only. The report may not be appropriate for other purposes. Wakely does not intend to benefit and assumes no duty or liability to other parties who receive this work. The report should only be reviewed in its entirety and then only by qualified individuals.

Michael Costa
Deputy Director of Health Care Reform - Finance
Agency of Administration
State of Vermont

December 26, 2014

Subject: Risk Mitigation for Green Mountain Care

Dear Michael,

Wakely was retained by the State of Vermont (State) to develop considerations in two specific approaches towards risk mitigation for Green Mountain Care (GMC): reinsurance with specific stop loss and reserve for adverse deviation of claim costs. We do not recommend the State purchase stop loss reinsurance given the anticipated size of GMC. We also estimated that an insurance company with the size and risk characteristics similar to those of GMC would need to hold between 4.4% and 13.0% of annual claims.

Specific Stop Loss to Mitigate High Cost Claimants

Specific stop loss insurance is typically purchased from reinsurers and protects a self-funded employer group or insurer from the financial impact of high cost individuals. It does not provide much protection against overall adverse experience. The cost of specific stop loss insurance is typically high relative to the coverage afforded. On average, reinsurers expect to pay out about 60% of the premiums they collect for the coverage meaning the cost of the coverage is approximately 40% of the premiums. Self-funded employers with a couple of hundred to thousands of covered employees typically purchase reinsurance to protect against catastrophic costs for a single individual or multiple high cost claimants in a given year – outside of what would be expected based on historic experience. For these employers, a single million dollar claim could represent a large proportion of their overall medical expenditures and cash reserves. For Green Mountain Care, with roughly $3.6 billion in estimated annual claim costs (excludes long term support and services and other Medicaid fixed costs), individual large claims are very unlikely to materially affect overall expenditures. In addition, such a large block of business is very stable and past experience is credible for predicting future large claims incidence. The most significant risk to the financial health of a large cohort like the proposed Vermont system include inappropriate provider contracts, mispricing, pandemic type events and fraud. While the impact of some of these may be partially mitigated by the presence of stop loss insurance, it is an inefficient and expensive way of addressing these risks.

Capital to Support GMC Program

GMC is considering retaining capital for purposes of addressing potential adverse deviations in medical expenditures and tax revenue underlying a potential change to a state run healthcare program. One approach to considering appropriate capital levels to address such adverse deviations is the NAIC's Risk-Based Capital (RBC) formula.

From http://www naic.org/cipr_topics/topic_risk_based_capital htm:

Risk-Based Capital (RBC) is a method of measuring the minimum amount of capital appropriate for a reporting entity to support its overall business operations in consideration of its size and risk profile. RBC limits the amount of risk a company can take. It requires a company with a higher amount of risk to hold a higher amount of capital. Capital provides a cushion to a company against insolvency. RBC is intended to be a minimum regulatory capital standard called the Authorized Control Level (ACL) and not necessarily the full amount of capital that an insurer would want to hold to meet its safety and competitive objectives. In addition, RBC is not designed to be used as

a stand-alone tool in determining financial solvency of an insurance company; rather it is one of the tools that give regulators legal authority to take control of an insurance company if reserves fall below the ACL.

Insurance companies must hold at least 200% of the ACL to avoid any actions and typically hold 250% to 350%. Therefore, an insurance company with the size and characteristics of the Vermont system would have to hold somewhere between 4.4% and 13% of annual claims to meet typical insurance company RBC targets under the assumptions modeled.

We would recommend that a full Enterprise Risk Management (ERM) analysis be performed as key options for funding, provider payment, benefits and administration are selected and refined. This type of analysis may consider RBC fundamentals rather than applying the NAIC's formula from the RBC Calculator.

Wakely used the NAIC's 2014 RBC model and entered key values into the model. The inputs included "premium equivalents" and claims for enrollees currently in commercial and Medicaid lines. Medicare members were not considered in this analysis. The claims and premiums were developed in a separate analysis and any assumptions/limitations described in that analysis apply but may not be described here.

We assumed that GMC would offer coverage at the 94% actuarial value to all members. The scenario incorporates the higher enrollment estimate, including but not limited to coverage for commuters and federal employees.

We did not consider that many government programs operate on a "pay as you go" basis. This means that liabilities are not considered when determining if there is sufficient cash to cover operations. We assume funding would take place in advance of claims being incurred each month and that payments to providers would follow typical insurance company payment patterns, meaning there would be approximately one to three months' worth of incurred claims in cash available over and above any capital retained to address adverse experience. Our RBC modeling estimates RBC levels required over and above this cash, on the assumption that this cash could not or should not be used to address adverse deviations.

We assumed some portion of the claims are capitated to reflect the fact that the Green Mountain Care Board sets hospital budgets and that Vermont is moving away from fee for service toward capitation. For RBC calculations, hospital budgets may effectively be modeled as capitations. Under a scenario of all providers being paid under capitated arrangements, we estimate the ACL of the program at approximately 2.2% of annual incurred claims (approximately $81M assuming $3.6B in annual incurred claims). Under a scenario of 30% of provider payments being capitated and 70% being contractual arrangements or fee for service, we estimate the Authorized Control Level at approximately 3.8% of annual incurred claims (approximately $136M).

The RBC formula was not developed to specifically inform state capital levels under a system such as that being considered in Vermont. However, it does provide one useful, industry-accepted construct for considering capital levels to support insurance operations.

The RBC formula was not set up to handle certain unique characteristics of potential state run health programs, including the following proposed, high level mechanisms:

1. Premiums are actually comprised of tax revenue and amounts paid by covered state residents.
2. Provider reimbursement rates in Vermont are partially set using state budgeting mechanisms.
3. Provider reimbursement rates can be adjusted prospectively if tax revenues are insufficient.

Many details were not available nor could be reflected in the model, including but not limited to covered and excluded populations, taxing mechanisms and timing, the political environment, economic environment, required administrative functions and costs, specific provider contracting levels and mechanisms, and medical management programs.

A state run healthcare insurance system, with unilateral taxing and provider contracting authority is a very different entity than the typical health insurance company. Therefore, the modeling discussed above should be considered only as one viewpoint related to this question, rather than the only viewpoint. In addition, emerging details up for debate may materially affect estimates produced as part of this modeling.

Caveats

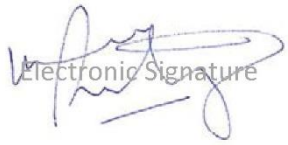
Wakely relied on data and projections that were developed jointly by Wakely, the State, and Jonathan Gruber. We performed reasonability checks, but did not audit the data we received from non-Wakely entities. If the underlying data or information is inaccurate or incomplete, the results of our analysis may need to be modified accordingly.

It is impossible to project costs and capital needs several years into the future with accuracy, and it is particularly difficult to project the effects of untested reforms. We made assumptions and estimates in order to develop these projections. To the extent that actual results differ from these assumptions, our results could be materially affected.

This document is intended for use by the State of Vermont for discussion purposes only. The report may not be appropriate for other purposes. Wakely does not intend to benefit and assumes no duty or liability to other parties who receive this work. The report should only be reviewed in its entirety and then only by qualified individuals.

Guidelines issued by the American Academy of Actuaries require actuaries to include their professional qualifications in all actuarial communications. I am a member of the American Academy of Actuaries, and meet the qualification standards for performing the analyses in this report.

Julie Peper, FSA, MAAA
Director and Senior Consulting Actuary
Wakely Consulting Group



Karan Rustagi, ASA, MAAA
Consulting Actuary
Wakely Consulting Group

Appendix E-1: All-Payer Health Care Payment System Background

The purpose of this concept paper is to describe the general approach Vermont is proposing for all-payer health care payment reform. This paper can serve as a starting point for discussion among internal and external stakeholders, including the federal Centers for Medicare and Medicaid Services (CMS), about the proposed approach.

Vermont is developing a payment reform strategy that is consistent with federal policy and builds on the public/private partnership that has been established in the state. Our proposed approach allows for appropriate provider autonomy and consumer protection under the umbrella of a transparent, effective regulatory system.

Vermont has undertaken a multi-year effort to implement universal, comprehensive health care coverage for all of the state's residents that is equitably financed and made affordable well into the future. The state plans to seek a federal all-payer waiver that would permit Medicare and Medicaid participation in payment and delivery system reforms that are central to the plan. These reforms build on the innovative models supported by CMS and on the progress made within Vermont to implement those models. Specific Vermont achievements in payment and delivery system reform, made with CMS support, include:

- Vermont has used its long-standing section 1115 waivers (the Global Commitment and Choices for Care) to fund Medicaid managed care investments and to shift services away from institutional care to community-based services;
- More than 80 percent of Vermonters are served by an Advanced Primary Care Medical Home that is part of the MACPAC all-payer demonstration;
- The vast majority of Vermont providers, including all of our hospitals and New Hampshire-based Dartmouth Hitchcock Medical Center (DHMC, a major provider of health care to Vermonters) are in one of three Vermont ACOs participating in the Medicare Shared Savings Program;
- DHMC also is in the Pioneer ACO program for New Hampshire;
- The majority of Vermont's federally-qualified health centers have formed a primary care-based ACO;
- Vermont received a State Innovation Model (SIM) grant, which has supported expansion of the shared savings program to Medicaid and commercial insurers. Three of our ACOs are participating in the commercial ACO program, while two are participating in the Medicaid program;
- The SIM grant also is supporting development of all-payer bundled payments and full build-out of Vermont's health information exchange infrastructure.

Building on this active participation in CMS initiatives, and CMS support of Vermont's innovation efforts, Vermont is proposing a statewide, all-payer system of provider payment. Governor Shumlin has proposed covering the bulk of Vermonters through one payer under a system of public financing. We believe this proposal could work

equally well with that model or with our existing, limited multi-payer private insurance market (two carriers do business in Vermont's merged individual and small group market and only three sell in the large group market).

Vermont's proposal has two strengths, in addition to the strong foundation described above:

1. An explicit commitment from the Governor, backed by Vermont law passed in 2011, to constrain health care cost growth to a level that is affordable, relative to the state's overall economic growth, and to move away from volume-based provider payment;
2. A mature regulatory system under the authority of the Green Mountain Care Board (GMCB). The GMCB was created in 2011 as an independent, full-time, professional board that reviews and approves health insurer rates, annual hospital budgets and major capital expenditures by health care providers.
    - The GMCB also is the overseer of payments to ACOs and other key aspects of the commercial and Medicaid shared savings programs, including calculation of shared savings, risk adjustment, risk corridors and quality measurement.
    - The GMCB has broad (as yet unused) statutory authority to implement broader provider rate-setting, beyond the hospital sector.
    - The GMCB set a limit of 3 percent growth in hospital budgets for current year. Actual budgets approved by the board are slated to grow at 2.7 percent, year-over-year. These budgets include not only expenditures for hospital services, but also the majority of physician payments, as a high and growing percentage of physicians in the state are employed by hospitals.
    - In setting the limit on hospital budget growth, the board looked to indicators of economic growth in the state and made clear that their goal was to link health care cost growth and economic growth over the long term.

Building on these strengths, Vermont proposes a system of health care provider payment oversight with three central elements:

1. Continued regulatory oversight of the parameters of ACO/payer relationships, including payment levels, rates of increase in payment year-to-year and quality measurement;
2. Oversight of insurer payments to non-ACO providers, and a requirement for a fair, transparent and standardized fee schedule for those providers;
3. Continued oversight of health insurance premiums and premium growth.

The state is currently assessing the interface between these regulatory schemes and regulation of hospital budgets (which has existed since the 1980s), and the extent to which the hospital budget review process is necessary, and/or whether it should be redesigned, under a fully-developed system of broader provider payment regulation.

With these three elements in place (at a minimum), Vermont would propose that we commit to:

- Control of the rate of growth in total health care costs at a rate that is consistent with growth in the economy;
- Deliberate movement further away from fee-for-service provider payment by transitioning ACO payments from shared savings to a model involving two sided risk and increased provider accountability for total costs and quality;
- Obtaining a commitment from all commercial payers in the individual and small group market, plus Medicaid, to participate in the models of payment to both ACOs and non-ACO providers;
- Adoption by the GMCB of parameters for all-payer payments to ACOs;
- Adoption by the GMCB of rules for all-payer payments to providers outside of ACOs;
- Continued payments by Medicaid and commercial payers to Blueprint Advanced Primary Care Medical Homes and Community Health Teams.

We would be asking CMS for:

- Approval for Medicare participation in the Vermont provider payment model – for both ACO payments and non-ACO payments;
- Necessary approval from CMS for Medicaid participation in this model;
- Continued participation in payments to Advanced Primary Care Medical Homes and Community Health Teams.

Medicare participation in this model is critical, as will make our policies universal, consistent and substantially more efficient and effective. This approach has the potential to reduce administrative costs for payers, providers and government and maximize positive delivery system change through consistent payment rules and monitoring. The end result will be lower costs for all payers.

Further details of the ACO and non-ACO provider payment models will be developed by GMCB board members, staff and contractors over the next 12 months, with input from the Governor's Office, key stakeholders, the Agency of Human Services and the Department of Vermont Health Access. Elements of the proposal that require further development include:

- The specific methodology for the ACO payment system;
- The specific methodology for the non-ACO payment system;
- Whether and how to incorporate in payment models services beyond the normal scope of ACOs, including long term services and supports;
- The extent to which per capita payments or payment levels for specific services from payers to providers will vary across payers;
- The extent to which, across all payers, per capita payments or payment levels for specific services will vary by provider;
- The specific levels of the limits to be applied to health care cost growth;
- The specific methodology for attributing Vermont's population to providers;
- Membership rules and roles for participating providers;
- Appropriate consumer protections in a statewide, all-payer system of health care cost and quality regulation.

Vermont is a relatively low-cost state for the Medicare program, but per-capita Medicare growth rates exceeded the national average in recent years (see data below). We believe this program would offer CMS a compelling example of how a low-cost, rural state, through a deliberate commitment to low rates of cost growth, could reduce expected Medicare expenditures, reduce pressure on Medicaid and private premiums and improve outcomes for all residents of the state.

VT total (all payers) per capita health care costs, 2009	$7,635 (above national average)
VT total rate of growth 1991–2009	6.7% (above national average)
National per capita all payers, 2009	$6,815
National all-payer trend, 1991–2009	5.3%
VT Medicare per capita	$8,719 (below national average)
VT Medicare rate of growth 1991–2009	6.8% (above national average)
National Medicare per capita, 2009	$10,365
National Medicare rate of growth, 1991–2009	6.3%

Appendix E-2: Affordable Care Act Waiver Background

Before Vermont can fully implement Green Mountain Care, it needs the federal government to waive certain parts of the Affordable Care Act. The Affordable Care Act is a federal law that requires states to have Health Benefit Exchanges offering health insurance plans[1] and administering federal subsidies to individuals to make the plans more affordable.[2] Individuals pay a penalty if they do not have health care coverage.[3] Large employers pay a penalty if they do not offer affordable and adequate health care coverage.[4] Starting in 2017, the federal government can waive a state's obligation to any or all of the above provisions and allow the state to implement its own innovative health care coverage programs as long as its program maintains the following parameters:

- Coverage of the same amount or more people than under the ACA[5]
    - Green Mountain Care will cover more people than the ACA because it will cover all Vermont residents.
- Coverage that is as comprehensive or more comprehensive than coverage under the ACA[6]
    - Green Mountain Care will offer the same covered services as ACA plans.
- Coverage that is as affordable or more affordable than coverage under the ACA[7]
    - At a minimum, Green Mountain Care will apply the ACA's premium tax credit and cost-sharing reduction sliding scale to a gold-level plan.
- A health care system that is deficit neutral for the federal government[8]
    - Green Mountain Care will maintain reciprocal deficit neutrality for the federal government and the State of Vermont.

To reach universal coverage, Vermont would request waivers of the Health Benefits Exchange, the individual mandate, and the large employer penalty through Section 1332 of the Affordable Care Act.

The ACA expanded health care coverage, but was never designed to provide universal coverage. Green Mountain Care will achieve universal coverage by having residency as its only eligibility requirement and eliminating barriers such as premium due dates and enrollment deadlines. In order to achieve this, Vermont would request a waiver from the Affordable Care Act's requirements around:

- Health Benefits Exchange
- Individual mandate
- Large employer penalty

[1] ACA, Subtitle D, Parts I & II.
[2] I.R.C. § 36B.
[3] I.R.C. § 5000A.
[4] I.R.C. § 4980.
[5] ACA, Section 1332(b)(1)(C); 42 U.S.C. 18052(b)(1)(C).
[6] ACA, Section 1332(b)(1)(A); 42 U.S.C. 18052(b)(1)(A).
[7] ACA, Section 1332(b)(1)(B); 42 U.S.C. 18052(b)(1)(B).
[8] ACA, Section 1332(b)(1)(D); 42 U.S.C. 18052(b)(1)(D).

Waiver of Health Benefits Exchange

The Affordable Care Act requires each state to have at least one Health Benefit Exchange through which individuals and small businesses can purchase qualified health plans from insurance companies or can access public coverage through Medicaid. Vermont, in compliance with the Affordable Care Act, started operating its Health Benefits Exchange, called Vermont Health Connect, on October 1, 2014. Vermont, like all other state-based exchanges, has had operational challenges in its start-up phase, but continues to work towards full and better operations for both individuals and small businesses.

Although Vermont's Health Benefit Exchange, once fully operational, will afford greater access to health care coverage and financial help to make coverage more affordable, it does not prevent loss of coverage. In a 2012 statewide survey, Vermonters most commonly cited the following reasons for losing coverage: affordability, job loss, waiting periods for coverage, eligibility issues, and problems with paperwork or late payments.[9] Many of these barriers continue to exist for Vermonters despite implementation of a Health Benefits Exchange. In order to provide coverage to all Vermonters, Vermont must move away from a complicated system of insurance-based health care and public coverage to a system based solely on residency. Accordingly, Vermont would ask CCIIO to waive the Affordable Care Act's requirement to have a state or federal Health Benefit Exchange.[10]

Waiver of Large Employer Penalty

The Affordable Care Act furthers the traditional employer-sponsored health insurance model by instituting a penalty on large employers who do not offer health care coverage or who offer health care coverage that is unaffordable or inadequate. In Vermont, the traditional employer-based health insurance model has not led to universal coverage, with job loss being the most cited reason for loss of coverage.[11] Although health insurance is available under the Health Benefit Exchange, individuals may experience gaps in coverage due to a misalignment of the qualified health plan start date or failure to sign up within the special enrollment period. As a result, the current employer-based health insurance model will not lead to universal coverage in Vermont.

By basing eligibility for Green Mountain Care solely on residency rather than the complicated mix of eligibility criteria based on income and employment, Vermont would ensure that its entire population receives continuous coverage. Because all Vermont residents would have Green Mountain Care, an employer penalty will be superfluous. Accordingly, Vermont would request that the Affordable Care Act's large employer penalty be waived.

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[9] Vermont Department of Financial Regulation Insurance Division, 2012 Vermont Household Health Insurance Survey, Pg. 77, http://www.dfr.vermont.gov/sites/default/files/VHHIS_2012_Final_Report.pdf.

[10] Parts I & II of subtitle D in Title I of the Affordable Care Act.

[11] Vermont Department of Financial Regulation Insurance Division, 2012 Vermont Household Health Insurance Survey, Pg. 77, http://www.dfr.vermont.gov/sites/default/files/VHHIS_2012_Final_Report.pdf.

Waiver of Individual Mandate

As with the large employer penalty provision, Vermont would also request that the individual mandate be waived. All residents of Vermont would have Green Mountain Care, so all residents of Vermont will meet the Affordable Care Act's requirement of minimum essential coverage, making the individual penalty unnecessary.

The Health Benefits Exchange, large employer penalty, and individual mandate requirements under the Affordable Care Act bind individuals and small businesses to insurance-based coverage. Waiving these provisions would provide Vermont with the flexibility to achieve universal health care coverage through providing Green Mountain Care to all residents.

To achieve comprehensive coverage, Vermont would request a waiver of the qualified health insurance plan.

Vermont would ask CCIIO to waive the Affordable Care Act's requirements for qualified health benefits plans. The Affordable Care Act requires that qualified health insurance plans be offered at the bronze, silver, gold, and platinum levels.[12] This leaves some individuals at the silver or bronze level with higher out of pocket costs. Green Mountain Care would provide individuals with one plan that compares to a gold level or better, ensuring greater coverage for all Vermonters than is provided today.

In addition to better out of pocket coverage, Green Mountain Care would provide the same or more covered services than what is offered today. Green Mountain Care would have all of the Essential Health Benefits under the Affordable Care Act.[13] Additionally, Act 48 requires Vermont to design Green Mountain Care to address chronic care in the most effective way possible. Other benefits such as adult dental or adult vision must also be considered in designing Green Mountain Care's benefit plan. Vermonters who qualify for Medicaid coverage will continue to receive coverage through Green Mountain Care, including Medicaid benefits. Vermont would seek to integrate its current Section 1115 Global Commitment to Health waiver with the new permissions through Section 1332 of the ACA to ensure that Green Mountain Care operates as a seamless, single system.

Waiving the Affordable Care Act's requirements around qualified health insurance plans would allow Green Mountain Care to provide the same or more covered services as well as greater coverage of out of pocket costs than many current qualified health insurance plans.

[12] Sec. 1332(c) of the Affordable Care Act.

[13] Sec. 1332(b) of the Affordable Care Act. Vermont's Essential Health Benefits are listed at https://www.cms.gov/CCIIO/Resources/Data-Resources/Downloads/vermont-ehb-benchmark-plan.pdf.

To achieve greater affordability, Vermont would request a waiver of the premium tax credit and cost sharing reductions.

In order to increase access to private insurance plans, the Affordable Care Act provides premium tax credits and cost-sharing reductions to eligible individuals.[14] The cost sharing reductions and the advance payment of the premium tax credits are paid directly to the insurers. The premium tax credits and the cost sharing reductions are not available to individuals with other sources of affordable, adequate coverage, such as employer-sponsored insurance or Medicare.

Before the Affordable Care Act was passed, Vermont had affordable health care programs for individuals up to 300% FPL. These programs had premiums and coverage that were more affordable to many Vermonters than subsidized insurance under the ACA. Vermont is trying to maintain the affordability standard it had before the ACA,[15] but despite these efforts, one of the most-cited barriers to individuals maintaining health care coverage is cost.[16] Green Mountain Care would eliminate cost as a barrier by breaking the direct link between monthly payment and health care coverage. The coverage under Green Mountain Care would be publicly financed in an income-sensitized manner that maintains or improves upon Vermont's current subsidized structure for plans at an 80% actuarial value (AV) or greater, which equates to a gold level plan, ensuring that all Vermonters contribute in a way that maintains or surpasses the ACA's affordability standards.

To achieve public financing of Green Mountain Care, Vermont would request that CCIIO waive the Affordable Care Act's premium tax credit and cost sharing reductions as they are currently administered. Instead of going to health insurance companies, these funds will go directly to the state for purposes of equitably financing and administering Green Mountain Care.

ACA Waiver Federal Funding Calculation

Under the ACA waiver, Vermont may receive the premium tax credit, cost sharing reductions, and small business tax credit payments that would have been paid had the ACA's requirement to have an Exchange selling health insurance not been waived.[17]

Premium Tax Credits and Cost Sharing Reductions

Currently, the federal government provides advanced payment of the premium tax credit and cost sharing reduction payments directly to insurers on behalf of eligible individuals. Under the ACA waiver, Vermont would waive this requirement because residents would move from paying premiums for insurance plans through Vermont Health Connect to having publicly-

[14] Parts I of subtitle E in Title I of the Affordable Care Act; Section 36B of the Internal Revenue Code of 1986.
[15] Vermont currently reduces premiums through subsidies that reduce the federal advanced premium tax credit's applicable percentage by 1.5% for Vermonters up to 300% FPL and subsidizes cost sharing reductions from 73% AV to 77% AV for Vermonters from 200-250% FPL and from 70% to 73% AV for Vermonters from 250-300% FPL.
[16] Vermont Department of Financial Regulation Insurance Division, 2012 Vermont Household Health Insurance Survey, Pg. 77, http://www.dfr.vermont.gov/sites/default/files/VHHIS_2012_Final_Report.pdf.
[17] ACA § 1332(a)(3); 42 U.S.C. § 18052(a)(3).

financed health care coverage under Green Mountain Care.[18] Under the ACA waiver, the federal government would pay Vermont the aggregate amount of the premium tax credits and cost sharing reduction payments that would have otherwise been paid under the ACA.[19]

The ACA does not define how the premium tax credits and cost sharing reductions payments will be calculated. After analyzing various options, Vermont proposed that the federal government calculate the aggregate amount of the premium tax credits and cost sharing reduction payments by using a modified formula that the federal government is already using with the Basic Health Program (BHP).

With the BHP, the ACA gives states the flexibility to establish health coverage for low-income individuals not eligible for Medicaid.[20] Like the ACA waiver, a state's BHP must maintain the affordability and coverage requirements set out in the ACA.[21] In return, the federal government will transfer to the state 95% of the amount in premium tax credit and cost sharing reduction payments that would have otherwise been available under the ACA. The ACA and its attendant rules set out several requirements around these calculations, including the fact that the calculation must be made on a per enrollee basis where age, income, coverage tier, geographic area, and health status are taken into account.[22]

Because the principles behind the BHP program and the ACA waiver are similar, Vermont proposed using the BHP formulas modified by Vermont-specific factors to calculate the federal share for the premium tax credits and cost sharing reduction payments under the ACA waiver. For instance, Vermont uses community rating, so any factors based on age or tobacco rating would be omitted from the formula. Vermont is also comprised of one geographic area for insurance rates, so that factor may be omitted as well. Also, the ACA requires BHP funding to be 95% of the total estimated funding, whereas the ACA waiver has no such factor. After taking these adjustments into account, Vermont created formulas to calculate the premium tax credit and cost sharing payment amounts.

Premium Tax Credit Formula

Vermont created the following formula to calculate the premium tax credit:

$$PTC_{c,h,i} = [ARP_c - (\Sigma_j I_{h,i,j} \times PTCF_{h,i,j})/n] \times IRF \times E_{c,h,i}$$

$PTC_{c,h,i}$= Premium tax credit portion of ACA waiver payment rate
c= Coverage status (self-only or applicable category of family coverage)
h= Household size
i= Income range (as percentage of FPL)

[18] ACA § 1332(a)(2); 42 U.S.C. § 18052(a)(2).
[19] ACA § 1332(a)(3); 42 U.S.C. § 18052(a)(3).
[20] ACA § 1331; 42 U.S.C. § 18051.
[21] ACA § 1331(a)(2); 42 U.S.C. § 18051(a)(2) (with the exception of the cost sharing reduction standard where individuals from 150% FPL to 200% FPL may be covered by an 80% AV plan rather than an 87% AV plan).
[22] ACA § 1331(d)(3); 42 U.S.C. § 18051(d)(3); 79 FR 14111 (March 12, 2014).

ARP_c= Adjusted reference premium
$I_{h,i,j}$= Income (in dollars per month) at each 1 percentage-point increment of FPL
j= j^{th} percentage-point increment FPL
n= Number of income increments used to calculate the mean PTC
$PTCF_{h,i,j}$= Premium Tax Credit Formula percentage
IRF= Income reconciliation factor
$E_{c,h,I}$ = Number of individuals enrolled

Premium tax credit portion of ACA waiver payment rate
Like the BHP, the premium tax credit estimate would be calculated by rate cells in which coverage status, such as single, couple, or family, is taken into account along with household size and income range. Vermont would use income ranges up to 400% FPL because income eligibility for the premium tax credit goes up to 400% FPL. Within each rate cell, the formula would estimate the average premium tax credit, which is the difference between the second lowest cost silver plan premium available and the amount of income that a household would be required to pay if the members of the household were enrolled in the second lowest cost silver plan in Vermont Health Connect.

Adjusted reference premium
Vermont would take the current second lowest cost silver plan premium and trend it out to 2017. For its trend going forward, Vermont proposes using the regional average change in the second lowest cost silver plan premium or the National Health Expenditures projection if the regional trend has large variations that would normally not apply to Vermont. Vermont does not use age rating, but proposes applying an age adjustment to the reference premium in order to reflect Vermont's rapidly aging population.[23] Without an age adjustment, Vermont's reference premium would be based on the health of a population that no longer exists. Vermont also suggests employing a population health factor to the reference premium similar to the BHP's population health factor. The BHP population health factor takes into account that the cost of providing care to individuals with income below 200% FPL is often greater than other individuals with health insurance.[24] Similarly, to the extent that Vermont's large insurance market has a different rate than the small and individual market, that difference would be reflected in the adjusted reference premium.

Calculation of the average premium tax credit
Once the adjusted reference premium is determined, the average premium tax credit for the rate cell would be calculated by subtracting from the adjusted reference premium the average amount that would have been paid for a second lowest cost silver plan after applying the premium tax credit.

[23] Vermont was one of three states with the largest increases in median age between 2000 and 2010. 2010 Census Briefs, *Age and Sex Composition: 2010,* May 2011, http://www.census.gov/prod/cen2010/briefs/c2010br-03.pdf.

[24] The BHP population health factor for 2015 and 2016 was 1.0. 79 FR 63363 (Oct. 23, 2014).

Income reconciliation factor
Next, Vermont suggests multiplying the average premium tax credit calculation with an income reconciliation factor. Like the BHP, Vermont proposes that individuals do not have to reconcile their premium tax credits at the end of the year. Accordingly, Vermont applies an income reconciliation factor based on previous experience with reconciliation of tax credits in order to take reconciliation into account without Vermonters having to do the calculation on their tax forms.

Number of individuals enrolled
For the number of individuals enrolled, Vermont estimated all of the individuals that would have been eligible for the premium tax credit under the ACA, absent the waiver.

Vermont Premium Subsidy
Under Act 50 of 2013 and in its 1115 Global Commitment waiver, Vermont further subsidizes the premium tax credits by decreasing the percentage of income applied to the second lowest silver plan by 1.5%. Vermont received federal match for this program and would request retention of the match going forward through its Section 1115 waiver renewal. The request would be based on the total number of eligible Vermonters in Green Mountain Care who are ineligible for Medicaid, Medicare, TRICARE, federal employees and a small number of individuals estimated to take up employer sponsored insurance, whose incomes are between 138-300% of federal poverty.

Cost sharing reduction formula
Vermont created the following formula to calculate the cost sharing reduction payments:

$$CSR_{c,h,i} = ARP_c \times FRAC / AV \times IUF_{h,i} \times \Delta AV_{h,i} \times E_{c,h,I}$$

$CSR_{c,h,i}$= Cost-sharing reduction subsidy portion of BHP payment rate
c= Coverage status (self-only or applicable category of family coverage) obtained through BHP
h= Household size
i= Income range (as percentage of FPL)
ARP_c= Adjusted reference premium
FRAC= Factor removing administrative costs
AV= Actuarial value of plan (as percentage of allowed benefits covered by the applicable QHP without a cost-sharing reduction subsidy)
$IUF_{h,i}$= Induced utilization factor
$\Delta AV_{h,i}$= Change in actuarial value (as percentage of allowed benefits)

Cost sharing reduction portion of ACA waiver payment rate
As with the BHP and the premium tax credit calculations, the cost sharing reduction estimate would be calculated by rate cells in which coverage status, such as single, couple, or family, is taken into account along with household size and income range. Vermont uses income ranges up to 250% FPL because income eligibility for the cost sharing reduction goes up to 250% FPL. Within each rate cell, the formula estimated the average advance cost-sharing reductions

payment that would have been provided to individuals had they enrolled through Vermont Health Connect.

Adjusted reference premium
Vermont would take the current second lowest cost silver plan premium and trend it out to 2017. For its trend going forward, Vermont used the regional average change in the second lowest cost silver plan premium or the National Health Expenditures projection if the regional trend has large variations that would normally not apply to Vermont. As with the premium tax credit calculation, Vermont would apply an age adjustment and a population health factor to ensure an accurate reference premium in the future.

Factor removing administrative costs
The BHP formula includes a factor removing administrative costs (FRAC) to ensure that the federal government is funding essential health benefits rather than taxes and other administrative costs. Under the EHB rules, the suggested FRAC is 80% because that is the factor currently used to calculate cost sharing reduction payments. Vermont would use 88.3% because that number reflected the administrative costs of the largest insurer in Vermont and Vermont Medicaid, and to the extent that Green Mountain Care would reduce administrative costs, that reduction should be reflected in the cost sharing reduction calculation.

Actuarial value of plan, induced utilization factor, and change in actuarial value
As with the BHP formula, the actuarial value of the plan is 70% AV because the reference premium is the second lowest cost silver plan.

Vermont would also incorporate the BHP's induced utilization factor, which is also used to calculate the cost sharing reductions. The induced utilization factor takes into account that individuals with lower out of pocket costs are more likely to use health care services. The induced utilization factor used by the federal government is 1.12 for individuals up to 200% FPL and 1.00 for individuals up to 250% FPL.

The change in actuarial value is the difference between the second lowest costs silver plan's AV of 70% and the subsidized cost sharing actuarial values of 94% AV for those up to 150% FPL, 87% AV for those up to 200% FPL and 73% AV for those up to 250% FPL.

Number of individuals enrolled
For the number of individuals enrolled, Vermont estimated all of the individuals who would have been eligible for cost sharing reductions under the ACA, absent the waiver.

<u>Vermont Cost Sharing Subsidy</u>
Although Vermont further subsidizes the federal government's cost sharing reductions up to 300% FPL, the funding is purely state funds, so there is no need to calculate a federal contribution.

The ACA Waiver Application

In order to comply with federal law,[25] Vermont's ACA waiver application would include actuarial analyses and actuarial certifications to support Vermont's estimates that Green Mountain Care would cover the same or more people as the ACA with health care coverage that is equally or more comprehensive and affordable than ACA coverage. Vermont would also submit:

- A comprehensive description of the Vermont legislation and program to implement waiver
- A copy of the enacted state legislation that provides the state with authority to implement the proposed waiver
- A list of the provisions the state is seeking to waive
- Actuarial analysis and actuarial certifications showing that Vermont has met:
    - Comprehensive coverage requirement
    - Affordability requirement
    - Scope of coverage requirement
- Economic analyses showing that Vermont has met:
    - Comprehensive coverage requirement
    - Affordability requirement
    - Scope of coverage requirement
    - Federal deficit requirement, including:
        - 10 year budget plan that is deficit neutral, including administrative costs
        - Analysis regarding the estimated impact of the waiver on health insurance coverage in Vermont
- Data and assumptions on comprehensive coverage requirement, affordability requirement, scope of coverage requirement and federal deficit requirement, including
    - Information on the age, income, health expenses and current health insurance status of the relevant population; the number of employers by number of employees and whether the employer offers insurance; cross- tabulations of these variables; and an explanation of data sources and quality;
    - An explanation of the key assumptions used to develop the estimates of the effect of the waiver on coverage and the federal budget, such as individual and employer participation rates, behavioral changes, premium and price effects, and other relevant factors.
- Implementation timeline
- Whether the waiver increases or decreases administrative burden on individuals, insurers and employers
- Explanation of how the waiver will affect the implementation of the provisions of the ACA that are not waived
- Explanation of how the waiver will affect residents seeking care outside of Vermont

[25] 31 CFR Part 33; 45 CFR Part 155.

- Explanation of how Vermont will provide federal agencies with the necessary information to administer waiver at federal level
- Explanation of how the proposal will address individual, employer, insurer, or provider compliance, waste, fraud, and abuse
- Reporting targets: quarterly, annual, and cumulative targets for:
    - Comprehensive coverage requirement
    - Affordability requirement
    - Scope of coverage requirement
    - Federal deficit requirement
- Written evidence that Vermont held at least two public hearings
- Any other information consistent with guidance provided by the Secretary of Health and Human Services (HHS) or the Secretary of the Treasury.

Public Notice and Timelines for the ACA Waiver Process

Under federal law, Vermont must ensure appropriate public comment on its ACA waiver application and follow the following timelines:

- Prior to submitting the application, the state would give public notice and provide a public comment period, including public hearings. The public notice would include:
    - A comprehensive description of the application for the waiver
    - Information on where copies of the application for the waiver are available for public review and comment
    - Information on where and how public comments may be submitted
    - The location, date, and time of state public hearings
- Vermont would then submit the application to HHS
- 45 days after submission, the HHS Secretary and Treasury Secretary would complete preliminary review of application
    - Federal agencies would then provide public notice of completed application
- No later than 180 days after preliminary review complete, HHS would provide a decision-making period and follow federal public notice process

Submissions to HHS

Vermont submitted a white paper to CCIIO and to the general assembly on November 1, 2014. This paper can be found here:
http://hcr.vermont.gov/sites/hcr/files/2014/1332%20Concept%20Paper%20FINAL.pdf

Meetings with Federal Partners

Collaboration with federal partners is critical for Vermont to implement a universal health care program. Vermont has been working closely with the federal government since the passage of Act 48 to ensure the state is in position to be granted a waiver at the earliest possible opportunity as required by Act 48.

Vermont was expected to be the first state to apply for the waiver and thus our collaboration with the U.S. Department of Health and Human Services (HHS) has included contributing to the

development of the waiver application process itself, as well as discussing Vermont's specific proposals for meeting the waiver requirements, including evidence and analysis showing that Vermont can meet those requirements.

Vermont's health care reform team has been engaging in ongoing conversations with multiple federal agencies and offices to further our analysis of the coverage, tax, and subsidy implications of our waiver proposal and to strengthen our application. The cross-cutting policy issues intrinsic in Vermont's waiver proposals requires collaboration with the White House Executive Offices, the Department of Health and Human Services (HHS), which has regulatory authority over the consolidated waiver process, and about a dozen other offices and departments including Centers for Medicaid and Medicare Services (CMS), Center for Consumer Information and Insurance Oversight (CCIIO), Center for Medicaid and CHIP Services (CMCS), Center for Medicare and Medicaid Innovation (CMMI), CMS Office of the Actuary, the U.S. Department of Labor, U.S. Treasury, and the Office of Management and Budget.

Meetings with federal partners began in earnest in January of 2014. Vermont's Director of Health Care Reform, Deputy Director, and Special Counsel began regular teleconferences with CCIIO staff to discuss the waiver requirements and Vermont's proposals. Further analysis of the components of Vermont's proposals led to a meeting in April with Assistant Secretary Phyllis C. Borzi of the U.S. Department of Labor's Employee Benefits Security Administration (EBSA). In June Director Lunge traveled to Washington, D.C. to meet with the White House office of health reform policy director Jeanne Lambrew, who is Deputy Assistant to the President for Health Policy, and Christen Linke-Young, Senior Policy Advisor for Health. Director Lunge and Deputy Director Michael Costa also met with CMS staff in Bethesda in July.

The meetings in the first half of the year laid the groundwork for Governor Shumlin and his health policy advisors to travel to D.C. on September 24, 2014 to meet with HHS Secretary Sylvia Mathews Burwell, Assistant Secretary of the Treasury Mark Mazur, and the head of the health division for the Office of Budget and Management, Julian Harris. The objective of those meetings was to facilitate inter-agency collaboration from the top down and to establish the necessary lines of communication for Vermont to accomplish its goal of submitting a successful waiver application.

Following the Governor's meetings in September, Vermont's health care reform team organized a series of three interagency teleconferences/webinars. The teleconferences were held on October 24th, October 31st, and November 6th. Over 60 staffers from about a dozen offices, including the White House and the Vermont congressional delegation, were invited to participate in the calls. 20-30 people were on the line for each call. Vermont's health care reform team presented the information and our consultants from Wakely and UMass were on the line to provide back-up support.

During the October 24th teleconference Vermont presented an overview of Green Mountain Care for those who were new to Vermont's plan. We also presented proposed federal premium tax credit and cost-sharing reduction pass-through funding formulas. On October 31st Vermont

presented background information on the coverage and financing plan for Green Mountain Care including the approach to eligibility, benefit design, financing, operations, and delivery system reform. On November 6th Vermont walked through the assumptions the state was proposing to meet the remaining criteria for the ACA waiver. These include how we propose to show that we will cover at least as many people as under the ACA, with benefits that are at least as generous without increasing costs of coverage.

The federal staffers raised detailed questions during the multi-agency calls. The health care reform team engaged smaller groups from individual offices to drill down on issues within their areas of expertise. Multiple meetings were held with Treasury on tax implications for the financing plan. November 24th we held a call with Treasury, OMB, CMS and the Office of the Actuary to take a closer look at the issue of pass-through funding. November 25th we held a call with CMCS for a deeper dive on the interactions between Medicaid and Vermont's ACA waiver.

Governor Shumlin spoke with with HHS Secretary Burwell again on December 15, 2014.

In conclusion, we found that our partners in the federal agencies were excited about Vermont's plans and eager to help however they can. Staffers expressed enthusiasm for Vermont's strides toward obtaining the ACA waiver, which was included in the Affordable Care Act for the express purpose of allowing states to come up with innovative ways to cover more of their population and provide better benefits. Participating in Vermont's process toward applying for the waiver gave those federal agencies a first look at what may come to life under the ACA waiver provision.

The Table below provides a summary of meetings with the federal government.

Table E-2.1 Summary of Meetings with Vermont's Health Care Reform Team and Federal Partners

January 17, 2014	Initial teleconference with CCIIO staff responsible for the 1332 waiver process. Continued meeting most months through 2014.
April 7, 2014	Teleconference with Assistant Secretary Phyllis Borzi of U.S. DOL EBSA.
June 19, 2014	White House meeting with Deputy Director Jeanne Lambrew.
July 28-30, 2014	Director Lunge and Deputy Director Costa in D.C., met with CMS and the congressional delegation.
September 4, 2014	Teleconference with HHS staff to prep for Gov. Shumlin's meeting with Secretary Burwell.
September 24, 2014	Governor Shumlin in D.C. to meet with HHS Secretary Burwell, Treasury Assistant Secretary Mazur, and Julian Harris of OMB.

October 24, 2014	First interagency teleconference/webinar on Green Mountain Care and proposed federal PTC and CSR pass-through funding formulas.
October 31, 2014	Second interagency teleconference/webinar on background for the GMC coverage and financing plan.
October 27, 2014	Teleconference with Treasury.
November 6, 2014	Third interagency teleconference/webinar on the 1332 waiver criteria.
November 24, 2014	Teleconference on pass-through funding with OMB, Treasury, CMS, and OACT.
November 25, 2014	CMCS deep-dive on Vermont 1332 waiver and Medicaid interactions.
December 15, 2014	Conference call with Governor Shumlin and HHS Secretary Burwell.
Ongoing	Monthly calls with the Vermont congressional delegation.
Ongoing	Monthly calls with CCIIO on the 1332 waiver process.
Ongoing	Follow-up calls with all federal partners.

Appendix F-1: Medicaid

Federal Financial Participation in Medicaid

The federal government pays each state a certain share of its Medicaid program. The share that the federal government pays, called the Federal Matching Assistance Percentage (FMAP), is determined annually pursuant to a statutory formula based on each state's per capita income. In calendar year 2015, the base FMAP for Vermont is 56.18%.[1] Vermont's FMAP rate has declined annually since 2009, and we estimate that it will continue to do so in future years. Likewise, the federal government pays a share of the Children's Health Insurance Program (CHIP). This amount is higher than the FMAP rate used for the Medicaid population, and is called the Enhanced FMAP rate. In calendar year 2015, the enhanced FMAP rate for Vermont's CHIP program is 74.95%.[2]

Furthermore, the ACA significantly expanded Medicaid, making individuals with income up to 138% of the federal poverty level (FPL) eligible for Medicaid. For most states, this will be a substantial expansion in their Medicaid population. In calendar year 2015, the enhanced FMAP rate for Vermont's "expansion population" is 82.47%. The federal government will pay a higher FMAP for this expansion population, leveling off at 90% in 2019.

Vermont, under its 1115 Demonstration Waiver, had previously expanded its Medicaid eligibility to income levels greater than the ACA. For states like Vermont that had previously expanded Medicaid eligibility, the federal government will phase-in a higher FMAP rate for some populations in their state.

The FMAPs used in this analysis are contained in Appendix C-2 with the other microsimulation analysis assumptions. Note that the base and enhanced FMAP rates are subject to change annually. For the purposes of this analysis, we used the 2015 rates as a starting point and then used the economic model to estimate future FMAP rates.

Impacts on Existing Medicaid Funding Sources

Lost or reduced state Medicaid revenue add dollars to the required public financing. Lost Medicaid dollars would be replaced by fungible dollars within the Green Mountain Care Fund for the purposes of drawing down federal Medicaid match, as we would propose that the Green Mountain Care Fund absorb the State Health Care Resources Fund. The 2013 report estimated that the State would be able to apply $637 million in existing State Medicaid revenue to GMC in 2017. We estimate the actual number to be $341 million, a figure that increases the total amount to be publicly financed in 2017 by $296 million.

[1] See JFO website: www.leg.state.vt.us/jfo/healthcare/
[2] *Ibid.*

The reduction in Medicaid revenue from the original projection is due to two factors. First, the State has not increased Medicaid rates annually as assumed in the 2013 report due to economic headwinds and budget pressures. Second, some revenue sources used to support Medicaid today would not be viable under GMC. Specifically, GMC would feature repeal of provider taxes, the Claims Tax, and Employer Assessment once the State implemented GMC. Medicaid premiums would no longer be charged. Also, tobacco settlement funds are set to decline prior to 2017.

Table F-1.1 sets forth current state revenue streams that support Medicaid in FY 15 post rescission and estimate the availability of these revenue sources for Green Mountain Care for 2017 through 2021. Table F-1.2 sets forth the current state revenues that support the State Health Care Resources Fund in FY 15 post rescission and estimate the availability of these revenue sources for Green Mountain Care from 2017 through 2021.

Medicaid revenue estimates are typically done on a state fiscal year (SFY) basis. They are set forth by SFY here to ensure continuity with existing estimates. GMC would operate on a calendar year basis. Accordingly, state Medicaid revenue estimates would need to be converted to a calendar year basis once an implementation year is determined.

Table F-1.1: State Medicaid Funding Sources FY 2015 as Passed through 2021 under GMC[3]

State Medicaid Funding	FY 15 Post Rescission	FY 16	FY 17	FY 18	FY 19	FY 20	FY 21
General Fund	185,233,145	190,790,139	196,513,844	202,409,259	208,481,537	214,735,983	221,178,062
Tobacco Funds	33,031,032	28,547,443	27,310,469	16,310,469	16,310,469	16,310,469	16,310,469
State Health Care Resources Fund	268,592,899	268,984,365	96,173,000	99,173,000	101,173,000	103,173,000	105,173,000
IDT	40,000	40,000	40,000	40,000	40,000	40,000	40,000
Insurance Fund	883,847	883,847	883,847	883,847	883,847	883,847	883,847
HIT	2,080,754	3,000,000	0	0	0	0	0
Agriculture Mosquito Control	56,272	56,272	56,272	56,272	56,272	56,272	56,272
Success Beyond Six	21,037,211	21,743,125	22,300,000	22,300,000	22,300,000	22,300,000	22,300,000
Next Generation	300,000	300,000	300,000	300,000	300,000	300,000	300,000
Exchange Funding	-5,340,670	-8,400,000	0	0	0	0	0
Carry Forward	50,000	0	0	0	0	0	0
Fund Balance used	4,074,531	0	0	0	0	0	0
TOTAL STATE MEDICAID REVENUE	510,039,021	505,945,191	343,577,432	341,472,847	349,545,125	357,799,571	366,241,650

Source: Vermont Dept. of Finance and Management Prior to Completion of the FY 2016 Budget Recommendation

Assumptions and Notes

We assume three percent annual growth in General Fund support for Medicaid. Tobacco settlement funds are projected to decrease $11 million in SFY 18. State Health Care Resource Fund revenue would be diminished substantially due to repeal of provider taxes,

[3] This table includes revenue sources for Managed Care Entity Investments, as well as Medicaid coverage.

claims taxes, and various premiums. The Medicaid allocable cost of the Exchange is included in the general GMC Medicaid cost estimates. The non-Medicaid allocable Exchange cost is included in the non-payer operations cost estimate.

Table F-1.2: State Health Care Resources Fund FY 15 as Passed through 2021 under GMC

State Health Care Resources Fund	FY 15	FY 16	FY 17	FY 18	FY 19	FY 20	FY 21
Cig Tax[4]	64,900,000	61,900,000	76,000,000	79,000,000	81,000,000	83,000,000	85,000,000
Tobacco Products	7,700,000	6,800,000	6,800,000	6,800,000	6,800,000	6,800,000	6,800,000
Claims Assessment	14,000,000	14,280,000	0	0	0	0	0
Employer Assessment	15,738,631	16,800,000	0	0	0	0	0
GME	12,873,000	12,873,000	12,873,000	12,873,000	12,873,000	12,873,000	12,873,000
Provider Tax – Hospitals	127,639,915	131,150,013	0	0	0	0	0
Provider Tax NH	15,801,530	15,801,530	0	0	0	0	0
Provider Tax Home Health	4,233,302	4,233,302	0	0	0	0	0
Provider Tax ICF-MR	73,759	73,759	0	0	0	0	0
Pharmacy $0.10 Script	800,000	800,000	0	0	0	0	0
Premium Dr. D	50,607	50,607	0	0	0	0	0
Premiums SCHIP	623,382	623,382	0	0	0	0	0
Premiums Rx Programs	3,045,450	3,045,450	0	0	0	0	0
Recoveries	500,000	500,000	500,000	500,000	500,000	500,000	500,000
Other	13,323	53,323	0	0	0	0	0
TOTAL SHCRF REVENUE	267,992,899	268,984,365	96,173,000	99,173,000	101,173,000	103,173,000	105,173,000

[4] Further analysis of the cigarette tax estimate is needed given the large variance between the current law and GMC estimates.

Assumptions and Notes

Several SHCRF revenue streams would be repealed or substantially reduced after GMC implementation: The claims assessment would be repealed. The employer assessment would be repealed as all Vermont residents would have insurance. Current Medicaid premiums would be repealed. Provider Taxes would be repealed. Estimated cigarette tax revenue would increase due to increased wage growth and consumer spending change. GME would likely change as FMAP changes; however, any additional dollars needed to draw down federal match would likely be paid by the University of Vermont.

Appendix F-2: Detailed Information on Financing

This appendix provides additional information on issues related to the development of financing concepts and the results of the economic modeling. First, the appendix provides some additional perspective on the difficult task of transitioning businesses into GMC. Second, the appendix provides additional data on the wage effects of GMC. Third, the appendix provides additional data on changes in federal and state tax liability and collections due to GMC.

Payroll Tax Phase-In

Governor Shumlin asked for a plan that would provide a transition for small employers. Accordingly, we focused on providing a way for businesses with less than $1M in total payroll to transition into the plan over 3 years. We considered several approaches to phase in Vermont businesses, thereby providing transition relief to small businesses. The first approach was a three year phase in with a non-refundable credit.

Step Up Approach

A temporary non-refundable tax credit could be granted for the first three years of the tax, allowing businesses with smaller payrolls, those least likely to pay for insurance now, to phase into the system. The credit would work in the following way, using 8% as an example payroll tax rate.

- All businesses would determine their payroll tax liability at 8% of qualifying payroll.
- Businesses could apply the annual credit to their tax liability.
- The credit amount would be $40,000 in year 1, $25,000 in year 2, and $12,000 in year 3.
- The credit would be phased out on a dollar for dollar basis for every dollar of tax incurred beyond the credit limit.
- The credit would be reduced annually until all businesses are phased into the full 8% tax in year four, 2020.

The result of the credit system would be that in each year of the phase-in the smallest employers are excluded from the tax, others pay a reduced rate, and the largest businesses by payroll pay the full tax. The credits phase out so that the largest employers do not receive the credit and unnecessarily drive up the needed payroll tax rate. The specific payroll thresholds for each category of business (excluded from the tax, reduced tax, and pay full tax) are set forth in Table F-2.1.

Table F-2.1: Payroll Thresholds for Utilization of Phase-In Credit

Tax Year	2017	2018	2019	2020
Excluded from Tax Due to Credit	Qualifying Payroll < $500,000	Qualifying Payroll < $312,500	Qualifying Payroll < $150,000	Businesses Pay Full Tax
Reduced Tax Due to Credit	Qualifying Payroll between $500,000 and $1,000,000	Qualifying Payroll between $312,500 and $625,000	Qualifying Payroll between $150,000 and $300,000	
Pay Full Tax	Qualifying Payroll > $1,000,000	Qualifying Payroll > $625,000	Qualifying Payroll > $300,000	

Examples of credit utilization are set forth below in the Tables using examples with $1 million, $575,000, and $150,000 of qualifying payroll.

Table F-2.2: 8% Payroll Tax with Phase-In for Business with $1,000,000 in Qualifying Vermont Payroll

Tax Year	2017	2018	2019	2020
Qualifying Vermont Payroll	$1,000,000	$1,000,000	$1,000,000	$1,000,000
GMC Payroll Tax Liability @ 8%	$80,000	$80,000	$80,000	$80,000
Credit Value	$40,000	$25,000	$12,000	$0
Credit Phase Out	$40,000	$25,000	$12,000	N/A
Value of Credit	$0	$0	$0	N/A
Tax Due	$80,000	$80,000	$80,000	$80,000

In this scenario, the business would be ineligible for the credit and would pay the full tax liability in year 1.

Table F-2.3: 8% Payroll Tax with Phase-In for Business with $575,000 in Qualifying Vermont Payroll

Tax Year	2017	2018	2019	2020
Qualifying Vermont Payroll	$575,000	$575,000	$575,000	$575,000
GMC Payroll Tax Liability @ 8%	$46,000	$46,000	$46,000	$46,000
Annual Credit Value	$40,000	$25,000	$12,000	$0
Credit Phase Out	$6,000	$21,000	$12,000	N/A
Value of Credit	$34,000	$4,000	$0	N/A
Tax Due	$12,000	$42,000	$46,000	$46,000

In this scenario, the business would be eligible for a tax reduction via the credit in the first two years of the tax and would pay the full tax in year 3 and thereafter.

Table F-2.4: 8% Payroll Tax with Phase-In for Business with $150,000 in Vermont Payroll

Tax Year	2017	2018	2019	2020
Qualifying Vermont Payroll	$150,000	$150,000	$150,000	$150,000
GMC Payroll Tax Liability @ 8%	$12,000	$12,000	$12,000	$12,000
Annual Credit Value	$40,000	$25,000	$12,000	$0
Credit Phase Out	$0	$0	$0	N/A
Value of Credit	$12,000	$12,000	$12,000	N/A
Tax Due	$0	$0	$0	$12,000

In this scenario, the business would be able to use the full value of the credit annually. They would be excluded from the tax during the phase-in and would pay the full tax in year 4 and thereafter.

The economic modeling revealed that these credits were expensive, creating a funding problem for the payroll tax and Green Mountain Care. This is due to the large number of small businesses in Vermont. Table F-2.5 sets forth the cost of the payroll tax phase in compared to the revenue generation potential of the payroll tax levied at eight percent.

Table F-2.5: 8% Payroll Tax with Phase-In Credit Value in Millions

Tax Year	2017	2018	2019	2020	2021
Revenue Potential at 8%	1,051	1,073	1,095	1,117	1,140
Credit Value	525	496	441	0	0
Tax Collected	526	577	654	1,117	1,140

A major issue with the credit described above is that it would bring large employers down in their spending while not bringing smaller employers up in spending. Fixing the credit would be expensive, requiring a high transitional payroll tax rate or an additional major revenue source. We constructed an option that could potentially have addressed this issue of losing revenue from employers that pay more today than the target rate while transitioning smaller businesses or those that pay an amount lower than the target GMC payroll tax. This was the step up/step down phase in.

<u>Step Up/Step Down Phase In</u>

The step up/step down would try to transition each business from where they are currently to the target payroll tax rate. It would require four steps.

- Select a base measurement year.
- Determine the current amount the firm spends on health care.
- The firm determines whether they pay more or less than the new tax at the target rate.
- Each firm moves 20% toward the goal each year.

Table F-2.6 illustrates how the phase-in works.

Table F-2.6: Notional Example of Step Up/Step Down Payroll Tax Phase-In

Company A		Company B	
2016 Health Care Spending	$100,000	2016 Health Care Spending	$0
Target GMC Tax at 8% Payroll	$50,000	Target GMC Tax at 8% Payroll	$50,000
Firm A Pays (Step Down)		Firm B Pays (Step Up)	
2017	$90,000	2017	$10,000
2018	$80,000	2018	$20,000
2019	$70,000	2019	$30,000
2020	$60,000	2020	$40,000
2021 (Target Tax)	$50,000	2021 (Target Tax)	$50,000

This solution to the phase-in issue prompted several concerns. First, it would create a complicated set of firm specific tax rates. Also, it would create uncertainty about what behavior firms may engage in during the base measurement year. The finance plan would need substantial modification if many firms dropped or reduced health care coverage prior to the base measurement year to enjoy preferential tax treatment during the first five years. This could be remedied by selecting a base year in the past; however, we rejected this idea as arbitrary and not reflecting a business's current cash position. Also, this concept prompted some concern over legal risk.

Ramp Up

Another alternative was to ramp employers up to the target payroll tax rate over time prior to implementation of GMC. The major concern with this approach was that businesses would be paying prior to receiving benefits, and they would be paying twice if they continued to offer insurance.

Large Employer Credit

We designed a credit for large employers to use in Green Mountain Care if the legislature so chose to exempt large businesses. The credit would work in the following way.

- All businesses would be assessed GMC payroll tax
- Large employers over a certain number of employees would be eligible for a credit against payroll tax.
- A dollar for dollar credit would be granted for all health spending, including, but not limited to, employer sponsored insurance.
- The credit would be taken against the Green Mountain Care payroll tax.

Our legal analysis determined that such a credit likely would pass legal muster.

Overall, the credit proved too costly to be deployed within a sustainable finance plan. The credit would have cost $394 million if applied to all firms with more than 1,000 employees at a payroll tax of 11.5%, more than 25% of the payroll tax base. The credit would cost $468 million if applied to all firms with more than 500 employees at a payroll tax rate of 11.5%, more than 30% of the payroll base. Here, the proportion of the base is more important than the dollar amount. We drew the tentative conclusion that it does not seem possible to construct a publicly financed system that excludes Vermont's largest employers.

Tiered Brackets

We considered and rejected tiered payroll tax brackets due to three main concerns. First, a tiered structure would likely require high and seemingly uncompetitive payroll tax rates. Second, a tiered system would not create a level playing field for Vermont's businesses. Third, we wanted to ensure tax neutrality, meaning that we did not want a tax system that created an incentive to avoid adding the next dollar of payroll.

Wage Effects of GMC

Each firm would determine whether they pay more or less under GMC than the status quo given a firm's current level of health care spending and their prospective payroll tax due. The economic model made certain assumptions about firm behavior regarding employee wages depending on whether the firm would pay more or less under GMC and whether the firm chose to purchase supplemental GMC coverage or continue to offer its own coverage. (See Appendix C.) Generally, the model measured three types of firm behavior in regards to wages.

- Firms that would pay less under GMC shift some of the savings to workers in the form of higher wages.
- Firms that would pay more under GMC would likely shift this cost onto workers except that they generally cannot due to nominal and minimum wage restrictions. This amount would be the "remaining unshifted" amount.
- Given our assumptions about wage stickiness, some firms would retain dollars that they would otherwise shift to wages. These would be called "wages withheld."

Figure F-2.7 breaks down wage shifting in each of the above categories by employer type. How firms would act with dollars in the unshifted and shifting withheld categories would be a major focus of any future macroeconomic analysis.

Table F-2.7: GMC Wage Effects, 2017 – 2021. (Value in Millions)

	2017	2018	2019	2020	2021
Private Business					
Payroll Tax	1,163	1,186	1,216	1,236	1,257
Total Amount Shifted to Wages	78	68	129	67	22
Total Remaining Unshifted	518	367	249	163	102
Total Shifting Withheld	189	103	-	-	-
State					
State Employee Spending	111	114	117	121	124
Payroll Tax	111	114	117	121	124
Total Amount Shifted to Wages	44	43	60	68	80
Total Remaining Unshifted	30	23	15	8	3
Total Shifting Withheld	57	43	22	12	-
Local Government					
Payroll Tax	62	63	64	66	67
Total Amount Shifted to Wages	9	6	9	10	12
Total Remaining Unshifted	22	16	11	7	4
Total Shifting Withheld	18	14	8	4	-
Schools					
Payroll Tax	145	149	153	158	162
Total Amount Shifted to Wages	43	43	60	69	83
Total Remaining Unshifted	45	32	21	11	5
Total Shifting Withheld	62	50	26	14	-

GMC Tax Effects

Green Mountain Care would change the total tax collected by the State and Federal government. We estimate that State revenues would improve modestly due to increased wages and a resulting increase in consumption. We estimate that the federal government would collect less in tax revenue as a result of GMC, due primarily to the use if Schedule A to deduct the public premium.

State Tax Effects

We estimate state tax collections would increase $34 million in 2017, increasing annually thereafter, and grow to $99 million over the status quo by 2021. The increase would be driven mostly by property tax collections. Income tax collections would be down. We believe that this estimate is due to increased utilization of the EITC and some additional utilization of itemized deductions, as Vermont allows taxpayers to deduct up to $5,000 of state taxes paid for income tax purposes.

Table F-2.8: GMC State Tax Effects, 2017 – 2021 (Value in Millions)

Tax Type	2017	2018	2019	2020	2021
State Income Taxes	-2	-7	-4	-7	-8
Property Tax	22	33	48	58	67
Sales Tax	6	10	15	18	19
Meals/Alcohol/Hotel Tax	2	2	3	3	4
Gas Tax	1	2	3	3	3
Cars Tax	3	5	7	8	9
Cigarette Tax	1	3	3	4	4
Corporate Tax	0	0	0	0	0
Other Tax	1	1	1	1	1
TOTAL	**34**	**49**	**76**	**88**	**99**

Federal Tax Effects

We estimate that Vermont residents would pay less in federal taxes under GMC. The main driver of this estimate is the ability to deduct the public premium from federal income taxes on Schedule A. The table below compares the change in federal tax liability between federal income taxes and federal payroll taxes (FICA and Medicare Taxes) under GMC.

Table F-2.9: GMC Federal Tax Effects, 2017 – 2021 (Value in Millions)

	2017	2018	2019	2020	2021
Federal Income Taxes	-191	-222	-223	-236	-242
Payroll Taxes	56	57	75	70	70

It is important to note that some Vermonters would pay more in federal income tax due to higher wages; however, the Schedule A impact offsets in the aggregate the taxes owed due to wage gains. Increased payroll taxes would be due solely to wage gains. GMC would change the value of other federal tax calculations. For more information see the modeling output, which can be viewed online at http://hcr.vermont.gov/library.

Appendix F-3: Alternative Financing Concepts and Balance Sheets

We considered and tested myriad finance concepts during the project. Some concepts were tested using State of Vermont data prior to the microsimulation modeling project. We tested other concepts during the development of microsimulation model but prior to its completion. We ran a variety of concepts through the completed microsimulation model, defining completion as a point at which we had a high degree of confidence that the model was forecasting health care coverage costs correctly. This appendix describes alternative financing concepts that were run through the microsimulation model after its completion.

Population Scenarios

Ultimately, we tested finance concepts against two distinct population scenarios. The first is described in the body of the report. The alternative makes the following changes to the underlying assumptions.

Alternative Population Scenario

The alternative scenario changes the population assumptions in the following ways:

- GMC would not cover non residents working for Vermont firms.
- GMC would not cover federal employees.
- GMC would not provide wrap coverage for employer sponsored insurance.

This reduces the population receiving GMC and the cost. Also, it more closely matches the assumptions of the 2013 report, being the same population except for wrap coverage of employer sponsored insurance. Multiple finance concepts were tested against both population scenarios.

Key Notes

Each alternative concept contains a description of the coverage assumptions. The two key pieces of coverage information are the actuarial value of the plan and the population covered. The concepts include three separate AV levels (80, 87, and 94) and two separate population concepts. Also, the 80AV concepts include concepts with the recommended focused deductible plan designed described in the coverage chapter and appendices and a standard deductible design.

Each alternative concept contains a description of finance assumptions. These include a payroll tax and Public Premium set at varying levels. Alternative financing concepts 1-7 mirror the standard report assumptions, including commuters and federal employees in the coverage and taxes. Also, these concepts assume repeal of provider taxes. Alternative financing concepts 8 - 14 contain different population assumptions, excluding commuters and federal employees from the coverage and tax. Also, these scenarios assume that Vermont retains provider taxes.

Alternative Finance Concept 1

- Coverage Assumptions
  - 94 AV Plan
  - Population assumptions consistent with main body of report, including:
    - Vermont residents
    - Commuters
    - Federal employees
    - Wrap of employer sponsored insurance
    - Population excludes TRICARE and Non-Medicare retirees, excluding state and teacher retirees
- Finance Assumptions
  - Phased-In Payroll Tax with credit designed to transition businesses with up to $1 million in qualifying payroll.
  - The credit is phased out on a dollar for dollar basis for every dollar of tax incurred beyond the credit limit.
  - Payroll Tax is 21% in year 1 and 20% in years 2 and 3.
  - The credit is reduced annually until all businesses are phased into the full 12.5% tax in year four.
  - The credit amount is $105,000 in year 1, $50,000 in year 2, and $25,000 in year 3.
  - Sliding scale Public Premium from 0% - 9.5% up to 400% FPL.
  - Requires all Vermonters at or above 400% FPL to pay 9.5% of income, capped at $27,500.
  - Repeals Provider Taxes

Alternative Financing Concept 1 Continued

	2017	2018	2019	2020	2021
Spending (All Values in Millions)					
GMC Coverage and Operations	-4,340	-4,579	-4,820	-5,001	-5,177
Current Law Revenue Estimates					
Federal Medicaid Match	1,310	1,364	1,413	1,445	1,505
Federal ACA Waiver Funding	106	118	122	125	132
State Medicaid Dollars	344	341	350	358	366
New Revenue Needed	**-2,580**	**-2,756**	**-2,935**	**-3,073**	**-3,174**
Payroll Tax Starting at 21% and Phasing in to 12.5%	1,511	1,631	1,754	1,746	1,781
Public Premium up to 9.5% at 400% FPL Capped at $27,500	1,247	1,306	1,359	1,373	1,382
GMC Fund Fiscal Position	**178**	**181**	**178**	**46**	**-11**

Alternative Finance Concept 2

- Coverage Assumptions
  - 94 AV Plan
  - Population assumptions consistent with main body of report, including:
    - Vermont residents
    - Commuters
    - Federal employees
    - Wrap of employer sponsored insurance
    - Population excludes TRICARE and Non-Medicare retirees, excluding state and teacher retirees
- Finance Assumptions
  - Phased-In Payroll Tax with credit designed to transition businesses with up to $1 million in qualifying payroll.
  - The credit is phased out on a dollar for dollar basis for every dollar of tax incurred beyond the credit limit.
  - Payroll Tax is 8% annually.
  - The credit is reduced annually until all businesses are phased into the full 8% tax in year four.
  - The credit amount is $40,000 in year 1, $25,000 in year 2, and $12,000 in year 3.
  - Sliding scale Public Premium from 0% - 8.0% up to 624% FPL.
  - Requires all Vermonters over 624% FPL to pay 9.5% of income, capped at $27,500.
  - Repeals Provider Taxes

Alternative Financing Concept 2 Continued

	2017	2018	2019	2020	2021
Spending (All Values in Millions)					
GMC Coverage and Operations	-4,340	-4,579	-4,820	-5,001	-5,177
Current Law Revenue Estimates					
Federal Medicaid Match	1,310	1,364	1,413	1,445	1,505
Federal ACA Waiver Funding	106	118	122	125	132
State Medicaid Dollars	344	341	350	358	366
New Revenue Needed	**-2,580**	**-2,756**	**-2,935**	**-3,073**	**-3,174**
Payroll Tax of 8% with Three Year Phase In	526	577	654	1,117	1,140
Public Premium up to 8% at 624% FPL Capped at $27,500	949	995	1,037	1,047	1,055
GMC Fund Fiscal Position	**-1,105**	**-1,184**	**-1,244**	**-909**	**-979**

Alternative Finance Concept 3

- Coverage Assumptions
  - 94 AV Plan
  - Population assumptions consistent with main body of report, including:
    - Vermont residents
    - Commuters
    - Federal employees
    - Wrap of employer sponsored insurance
    - Population excludes TRICARE and Non-Medicare retirees, excluding state and teacher retirees
- Finance Assumptions
  - 12% payroll tax on all Vermont businesses on their qualifying Vermont payroll, no exceptions and no transitions.
  - Sliding scale Public Premium from 0% - 9% up to 400% FPL.
  - Requires all Vermonters at or above 400% FPL to pay 9% of income, capped at $27,500.
  - Repeals Provider Taxes

Alternative Financing Concept 3 Continued

	2017	2018	2019	2020	2021
Spending (All Values in Millions)					
GMC Coverage and Operations	-4,340	-4,579	-4,820	-5,001	-5,177
Current Law Revenue Estimates					
Federal Medicaid Match	1,310	1,364	1,413	1,445	1,505
Federal ACA Waiver Funding	106	118	122	125	132
State Medicaid Dollars	344	341	350	358	366
New Revenue Needed	**-2,580**	**-2,756**	**-2,935**	**-3,073**	**-3,174**
Payroll Tax of 12%	1,576	1,609	1,642	1,676	1,710
Public Premium up to 9% above 400% FPL capped at $27,500	1,191	1,247	1,298	1,311	1,320
GMC Fund Fiscal Position	**187**	**100**	**5**	**-86**	**-144**

Alternative Finance Concept 4

- Coverage Assumptions
  - 80 AV Plan
  - Population assumptions consistent with main body of report, including:
    - Vermont residents
    - Commuters
    - Federal employees
    - Wrap of employer sponsored insurance
    - Population excludes TRICARE and Non-Medicare retirees, excluding state and teacher retirees
- Finance Assumptions
  - Phased-In Payroll Tax with credit designed to transition businesses with up to $1 million in qualifying payroll.
  - The credit is phased out on a dollar for dollar basis for every dollar of tax incurred beyond the credit limit.
  - Payroll Tax is 13% in years one through three and 9.5% in years four and five.
  - The credit is reduced annually until all businesses are phased into the full 9.5% tax in year four.
  - The credit amount is $65,000 in year 1, $32,500 in year 2, and $16,250 in year 3.
  - Sliding scale Public Premium from 0% - 9.5% up to 400% FPL.
  - Requires all Vermonters at or above 400% FPL to pay 9.5% of income, capped at $27,500.
  - Repeals Provider Taxes

Alternative Finance Concept 4 Continued

	2017	2018	2019	2020	2021
Spending (All Values in Millions)					
GMC Coverage and Operations	-3,751	-4,000	-4,291	-4,452	-4,613
Current Law Revenue Estimates					
Federal Medicaid Match	1,294	1,344	1,400	1,432	1,491
Federal ACA Waiver Funding	106	118	122	125	132
State Medicaid Dollars	344	341	350	358	366
New Revenue Needed	**-2,007**	**-2,197**	**-2,419**	**-2,537**	**-2,624**
Payroll Tax Starting at 13% and Phasing in to 9.5%	886	983	1,102	1,327	1,354
Public Premium up to 9.5% above 400% FPL capped at $27,500	1,153	1,237	1,340	1,354	1,365
GMC Fund Fiscal Position	**32**	**23**	**23**	**144**	**95**

Alternative Finance Concept 5

- Coverage Assumptions
  - 80 AV Plan
  - Population assumptions consistent with main body of report, including:
    - Vermont residents
    - Commuters
    - Federal employees
    - Wrap of employer sponsored insurance
    - Population excludes TRICARE and Non-Medicare retirees, excluding state and teacher retirees
- Finance Assumptions
  - 9.5% payroll tax on all Vermont businesses on their qualifying Vermont payroll, no exceptions and no transitions.
  - Sliding scale Public Premium from 0% - 8.0% up to 400% FPL.
  - Requires all Vermonters at or above 400% FPL to pay 8.0% of income, capped at $27,500.
  - Repeals Provider Taxes

Alternative Finance Concept 5 Continued

	2017	2018	2019	2020	2021
Spending (All Values in Millions)					
GMC Coverage and Operations	-3,751	-4,000	-4,291	-4,452	-4,613
Current Law Revenue Estimates					
Federal Medicaid Match	1,294	1,344	1,400	1,432	1,491
Federal ACA Waiver Funding	106	118	122	125	132
State Medicaid Dollars	344	341	350	358	366
New Revenue Needed	**-2,007**	**-2,197**	**-2,419**	**-2,537**	**-2,624**
Payroll Tax at 9.5%	1,248	1,274	1,300	1,327	1,354
Public Premium up to 8.0% above 400% FPL capped at $27,500	994	1,068	1,158	1,170	1,181
GMC Fund Fiscal Position	**235**	**145**	**39**	**-40**	**-89**

Alternative Finance Concept 6

- Coverage Assumptions
  - 80 AV Plan
  - Population assumptions consistent with main body of report, including:
    - Vermont residents
    - Commuters
    - Federal employees
    - Wrap of employer sponsored insurance
    - Population excludes TRICARE and Non-Medicare retirees, excluding state and teacher retirees
- Finance Assumptions
  - 11.5% payroll tax on all Vermont businesses on their qualifying Vermont payroll, no exceptions and no transitions.
  - Sliding scale Public Premium from 0% - 9.5% up to 400% FPL.
  - Requires all Vermonters at or above 400% FPL to pay 9.5% of income, capped at $27,500.
  - Repeals Provider Taxes

Alternative Finance Concept 6 Continued

	2017	2018	2019	2020	2021
Spending (All Values in Millions)					
GMC Coverage and Operations	-3,751	-4,000	-4,291	-4,452	-4,613
Current Law Revenue Estimates					
Federal Medicaid Match	1,294	1,344	1,400	1,432	1,491
Federal ACA Waiver Funding	106	118	122	125	132
State Medicaid Dollars	344	341	350	358	366
New Revenue Needed	**-2,007**	**-2,197**	**-2,419**	**-2,537**	**-2,624**
Payroll Tax at 9.5%	1,510	1,542	1,574	1,606	1,639
Public Premium up to 9.5% above 400% FPL capped at $27,500	1,153	1,237	1,340	1,354	1,365
GMC Fund Fiscal Position	**656**	**582**	**495**	**423**	**380**

Alternative Finance Concept 7

- Coverage Assumptions
    - 80 AV Plan with standard deductible plan design
    - Population assumptions consistent with main body of report, including:
        - Vermont residents
        - Commuters
        - Federal employees
        - Wrap of employer sponsored insurance
        - Population excludes TRICARE and Non-Medicare retirees, excluding state and teacher retirees
- Finance Assumptions
    - 9.5% payroll tax on all Vermont businesses on their qualifying Vermont payroll, no exceptions and no transitions.
    - Sliding scale Public Premium from 0% - 8.0% up to 400% FPL.
    - Requires all Vermonters at or above 400% FPL to pay 8.0% of income, capped at $27,500.
    - Repeals Provider Taxes

Alternative Finance Concept 7 Continued

	2017	2018	2019	2020	2021
Spending (All Values in Millions)					
GMC Coverage and Operations	-3,773	-4,027	-4,320	-4,482	-4,643
Current Law Revenue Estimates					
Federal Medicaid Match	1,293	1,344	1,400	1,432	1,491
Federal ACA Waiver Funding	106	118	122	125	132
State Medicaid Dollars	344	341	350	358	366
New Revenue Needed	**-2,030**	**-2,224**	**-2,448**	**-2,567**	**-2,654**
Payroll Tax at 9.5%	1,248	1,274	1,300	1,327	1,354
Public Premium up to 9.5% above 400% FPL capped at $27,500	992	1,067	1,158	1,170	1,181
GMC Fund Fiscal Position	**210**	**117**	**10**	**-70**	**-119**

Alternative Finance Concept 8

- Coverage Assumptions
  - 94 AV Plan
  - Alternative coverage population
    - No commuters
    - No federal employees
    - No wrap of employer sponsored insurance
- Finance Assumptions
  - 8.0 % payroll tax on all Vermont businesses on their qualifying Vermont payroll, no exceptions and no transitions.
  - Sliding scale Public Premium from 0% - 8% of income, depending on income and family size. Sliding scale covers 90% of Vermont households.
  - Requires all Vermonters at or above 624% FPL to pay 8.0% of income, capped at $27,500.
  - Retains Provider Taxes

Alternative Finance Concept 8 Continued

	2017	2018	2019	2020	2021
Spending (All Values in Millions)					
GMC Coverage and Operations	-3,792	-4,008	-4,225	-4,381	-4,543
Current Law Revenue Estimates					
Federal Medicaid Match	1,291	1,344	1,392	1,424	1,483
Federal ACA Waiver Funding	106	118	122	125	132
State Medicaid Dollars	502	509	529	549	570
New Revenue Needed	**-1,893**	**-2,037**	**-2,182**	**-2,283**	**-2,358**
Payroll Tax of 8%	1,051	1,073	1,095	1,117	1,140
Public Premium up to 8% at 624% FPL Capped at $27,500	803	847	885	896	906
GMC Fund Fiscal Position	**-39**	**-117**	**-202**	**-270**	**-312**

Alternative Finance Concept 9

- Coverage Assumptions
  - 94 AV Plan
  - Alternative coverage population
    - No commuters
    - No federal employees
    - No wrap of employer sponsored insurance
- Finance Assumptions
  - 9.5 % payroll tax on all Vermont businesses on their qualifying Vermont payroll, no exceptions and no transitions.
  - Sliding scale Public Premium from 0% - 8% of income, depending on income and family size.
  - Requires all Vermonters at or above 400% FPL to pay 8.0% of income, capped at $27,500.
  - Retains Provider Taxes

Alternative Finance Concept 9 Continued

	2017	2018	2019	2020	2021
Spending (All Values in Millions)					
GMC Coverage and Operations	-3,792	-4,008	-4,225	-4,381	-4,543
Current Law Revenue Estimates					
Federal Medicaid Match	1,291	1,344	1,392	1,424	1,483
Federal ACA Waiver Funding	106	118	122	125	132
State Medicaid Dollars	502	509	529	549	570
New Revenue Needed	**-1,893**	**-2,037**	**-2,182**	**-2,283**	**-2,358**
Payroll Tax of 9.5%	1,248	1,274	1,300	1,327	1,354
Public Premium up to 8% at 400% FPL Capped at $27,500	911	960	1,002	1,015	1,026
GMC Fund Fiscal Position	**266**	**197**	**120**	**59**	**22**

Alternative Finance Concept 10

- Coverage Assumptions
  - 94 AV Plan
  - Alternative coverage population
    - No commuters
    - No federal employees
    - No wrap of employer sponsored insurance
- Finance Assumptions
  - 9.5 % payroll tax on all Vermont businesses on their qualifying Vermont payroll, no exceptions and no transitions.
  - Sliding scale Public Premium from 0% - 8% of income, depending on income and family size.
  - Requires all Vermonters at or above 500% FPL to pay 8.0% of income, capped at $27,500.
  - Retains Provider Taxes

Alternative Finance Concept 10 Continued

	2017	2018	2019	2020	2021
Spending (All Values in Millions)					
GMC Coverage and Operations	-3,792	-4,008	-4,225	-4,381	-4,543
Current Law Revenue Estimates					
Federal Medicaid Match	1,291	1,344	1,392	1,424	1,483
Federal ACA Waiver Funding	106	118	122	125	132
State Medicaid Dollars	502	509	529	549	570
New Revenue Needed	**-1,893**	**-2,037**	**-2,182**	**-2,284**	**-2,359**
Payroll Tax of 9.5%	1,248	1,274	1,300	1,327	1,354
Public Premium up to 8% at 500% FPL Capped at $27,500	861	908	947	960	971
GMC Fund Fiscal Position	**216**	**145**	**65**	**3**	**-11**

Alternative Finance Concept 11

- Coverage Assumptions
  - 94 AV Plan
  - Alternative coverage population
    - No commuters
    - No federal employees
    - No wrap of employer sponsored insurance
- Finance Assumptions
  - 8.95 % payroll tax on all Vermont businesses on their qualifying Vermont payroll, no exceptions and no transitions.
  - Sliding scale Public Premium from 0% - 8% of income, depending on income and family size.
  - Requires all Vermonters at or above 624% FPL to pay 8.0% of income capped at $27,500. Sliding scale covers 90% of Vermont households.
  - Retains Provider Taxes

Alternative Finance Concept 11 Continued

	2017	2018	2019	2020	2021
Spending (All Values in Millions)					
GMC Coverage and Operations	-3,792	-4,008	-4,225	-4,381	-4,543
Current Law Revenue Estimates					
Federal Medicaid Match	1,291	1,344	1,392	1,424	1,483
Federal ACA Waiver Funding	106	118	122	125	132
State Medicaid Dollars	502	509	529	549	570
New Revenue Needed	**-1,893**	**-2,037**	**-2,182**	**-2,284**	**-2,359**
Payroll Tax of 8.95%	1,175	1,200	1,225	1,250	1,275
Public Premium up to 8% at 624% FPL Capped at $27,500	803	847	885	896	906
GMC Fund Fiscal Position	**85**	**10**	**-72**	**-138**	**-178**

Alternative Finance Concept 12

- Coverage Assumptions
  - 87 AV Plan
  - Alternative coverage population
    - No commuters
    - No federal employees
    - No wrap of employer sponsored insurance
- Finance Assumptions
  - 8 % payroll tax on all Vermont businesses on their qualifying Vermont payroll, no exceptions and no transitions.
  - Sliding scale Public Premium from 0% - 8% of income, depending on income and family size.
  - Requires all Vermonters at or above 624% FPL to pay 8.0% of income, capped at $27,500. Sliding scale covers 90% of Vermont households.
  - Retains Provider Taxes

Alternative Finance Concept 12 Continued

	2017	2018	2019	2020	2021
Spending (All Values in Millions)					
GMC Coverage and Operations	-3,563	-3,785	-4,018	-4,168	-4,322
Current Law Revenue Estimates					
Federal Medicaid Match	1,284	1,335	1,386	1,418	1,476
Federal ACA Waiver Funding	106	118	122	125	132
State Medicaid Dollars	502	509	529	549	570
New Revenue Needed	**-1,671**	**-1,823**	**-1,981**	**-2,076**	**-2,144**
Payroll Tax of 8%	1,051	1,073	1,095	1,117	1,140
Public Premium up to 8% at 624% FPL Capped at $27,500	771	825	875	888	897
GMC Fund Fiscal Position	**151**	**75**	**-11**	**-71**	**-107**

Alternative Finance Concept 13

- Coverage Assumptions
  - 80 AV Plan with standard deductible plan design
  - Alternative coverage population
    - No commuters
    - No federal employees
    - No wrap of employer sponsored insurance
- Finance Assumptions
  - 8% payroll tax on all Vermont businesses on their qualifying Vermont payroll, no exceptions and no transitions.
  - Sliding scale Public Premium from 0% - 8% of income, depending on income and family size.
  - Requires all Vermonters at or above 624% FPL to pay 8.0% of income, capped at $27,500. Sliding scale covers 90% of Vermont households.
  - Retains Provider Taxes

Alternative Finance Concept 13 Continued

	2017	2018	2019	2020	2021
Spending (All Values in Millions)					
GMC Coverage and Operations	-3,354	-3,559	-3,806	-3,949	-4,097
Current Law Revenue Estimates					
Federal Medicaid Match	1,274	1,324	1,379	1,411	1,469
Federal ACA Waiver Funding	106	118	122	125	132
State Medicaid Dollars	502	509	529	549	570
New Revenue Needed	**-1,472**	**-1,608**	**-1,776**	**-1,864**	**-1,926**
Payroll Tax of 9.5%	1,051	1,073	1,095	1,117	1,140
Public Premium up to 8% at or above 624% FPL Capped at $27,500	754	807	874	886	897
GMC Fund Fiscal Position	**333**	**272**	**193**	**139**	**111**

Alternative Finance Concept 14

- Coverage Assumptions
  - 80 AV Plan
  - Alternative coverage population
    - No commuters
    - No federal employees
    - No wrap of employer sponsored insurance
- Finance Assumptions
  - 8% payroll tax on all Vermont businesses on their qualifying Vermont payroll, no exceptions and no transitions.
  - Sliding scale Public Premium from 0% - 8% of income, depending on income and family size.
  - Requires all Vermonters at or above 624% FPL to pay 8.0% of income, capped at $27,500.
  - Retains Provider Taxes

Alternative Finance Concept 14 Continued

	2017	2018	2019	2020	2021
Spending (All Values in Millions)					
GMC Coverage and Operations	-3,343	-3,550	-3,796	-3,938	-4,085
Current Law Revenue Estimates					
Federal Medicaid Match	1,275	1,324	1,379	1,411	1,469
Federal ACA Waiver Funding	106	118	122	125	132
State Medicaid Dollars	502	509	529	549	570
New Revenue Needed	**-1,460**	**-1,599**	**-1,766**	**-1,853**	**-1,914**
Payroll Tax of 9.5%	1,051	1,073	1,095	1,117	1,140
Public Premium up to 8% at or above 624% FPL Capped at $27,500	754	807	873	886	897
GMC Fund Fiscal Position	**345**	**281**	**202**	**150**	**123**

Appendix F-4: GMC Public Premium Tax Exclusions and Credits

Medicare

Medicare enrollees would be exempt from the public premium. Joint filers where one member of a household is a Medicare enrollee and others are not (split households) would pay a reduced tax, one half of the normal tax liability. The Medicare exclusion could be revisited during a subsequent phase of GMC where Medicare enrollees may receive wrap around coverage from GMC.

Table F-4.1: Medicare, Split Household, and Non-Medicare Public Premium Tax Liability

Taxpayer	Medicare Household	Split Household	Non-Medicare Household
Income	$68,848	$68,848	$68,848
Family Size	2	2	2
FPL	400%	400%	400%
Public Premium	$0	$3,147	$6,294

An additional policy question is how to treat Medicare and Medicare split households the year they enroll in Medicare. The legislature could devise a credit system, make taxpayers pay a pro rata share of the tax based on time in the system, or treat Medicare recipients as enrolled for the full year during the year of Medicare enrollment.

TRICARE

Active duty and retired military service members with active TRICARE coverage would be enrolled in GMC but have their enrollment suspended for any period of time where they have TRICARE coverage. TRICARE recipients would be allowed a non-refundable tax credit for each month where they are enrolled in TRICARE coverage. The tax calculation would work in the following way for TRICARE recipients.

- Determine public premium tax liability
- Divide liability by 12 to determine credit amount per month of TRICARE coverage.
- Determine number of months covered by TRICARE
- Multiply credit amount and months enrolled in TRICARE to determine full credit value
- Subtract credit amount from public premium
- Pay remaining tax liability.

Table F-4.2: Example of TRICARE Recipient Public Premium Tax Liability

Taxpayer	TRICARE Household #1	TRICARE Household #2
Income	$55,462	$55,462
Family Size	4	4
FPL	200%	200%
Public Premium	$1,973	$1,973
Monthly Credit Amount (public premium/12)	$164.42	$164.42
Months Enrolled in TRICARE	6	12
Credit Value	$987	$1,973
Public Premium Tax Liability	$986	$0

As shown above, someone with TRICARE coverage for an entire year would be exempt from the tax.

Non-Medicare Retirees, Excluding State and Teacher Retirees

There would be a limited credit for Non-Medicare retirees, excluding state and teacher retirees. Eligible retirees, generally under age 65, would be enrolled in GMC but have their enrollment suspended for any period of time where they have employer-sponsored retiree health care coverage. These taxpayers would be allowed a non-refundable tax credit for each month where they have employer coverage. The tax calculation would work in the following way, mirroring the TRICARE credit.

- Determine public premium tax liability
- Divide liability by 12 to determine credit amount per month of employer retiree coverage.
- Determine number of months covered by employer retiree coverage
- Multiply credit amount and months enrolled in employer retiree coverage
- Subtract credit amount from public premium
- Pay remaining tax liability.

The credit would be aimed primarily at existing federal retirees and those with existing private sector employer-sponsored retiree coverage. In a sense, the credit would be an attempt to grandfather these employees who are close to Medicare eligibility and already relying on their retiree coverage. This credit should sunset by January 1st, 2027 to reflect the fact that Vermont residents would have time to plan for retirement considering the impact of GMC coverage and taxes. State and teacher retirees would be ineligible for the credit, as the State retiree system would be readjusted to account for the transition to Green Mountain Care.

Table F-4.3: Limited Non-Medicare Retiree Credit Recipient Public Premium Tax Liability

Taxpayer	Retiree Household #1	Retiree Household #2
Income	$55,462	$55,462
Family Size	1	1
FPL	200%	200%
Public Premium	$1,973	$1,973
Monthly Credit Amount (public premium/12)	$164.42	$164.42
Months Enrolled in TRICARE	6	12
Credit Value	$987	$1,973
Public Premium Tax Liability	$986	$0

As shown above, retirees with coverage for an entire year would be exempt from the tax.

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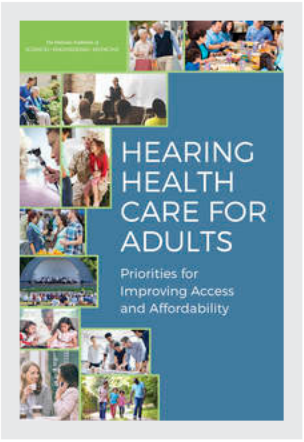

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HEARING HEALTH CARE FOR ADULTS

Priorities for Improving Access and Affordability

Committee on Accessible and Affordable
Hearing Health Care for Adults

Dan G. Blazer, Sarah Domnitz, and Catharyn T. Liverman, *Editors*

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Reviewers

This report has been reviewed in draft form by individuals chosen for their diverse perspectives and technical expertise. The purpose of this independent review is to provide candid and critical comments that will assist the institution in making its published report as sound as possible and to ensure that the report meets institutional standards for objectivity, evidence, and responsiveness to the study charge. The review comments and draft manuscript remain confidential to protect the integrity of the deliberative process. We wish to thank the following individuals for their review of this report:

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Hearing Health Care for Adults: Priorities for Improving Access and Affordability

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Although the reviewers listed above have provided many constructive comments and suggestions, they did not see the final draft of the report before its release. The review of this report was overseen by **Nancy Fugate Woods,** University of Washington, and **Enriqueta C. Bond,** QE Philanthropic Advisors. They were responsible for making certain that an independent examination of this report was carried out in accordance with institutional procedures and that all review comments were carefully considered. Responsibility for the final content of this report rests entirely with the authoring committee and the institution.

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Preface

For those who can hear, auditory connection to the world is usually taken for granted. Hearing is a complex physiologic process, and when lost or diminished, it can have effects on health, independence, well-being, quality of life, and daily function as well as on everyday communication. This study—focused on improving accessibility and affordability of hearing care for adults—occurs at an opportune time for progress in this field. Hearing technologies are evolving at ever-increasing rates, care is moving into a variety of retail and online settings, and the pricing structures for hearing aids and associated services are being reexamined. Our committee makes its recommendations acknowledging these changes and urging further and immediate action.

The committee grappled with the questions of how and why hearing loss has been relegated to the sidelines of health care. The barriers to access that have been reported include high costs, lack of insurance coverage, the stigma associated with hearing difficulties and wearing hearing aids, and limited awareness of available options. The goals of this report and its recommendations are to increase transparency, expand treatment options, provide the evidence necessary for consumers to make informed decisions about their hearing health care, and examine various health care delivery and payment models. Hearing loss is a significant public health problem that requires actions throughout the health care and broader community.

Our committee's work greatly benefited from the insights provided by the workshop speakers and feedback from the report reviewers as well as from comments from many others who provided information to the committee. We especially thank the study sponsors for their work on hearing

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health and for their support of this study (listed alphabetically): the Centers for Disease Control and Prevention, the Department of Defense, the Department of Veterans Affairs, the Food and Drug Administration, the Hearing Loss Association of America, the National Institute on Aging, and the National Institute on Deafness and Other Communication Disorders.

I am truly grateful for having had the opportunity to work with this dedicated committee which undertook this study with great energy, intellect, and commitment. This was a complex task full of details and nuances, and the committee members stepped up to meet the challenge—so much so that even a blizzard did not stop them—meeting by Web conferencing and then rearranging their schedules to meet in person 2 weeks later. Their level of engagement in the study and their reasoned and thoughtful discussions made this report possible. Committee members balanced their deeply held individual views with the overarching goal of improving hearing health care. We were all fortunate to work with an intrepid and skilled team of the National Academies of Sciences, Engineering, and Medicine staff, and we deeply thank Sarah Domnitz, Cathy Liverman, Claire Giammaria, Sophie Yang, and Judy Estep, led by Andrew Pope, board director. Without their outstanding support, this report would have been impossible. We also thank Andrea Schultz for her writing and editing work and Ellen Kimmel of the Academies library staff for her assistance throughout the study process. The committee greatly appreciates the efforts of Teresa Meyer-Clemens and Deanna Baker in providing captioning.

As noted above, improving communication for individuals with hearing loss was the goal of the committee's work. It is the committee's hope that the many organizations, agencies, and individuals working on or interested in hearing health care will find this report a source of common ground from which they can work together to keep moving this field forward.

Sincerely,

Dan G. Blazer, *Chair*
Committee on Accessible and Affordable
Hearing Health Care for Adults

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Abbreviations and Acronyms

AAA	American Academy of Audiology
ACA	Patient Protection and Affordable Care Act
ACL	Administration for Community Living
ADA	Americans with Disabilities Act
AHRQ	Agency for Healthcare Research and Quality
ANSI	American National Standards Institute
ASA	Acoustical Society of America
ASHA	American Speech–Language–Hearing Association
BLSA	Baltimore Longitudinal Study of Aging
BMHS	Blue Mountains Hearing Study
BMI	body mass index
CDC	Centers for Disease Control and Prevention
CFR	Code of Federal Regulations
CI	confidence interval
CMS	Centers for Medicare & Medicaid Services
CQI	continuous quality improvement
CTA	Consumer Technology Association
CVAA	Twenty-First Century Communications and Video Accessibility Act of 2010
dB	decibel
dB HL	decibel hearing level
dB SNR	signal-to-noise ratio in decibels

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dB SPL	decibel of sound pressure level
DoD	Department of Defense
DOJ	Department of Justice
EHLS	Epidemiology of Hearing Loss Study
EMC	electromagnetic compatibility
EPSDT	Early and Periodic Screening, Diagnostic, and Treatment (program)
ERISA	Employee Retirement Income Security Act of 1974
FCC	Federal Communications Commission
FDA	Food and Drug Administration
FDCA	Federal Food, Drug, and Cosmetic Act
FM	frequency-modulated
FR	Final Rule
FTC	Federal Trade Commission
HEDIS	Healthcare Effectiveness Data and Information Set
HIPAA	Health Insurance Portability and Accountability Act
HHS	Department of Health and Human Services
HLAA	Hearing Loss Association of America
HMO	health maintenance organization
HR	hazard ratio
HRSA	Health Resources & Services Administration
Hz	hertz
ICF	*International Classification of Functioning, Disability and Health*
IOM	Institute of Medicine
kHz	kilohertz
LACE	Listening and Communication Enhancement (program)
NHANES	National Health and Nutrition Examination Survey
NHS	National Health Service
NIA	National Institute on Aging
NIDCD	National Institute on Deafness and Other Communication Disorders
NIH	National Institutes of Health
NIOSH	National Institute for Occupational Safety and Health

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OSHA	Occupational Safety and Health Administration
OTC	over the counter
PCAST	President's Council of Advisors on Science and Technology
PMA	premarket approval
PQRS	Physician Quality Reporting System
PSAP	personal sound amplification product
PTA	pure tone average
QSR	quality system regulation
RERC	Rehabilitation Engineering Research Center
SE	standard error
UIB	user instructional brochure
USPSTF	U.S. Preventive Services Task Force
VA	Department of Veterans Affairs
WHO	World Health Organization

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Summary

The loss of hearing—be it gradual or acute, mild or severe, present since birth or acquired in older age—can have significant effects on one's communication abilities, quality of life, social participation, and health. Despite this, many people with hearing loss do not seek or receive hearing health care. The reasons are numerous, complex, and often interconnected. For some, hearing health care is not affordable. For others, the appropriate services are difficult to access, or individuals do not know how or where to access them. Others may not want to deal with the stigma that they and society may associate with needing hearing health care and obtaining that care. Still others do not recognize they need hearing health care, as hearing loss is an invisible health condition that often worsens gradually over time. Finally, others do not believe that anything can be done to help them or they feel that the perceived benefit or value of intervention will not be significant enough to overcome the perceived barriers to access.

In the United States, an estimated 30 million individuals (12.7 percent of Americans ages 12 years or older) have hearing loss. Globally, hearing loss has been identified as the fifth leading cause of years lived with disability. Age-related hearing loss is of increasing public health concern as the older adult population grows. The prevalence of hearing loss rises steeply with age, from approximately 3 percent among adults 20 to 29 years of age to an estimated 45 percent among the 70- to 74-year age group and more than 80 percent in the 85-years-and-older age group. The unmet need for hearing health care is high. Estimates of hearing aid use are that 67 to 86 percent of adults who may benefit from hearing aids do not use them.

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This study focuses on improving the accessibility and affordability of hearing health care for adults of all ages. This report uses the term "hearing health care" to encompass the range of services (e.g., diagnosis and evaluation, auditory rehabilitation) and hearing technologies (hearing aids and hearing assistive technologies) relevant to hearing loss. Hearing health care is viewed through the social-ecological model that emphasizes the multiple levels of support and action needed throughout society to promote hearing and communication and reduce hearing loss and its effects. The report does not address surgical devices such as cochlear implants.

To address the statement of task, the National Academies of Sciences, Engineering, and Medicine appointed a 17-member committee with expertise in hearing health care services, audiology, otology, hearing loss advocacy, primary care, geriatrics, health economics, technology policy and law, and epidemiology. The study was sponsored by (alphabetically) the Centers for Disease Control and Prevention, the Department of Defense, the Department of Veterans Affairs, the Food and Drug Administration, the Hearing Loss Association of America, the National Institute on Aging, and the National Institute on Deafness and Other Communication Disorders.

In examining the complex issues around hearing loss in adults and hearing health care, the committee developed a set of principles that helped shape its work:

- *Prioritize the needs of individuals with hearing loss*
- *Emphasize hearing as a public health concern with societal responsibilities and effects*
- *Move toward equity and transparency*
- *Recognize that hearing loss may require a range of solutions*
- *Improve outcomes with a focus on value, quality, and safety*
- *Work toward an integrated approach that provides options*

UNDERSTANDING THE EXTENT AND IMPACT OF HEARING LOSS

Hearing loss may develop at any time during the life course. The onset can be sudden or gradual, and it can affect one or both ears. Hearing loss can result from a variety of causes (e.g., trauma, infection, genetic syndromes, aging, excessive noise exposure), and the pathological changes can occur in one or more regions of the auditory system. Although some hearing loss can be temporary or treatable using medical or surgical methods, most hearing loss in adults is permanent and managed as a chronic condition. Presbycusis, or age-related hearing loss, has been documented in many mammalian species and is characterized in humans by increased hearing thresholds, impaired processing of higher-level sounds (including reduced

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frequency and temporal resolution), and difficulty understanding speech, especially in noisy or complex listening environments.

Much remains to be learned about the extent and impact of hearing loss, particularly from a population perspective. The effects of hearing loss on communication and, as a consequence, social interactions and functional abilities have serious public health implications for adults of all ages. Among older adults—a growing demographic in the United States and globally—hearing loss is a common, chronic disability that escalates especially in those over 80 years of age. A link between hearing ability and cognitive function and dementia has long been recognized but has only recently begun to be systematically studied. Cross-sectional studies have examined the association of hearing loss with falls, declines in physical functioning, and hospitalization, but population-based longitudinal studies are lacking. The potential economic impacts of hearing loss, including reduced income and increases in unemployment or underemployment, have been modeled, but population-based longitudinal data are needed.

Goal 1: *Improve Population-Based Information on Hearing Loss and Hearing Health Care*

Recommendation 1: The National Institutes of Health, the Centers for Disease Control and Prevention, the Patient-Centered Outcomes Research Institute, the Department of Defense, the Department of Veterans Affairs, state public health agencies, and other relevant government agencies, as well as nonprofit organizations, hearing health care professional associations, academic institutions, and researchers, should strengthen efforts to collect, analyze, and disseminate prospective population-based data on hearing loss in adults and the effects of hearing loss and its treatment on patient outcomes.

Specifically,

- Support and conduct studies to develop, evaluate, strengthen, and align metrics for hearing loss and communication abilities;
- Support and conduct studies, including longitudinal studies, in diverse populations to better understand
  - the risk and natural history of hearing loss,
  - risk factors and comorbidities of hearing loss,
  - hearing health care needs, and
  - the impact of hearing loss and its treatment on health, function, economic productivity, and quality of life; and
- Develop and strengthen research training programs to address hearing loss as a public health concern with attention to cross-disciplinary training on sensory disorders, epidemiological methods,

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advanced biostatistics, and health services and health economics research methods.

HEARING HEALTH CARE SERVICES: IMPROVING ACCESS AND QUALITY

Although it is widely recognized that hearing aids and hearing assistive technologies can be key components to improving hearing and communication abilities, the critical role that hearing-related services can play in hearing health care is often overlooked. These services include the systematic and comprehensive assessment of an individual's hearing and communication difficulties (e.g., at home, in the workplace, participating in the community), the diagnosis of underlying medical conditions, evaluation of the individual's hearing loss and treatment needs, auditory rehabilitation, and counseling and other services that help the individual to maximize his or her hearing and communication abilities.

Navigating the hearing health care system can be confusing. Entry into the hearing health care system can occur through multiple pathways (audiologists, hearing instrument specialists, otolaryngologists, primary care providers, self service, and others). Consumers can be left with no clear guidance on what will best fit their financial, health, social, and hearing needs. When consumers are left to traverse this complex system, they can find the process and outcomes to be frustrating and unsatisfactory. For the most part, little is known about the relative effectiveness or quality of these services. Guidelines, standards, and metrics must be regularly reviewed and updated to ensure that the most recent evidence is translated into best practices for hearing health care professionals and is disseminated to people with hearing loss and their families.

Goal 2: *Develop and Promote Measures to Assess and Improve Quality of Hearing Health Care Services*

Recommendation 2: The Centers for Medicare & Medicaid Services, the National Institutes of Health, the Department of Defense, the Department of Veterans Affairs, other relevant federal agencies, hearing health care professional associations and providers, advocacy organizations, health care quality improvement organizations, health insurance companies, and health systems should collaborate to

- **Align and promote best practices and core competencies across the continuum of hearing health care, and implement mechanisms to ensure widespread adherence; and**
- **Research, develop, and implement a set of quality metrics and measures to evaluate hearing health care services with the end goal of improving hearing- and communication-focused patient outcomes.**

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Although the hearing health care system is intended to help individuals maximize their hearing and communication abilities, manage their health and well-being, and find ways to compensate for their hearing loss through the use of services and technologies, many individuals report dissatisfaction with the U.S. hearing health care system. Multiple barriers prevent the system from being person centered and person directed. Instead, much of the direction lies in the hands of hearing aid manufacturers and hearing health care professionals, which results in challenges for individuals who want to switch providers, and in challenges for professionals trying to help individuals who seek their assistance with a hearing device that can only be programmed by certain providers. Individuals who need hearing health care services and technologies should be at the center of their own care, with the option to make decisions about what is the most appropriate care for them. In examining the Food and Drug Administration's (FDA's) requirements for physician evaluation prior to obtaining hearing aids, the committee finds no evidence that the required medical evaluation or waiver of that evaluation provides any clinically meaningful benefit. In weighing the rareness of the medical conditions, the incidence of hearing loss in adults, the widespread need for hearing health care, and the wide use of the medical waiver, the committee recommends removing this regulation to serve consumers' best interests. Relatedly, individuals should be able to obtain their hearing health care records, including audiogram and hearing aid programming history, from their hearing health care professional to enable them to be better informed about their health and change providers if they so choose.

Goal 3: *Remove FDA Regulation for Medical Evaluation or Waiver to Purchase a Hearing Aid*

Recommendation 3: The Food and Drug Administration should remove the regulation that an adult seeking hearing aids be required to first have a medical evaluation or sign a waiver of that evaluation and should ensure consumers receive information about the medical conditions that could cause hearing loss through continued inclusion of that information in hearing aid user instructional brochures.

Goal 4: *Empower Consumers and Patients in Their Use of Hearing Health Care*

Recommendation 4: Hearing health care professionals, professional associations, advocacy organizations, and relevant government agencies such as the Office for Civil Rights at the Department of Health and Human Services should ensure patients are aware of, and understand how to exercise, their rights of access to information about themselves

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under the Health Insurance Portability and Accountability Act Privacy Rule (45 C.F.R. Section 164.524), including their audiograms and hearing aid programming history.

Similar to many other sectors of the U.S. health care system, hearing health care does not reach all who need it. Residents of rural and low-income urban areas are at a particular disadvantage in accessing care. Furthermore, the minimal diversity in the hearing health care workforce does not mirror the wide diversity in the population of adults this workforce serves. With the high incidence of hearing loss in the adult population and the low utilization of the hearing health care system, efforts should be made to provide easier access for all, especially those for whom socioeconomic barriers exist.

Goal 5: ***Improve Access to Hearing Health Care for Underserved and Vulnerable Populations***

Recommendation 5: The Health Resources & Services Administration, state health departments, advocacy organizations, and hearing health care professional schools and associations should

- **Collaborate and partner with health care providers to ensure hearing health care accessibility throughout rural and underserved areas using mechanisms such as telehealth, outreach clinics (including federally qualified community health centers), and community health workers;**
- **Support and promote programs, including incentives such as tuition assistance, to increase diversity in all sectors of the hearing health care workforce; and**
- **Promote the training of cultural competency in the hearing health care workforce and incentivize practice in underserved communities.**

Effective communication is key both for emotional well-being and for participating in making decisions about one's own health care plan. Hearing is often overlooked in adult medical and wellness visits because of the large number of other health conditions and concerns that must be assessed or, in the case of older adults, because of the assumption that hearing loss is typical and cannot be helped. However, increasing evidence shows that hearing is important for health, and the potential for miscommunication with health care providers due to hearing loss demonstrates the importance of paying attention to hearing ability during medical and wellness visits. Furthermore, health care providers should be aware of the importance of hearing and the need to emphasize, rather than dismiss, hearing concerns during health care visits.

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Goal 6: *Promote Hearing Health Care in Wellness and Medical Visits*

Recommendation 6: Public health agencies (including the Centers for Disease Control and Prevention and state health departments), health care systems (including those of the Department of Defense and the Department of Veterans Affairs), health care professional schools and associations, advocacy organizations, health care providers, and individuals and their families should promote hearing health in regular medical and wellness visits (including the Medicare Annual Wellness Visit).

Specifically,

- Use patient visits to assess and discuss potential hearing difficulties that could affect doctor–patient communication and overall patient well-being, to encourage individuals and their family members and caregivers to discuss hearing concerns, to raise awareness among older adults about age-related hearing loss, and to encourage referral when appropriate; and
- Develop and disseminate core competencies, curricula, and continuing education opportunities focused on hearing health care, particularly for primary care providers.

HEARING TECHNOLOGIES

The hearing technology landscape is ever-evolving and encompasses a wide range of products from traditional hearing aids regulated as medical devices to consumer-technology products and hearing assistive technologies. The broad spectrum of types and severity of hearing loss necessitates a wide range of technologies to meet each individual's needs while also meeting requirements for safety and interoperability with other technologies (e.g., cell phones, televisions, and emergency alert systems).

Hearing aids, currently the primary set of devices used for the treatment of hearing loss, are regulated by FDA as Class I or Class II medical devices. In the United States, as in many countries, hearing aid use is low compared to the high prevalence of hearing loss. Estimates of hearing aid use are that 67 to 86 percent of adults who might benefit from hearing aids do not use them. Among the numerous reasons given by individuals for not using hearing aids are the high cost; a lack of effectiveness; challenges with fit, comfort, and use; side effects such as rashes or itching; stigma; challenges with care and maintenance (e.g., changing batteries); and not recognizing that there is a need for hearing assistance.

FDA has established regulations for hearing aids, including quality system regulation requirements, mandatory labeling, and pre-purchase medi-

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cal evaluation (or a documented waiver). These regulations, along with a number of state regulations, have largely restricted the availability of hearing aids to being mainly dispensed through medical, audiology, or hearing instrument specialist venues. To date, proposals for over-the-counter (OTC) or direct-to-consumer hearing aids have not been approved. Consumer technology products, including personal sound amplification products (PSAPs), have been developed. PSAPs are not considered medical devices, and FDA guidance documents specify that PSAPs cannot be marketed in the United States as products intended for improving hearing loss.

The committee identified the need for FDA to create a category of OTC wearable hearing devices intended for use by individuals with mild or moderate hearing loss. These devices would need to meet specific safety and quality standards and labeling specifications. This regulatory approach would be similar to FDA's regulatory approach of creating separate device classification regulations for prescription eyeglasses and reading glasses (a parallel drawn here specifically to the regulatory approach and not the performance of the devices). A category of OTC wearable hearing devices could provide an additional, easy-to-access option with the potential for lower cost to meet the hearing needs of adults with mild or moderate hearing loss.

Individuals with hearing loss frequently use hearing aids with telecoils or other hearing assistive technologies that couple with cell phones and a range of other communications systems. Efforts are needed to standardize the interfaces and connection of hearing aids, hearing assistive technologies, and OTC wearable hearing devices with other types of technologies and communications systems.

Goal 7: ***Implement a New FDA Device Category for Over-the-Counter Wearable Hearing Devices***

Recommendation 7: The Food and Drug Administration (FDA) should establish a new category of over-the-counter (OTC) wearable hearing devices. This device classification would be separate from "hearing aids." OTC wearable hearing devices would be defined as wearable, OTC devices that can assist adults with mild to moderate hearing loss.

These devices would

- Explicitly be defined by FDA as intended for OTC sale;
- Be able to be marketed as devices that may assist with hearing loss and be sold OTC, by mail, or online; and would include mobile apps and associated wearable technologies intended to function as an OTC wearable hearing device for mild to moderate hearing loss;
- Be subject to regulatory requirements that would explicitly preempt current state laws and regulations for hearing aids and dispensing

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and preempt potential future state laws and regulations seeking to limit OTC access;
- Be exempt from 510(k) premarket review to the extent that the technology is not fundamentally different from air conduction hearing aids;
- Include thorough consumer labeling, including information on
  - frequency gain characteristics,
  - adequate directions for use,
  - communication challenges for which it may be helpful to seek professional consultation, and
  - medical situations, symptoms, or signs for which to consult with a physician;
- Meet minimum safety requirements and standards, including but not limited to
  - safe maximal sound output (e.g., upper limit for dB SPL [decibel of sound pressure level] peak output) at levels to be determined in conjunction with national experts in hearing conservation,
  - criteria for ear tips (e.g., maximum depth for insertion into the ear canal),
  - amplification via air conduction only (wireless technology for programming and connectivity should be permitted), and
  - American National Standards Institute or other voluntary standards for audio characteristics and performance as determined by FDA, as appropriate for this category;
- Be subject to quality system regulation (QSR) requirements, but be considered for exemption from certain QSR requirements as determined by FDA to be appropriate for this category; and
- Have the option to include accessory tests for self-assessment of mild to moderate hearing loss for purposes of selecting and fitting an OTC hearing device.

To further clarify the types of hearing technologies and their oversight and regulation:

- FDA should retain a guidance document on personal sound amplification products (PSAPs) that describes PSAPs as products that are not to be offered or promoted to address hearing loss and are subject to the electronic product provisions of the Federal Food, Drug, and Cosmetic Act through its 2009 PSAP guidance document or a revision of its 2013 PSAP draft guidance document. The PSAP guidance document would establish the distinction between PSAPs for normal hearing and the OTC wearable hearing device category for hearing loss.

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- The Consumer Product Safety Commission and the Federal Trade Commission should exercise their respective authorities in the regulation of consumer products marketed as PSAPs.

Currently, the settings on many hearing aids can only be adjusted by hearing health care professionals who have an agreement with a given manufacturer or distributor to sell that brand of hearing aid. Furthermore, many hearing health care professionals only sell one or a few different brands of hearing aids. A consumer who purchases a hearing aid from one hearing health care professional may find that the manufacturer or distributor has restricted access for adjusting the settings, and thus, the consumer may have to seek all additional programming services from the same distributor that originally sold him or her the product. An open platform approach would provide consumers with greater portability in their hearing health care including increasing the options for choosing their hearing health care professional. Consumers should be notified prior to the point of sale regarding the portability of hearing aid programming.

Greater public awareness and user-friendly instructions about the availability, portability, connectivity, and use of hearing aids and hearing assistive technologies, as well as comparable details on product features, are needed to enable informed decision making.

Goal 8: *Improve the Compatibility and Interoperability of Hearing Technologies with Communications Systems and the Transparency of Hearing Aid Programming*

Recommendation 8: The Federal Communications Commission, the Federal Trade Commission, the Food and Drug Administration, the National Institutes of Health, and other relevant federal agencies; the American National Standards Institute and other standards-setting organizations; manufacturers; and industry, professional, and consumer advocacy organizations should

- **develop standards that ensure that hearing aids and over-the-counter wearable hearing devices are compatible and interoperable with other technologies and communications systems;**
- **increase public awareness and consumer-friendly information on the availability, connectivity, and use of hearing aids and hearing assistive technologies; and**
- **develop and implement standards for an open platform approach for hearing aid programming that allows any hearing health care professional (or, as evolving technology allows, the device owner) to program the device settings, and require point-of-sale information about the programming features and programming portabil-**

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ity of hearing aids in order to enable more informed purchasing decisions.

IMPROVING AFFORDABILITY OF SERVICES AND TECHNOLOGIES

For many people cost can be a key factor in making health care decisions; for some people cost can be the driving factor, including determining whether to forego the care entirely. The cost of hearing health care includes the cost of services and technologies, and these costs may be incurred multiple times over a period of many years in order to maintain and replace hearing aids and other technologies, to continue to monitor hearing status, and to retain the benefit from auditory rehabilitation and other services. The average retail price for a pair of hearing aids in 2013 was $4,700 (bundled price including the costs of services).

In the hearing health care system that serves adults, nearly all costs are covered by the individual. Third-party payment for hearing health care is limited and many employers do not offer hearing health care insurance options. Currently Medicare Part B covers only diagnostic hearing tests; it does not cover other services or technologies, although some Medicare Advantage plans do. Only some state Medicaid programs offer hearing health care benefits, and several of those that do offer it have strict limitations on eligibility. Vocational rehabilitation programs offer a tremendous benefit for those with hearing loss who are seeking employment, but many individuals are not even aware that this program exists. Furthermore, young adults who have had hearing loss since childhood can face unique financial challenges in transitioning from programs that provided them with hearing aids and services as children and youth to receiving limited, if any, benefits as adults. Given the high numbers of Americans who have hearing loss and the high cost of hearing health care, changes to the cost of hearing health care are needed.

Goal 9: ***Improve Affordability of Hearing Health Care***

Recommendation 9: The Centers for Medicare & Medicaid Services (CMS), other relevant federal agencies, state Medicaid agencies, health insurance companies, employers, hearing health care providers, and vocational rehabilitation service agencies should improve hearing health care affordability for consumers by taking the following actions:

- **Hearing health care professionals should improve transparency in their fee structure by clearly itemizing the prices of technologies and related professional services to enable consumers to make more informed decisions;**

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- **CMS should evaluate options, including possible statutory or regulatory changes, in order to provide coverage so that treating hearing loss (e.g., assessment, services, and technologies, including hearing aids) is affordable for Medicare beneficiaries;**
- **CMS should examine pathways for enhancing access to assessment for and delivery of auditory rehabilitation services for Medicare beneficiaries, including reimbursement to audiologists for these services;**
- **State Medicaid agencies should evaluate options for providing coverage for treating hearing loss (e.g., assessment, services, and hearing aids and hearing assistive technologies as needed) for adult beneficiaries;**
- **Vocational rehabilitation agencies should raise public awareness about their services that enable adults to participate in the workforce, and they should collaborate with other programs in their respective state to raise this awareness;**
- **Hearing health care professionals and professional associations should increase their awareness and understanding of vocational rehabilitation programs and refer as appropriate; and**
- **Employers, private health insurance plans, and Medicare Advantage plans should evaluate options for providing their beneficiaries with affordable hearing health care insurance coverage.**

There are many unknowns in the hearing health care system. The comparative effectiveness of different care delivery models, the health and economic benefits of identifying and treating adult hearing loss early, and the potential for new technologies to disrupt and improve care are just a few of the areas where more research and evaluation are needed. An understanding of these issues will be necessary to continue making strides forward in improving accessibility to and affordability of hearing health care for all.

Goal 10: *Evaluate and Implement Innovative Models of Hearing Health Care to Improve Access, Quality, and Affordability*

Recommendation 10: The Centers for Medicare & Medicaid Services, the Patient-Centered Outcomes Research Institute, the Agency for Healthcare Research and Quality, the National Institutes of Health, the Centers for Disease Control and Prevention, the Health Resources & Services Administration, the Department of Defense, the Department of Veterans Affairs, researchers, and health care systems should prioritize and fund demonstration projects and studies, including randomized controlled trials, to improve the evidence base for current and innovative payment and delivery models for treating hearing loss.

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Specifically,

- Innovative models to be evaluated should include, but not be limited to, community health workers, telehealth, mobile health, retail clinics, and self-administered hearing health care. These projects and studies should include outcomes that are patient centered and assess value, comparative effectiveness, and cost effectiveness.
- Demonstration projects should evaluate the health impact of beneficiary direct access to audiologist-based hearing-related diagnostic services, specifically to clarify impact on hearing health care accessibility, safety, and the effectiveness of the medical home. This excludes direct access to audiologic testing for assessment of vestibular and balance disorders and dizziness, which require physician referral. Successful outcomes would provide evidence of effective communication and coordination of care with primary care providers within a model of integrated health care, and evidence of appropriate identification and referral for evaluation of medical conditions related to hearing loss and otologic disease.
- Models that are found to be most effective should be widely implemented.

ENGAGING A WIDER COMMUNITY: AWARENESS, EDUCATION, AND SUPPORT

Hearing plays a vital role in how individuals experience, interact with, and relate to the people and environment around them. Hearing is sometimes referred to as the "social sense" because of its function in developing and maintaining intimate relationships and social connections with family, friends, coworkers, and acquaintances. Supporting individuals with hearing loss requires adaptable solutions that span society—not just solutions within the context of a medical model that revolves around delivery of care and services in a health care setting. These solutions should reduce stigma and negative media perceptions and ensure that consumers understand their hearing test results and have the information they need to compare devices and products and to determine pathways to accessing hearing health care services.

People with hearing loss can experience a variety of challenges in terms of employment and the workplace, including obstacles related to finding employment, career development, promotion and career advancement, equitable compensation, and the balance between job demands and a sense of control and confidence in managing work-related situations. The Americans with Disabilities Act and related laws have provisions that improve access to hearing assistance in some settings, but it is not always adequate, and technology in public venues is not always functional.

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For people with hearing loss, the acoustics of the places where they live, work, learn, and socialize, the availability of hearing aids and hearing assistive technologies, and the ability to connect to other communications-enhancing systems may mean the difference between participating in and engaging with their community and feeling isolated. Raising public awareness of hearing health and of the range of options to facilitate communication is key and will require the collaboration of many groups. In addition, individuals, family members, employers, and communities can take actions to maximize hearing and facilitate communication for the benefit of all.

Goal 11: ***Improve Publicly Available Information on Hearing Health***

Recommendation 11: The National Institutes of Health, the Centers for Disease Control and Prevention, the Food and Drug Administration, the Department of Defense, the Department of Veterans Affairs, the Administration for Community Living, state public health agencies, other relevant government agencies, advocacy organizations, hearing health care professional associations, hearing technology manufacturers, hearing health care professionals, and media organizations should improve public information on hearing health and hearing-related technologies and services and promote public awareness about hearing and hearing health care.

Specifically,

- Strengthen publicly available, evidence-based information on hearing through multiple avenues (e.g., centralized websites, community-based services, local councils on aging) that explain hearing and related health concerns for adults of all health literacy levels, and address the breadth of services and technologies, including their comparative effectiveness and costs;
- Work through media, social marketing, and public education campaigns to disseminate and evaluate key evidence-based messages about hearing and hearing health and to promote accuracy in media portrayals;
- Implement and support a consumer-based metric to enable individuals to understand and track their communication abilities and hearing needs and a consumer-oriented format for audiogram and other hearing test results;
- Adopt standardized terminology across manufacturers about the features and capabilities of hearing aids and hearing assistive technologies so that consumers and hearing health care professionals can make easy, clear, unambiguous comparisons; and
- Develop and disseminate criteria that individuals and families can use to evaluate and compare hearing-related products and services.

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Goal 12: ***Promote Individual, Employer, Private-Sector, and Community-Based Actions to Support and Manage Hearing Health and Effective Communication***

Recommendation 12: Individuals, families, community-based organizations, advocacy organizations, employers, private-sector businesses, and government agencies (local, state, federal) should take actions to support and manage hearing health and foster environments that maximize hearing and communication for all individuals.

- Individuals and their family members can
  - Reduce exposure to noise that is at high volume levels for extended periods of time and use hearing protection as appropriate,
  - Be aware of and recognize difficulties in hearing and communication and seek information and care through the range of available services and technologies when appropriate, and
  - Seek out peer-support groups and other opportunities for those living with hearing loss, when appropriate.
- Community-based organizations, advocacy organizations, employers, private-sector businesses, and government agencies (local, state, federal) should promote work and community environments that are conducive to effective communication and that support individuals with hearing loss. Specifically, they should
  - Ensure compliance with the Americans with Disabilities Act and other related laws supporting people with disabilities and strive to exceed their minimum requirements and
  - Research and incorporate features into buildings and public spaces that improve hearing and communication (e.g., universal design, hearing assistive technologies).

OPPORTUNITIES FOR ACTION

With the positive changes in patient engagement and empowerment occurring throughout the health care system and with the rapid pace of evolution in technology, it is an opportune time to explore and implement changes in the way hearing itself is viewed and the way hearing health care as a whole is delivered, valued, and evaluated. With the benefit of key institutional, technological, and regulatory changes to improve access and affordability, hearing health care is poised to undergo advances that will help individuals with hearing loss and their families find and fully utilize the appropriate, affordable, and high-quality services, technologies, and support they need. Fully developing the array of options for adults of all ages and with all levels of hearing loss (mild, moderate, severe, and pro-

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found) requires that hearing loss be recognized as a public health concern that demands multidisciplinary and collaborative efforts by all stakeholders working together with the common goal to improve hearing and communication abilities for individuals and across the population (see Box S-1).

Box S-1 KEY MESSAGES FOR IMPROVING ACCESSIBILITY AND AFFORDABILITY OF HEARING HEALTH CARE FOR ADULTS[a]

Findings:

- Hearing is vital to communications, health, function, and quality of life. Individuals need to be alert to their hearing health, as hearing loss can range from mild to profound and tends to increase with age, onset can be gradual, and each individual's hearing needs are unique.
- Hearing health care involves a wide range of services and technologies with ever-expanding and evolving options; however, many people do not have access to these options or cannot afford them.
- Hearing loss is a public health and societal concern; engagement and action are needed across the spectrum of relevant stakeholders, including individuals and families, professionals, nonprofit organizations, industries, government, and the health care community.

Recommended Actions:

- Improve population-based information on hearing loss and hearing health care
- Develop and promote measures to assess and improve quality of hearing health care services
- Remove FDA regulation for medical evaluation or waiver of that evaluation prior to hearing aid purchase
- Empower consumers and patients in their use of hearing health care
- Improve access to hearing health care for underserved and vulnerable populations
- Promote hearing health care in wellness and medical visits for those with concerns about their hearing
- Implement a new FDA device category for over-the-counter wearable hearing devices
- Improve the compatibility and interoperability of hearing technologies with communications systems and the transparency of hearing aid programming
- Improve affordability of hearing health care by actions across federal, state, and private sectors
- Evaluate and implement innovative models of hearing health care to improve access, quality, and affordability
- Improve publicly available information on hearing health
- Promote individual, employer, private-sector, and community-based actions to support and manage hearing health and effective communication

[a]All findings and recommendations are of equal importance and are not prioritized.

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1

Introduction

The loss of hearing—be it gradual or acute, mild or severe, present since birth or acquired in older age—can have significant effects on one's communication abilities, quality of life, social participation, and health. Despite this, many people with hearing loss do not seek or receive hearing health care. The reasons are numerous, complex, and often interconnected. For some, hearing health care is not affordable. For others, the appropriate services are difficult to access, or individuals do not know how or where to access them. Others may not want to deal with the stigma that they and society may associate with needing hearing health care and obtaining that care. Still others do not recognize they need hearing health care, as hearing loss is an invisible health condition that often worsens gradually over time. Finally, others do not believe that anything can be done to help them or feel that the perceived benefit or value of the service or technology will not be significant enough to overcome the perceived barriers to access.

In the United States, an estimated 30 million individuals (12.7 percent of Americans ages 12 years or older) have hearing loss.[1] Globally, hearing loss has been identified as the fifth leading cause of years lived with disability (Global Burden of Disease Study 2013 Collaborators, 2015). The unmet need for hearing health care is high. Estimates of hearing aid use are that 67 to 86 percent of adults who might benefit from hearing aids do not use

[1]The study, based on data from the National Health and Nutrition Examination Survey, found that these estimates of bilateral hearing loss increase to 48.1 million Americans (20.3 percent) when those with unilateral hearing loss were included (Lin et al., 2011).

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them.[2] Data on the use of hearing health care are difficult to obtain given the current structure of the hearing health care model.

Successful delivery of hearing health care enables individuals with hearing loss to have the freedom to communicate in their environments in ways that are culturally appropriate for them and that preserve their dignity and function. Key goals in improving hearing health care are that it be affordable, accessible, effective, accountable, person centered, person directed, and transparent while being supported by a larger society that prioritizes communication, reduces stigma, and provides social and environmental supports for hearing health. Embracing such a system goes well beyond the medical model and acknowledges and demonstrates respect for individuals' needs, concerns, and goals.

SCOPE OF THE STUDY AND STUDY PROCESS

This report examines the hearing health care system, with a focus on nonsurgical technologies and services, and offers recommendations for improving the access to, the affordability of, and the quality of hearing health care for adults of all ages.

To address the study's statement of task (see Box 1-1), the National Academies of Sciences, Engineering, and Medicine appointed a 17-member committee with expertise in hearing health care services, audiology, otology, hearing loss advocacy, primary care, geriatrics, health economics, technology policy and law, and epidemiology. Brief biographies for each of the 17 members of the committee can be found in Appendix B. The study was sponsored by (alphabetically) the Centers for Disease Control and Prevention, the Department of Defense, the Department of Veterans Affairs, the Food and Drug Administration, the Hearing Loss Association of America, the National Institute on Aging, and the National Institute on Deafness and Other Communication Disorders.

The committee held six meetings during the course of its work; the first four meetings included public sessions with speakers providing their expertise on a variety of topics relevant to the statement of task (see Appendix A). The committee also held a public conference call with invited speakers. In addition, the committee gathered information from the scientific literature and reviewed information submitted by members of the public and from various agencies and organizations.

[2] These estimates are based on studies of hearing aid use in older Americans. Bainbridge and Ramachandran (2014) reported that 33.1 percent of potential hearing aid candidates (70 years and older) reported using hearing aids. Chien and Lin (2012) reported that 14.2 percent of Americans with hearing loss (50 years and older) use hearing aids.

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Box 1-1 STATEMENT OF TASK

An ad hoc committee will address how to improve accessibility to and affordability of hearing health care for adults, excluding surgical devices and related services. Specifically, the committee will

- Provide a contextual background addressing the importance of hearing to individual and societal health, productivity, and engagement. This may include issues such as isolation, social connectivity and well-being, and economic productivity.
- Address federal regulations for hearing aid dispensing. The current federal regulations include the requirement for a medical evaluation by a licensed physician (or a signed waiver of this requirement) prior to the dispensing of a hearing aid in order to promptly identify treatable medical conditions that cause hearing loss.
  - Do the current regulations provide a clinically meaningful benefit to adults with hearing loss?
  - If so, does this benefit outweigh any current barriers to accessibility or affordability that may be associated with the current regulations?
  - What should be the required federal regulatory paradigm for the dispensing of hearing aids?
- Address hearing health care access and affordability:
  - How can affordability of hearing health care, including consideration of third-party payment and alternate hearing assistive technologies and services, be improved?
  - How can current delivery models (system and provider) be utilized or modified to improve access to hearing health care?
  - What innovative health care delivery approaches (e.g., telehealth, mobile health, team-based care) can be used to increase both the access to and affordability of hearing health care?
  - What are the specific challenges for select populations (e.g., older adults, transitioning young adults)?
- Provide recommendations aimed both at solutions that are implementable and sustainable in the short term as well as those that may require a longer timeframe for implementation. In the circumstance where robust evidence is lacking or absent, the committee is encouraged to make recommendations based on sound scientific reasoning in the context of the current health care environment.

  The committee will not address pharmacological therapies for hearing health care.

OVERVIEW OF HEARING AND HEARING LOSS

Sound is produced by waves of air pressure that vary in frequency, amplitude, and direction. When working without impairment, the human auditory system—through a series of complex processes that are carried out in the ear and the brain—can quickly detect, distinguish, and interpret complex mixtures of sound waves from spoken, musical, and other types of audible communications (see Box 1-2).

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Box 1-2 BASIC PHYSIOLOGY OF HEARING

The ear, the primary auditory sensory organ, converts sound pressure in the air into neural-electrical signals that are interpreted by the brain as speech, music, etc. The three parts of the ear—outer, middle, and inner—have different roles in this process. The pinna of the outer ear collects and focuses sound waves into the external auditory canal. The sound waves travel through the external auditory canal (approximately 2.5 cm) to reach the ear drum (tympanic membrane). The sound waves cause the ear drum to vibrate. The middle ear is an air-filled cavity in which the vibrations of the eardrum are amplified by three tiny bones, the malleus (hammer), incus (anvil), and stapes (stirrup), collectively known as the ossicles. Thus, the sound waves generated by this process are transmitted as pressure waves to the inner ear.

The inner ear plays a role in the vestibular system (vital to balance and equilibrium) as well as in hearing. The inner ear's cochlea consists of fluid compartments with sensorineural hair cells that translate the vibrations generated by sound into electrical signals, which activate fibers of the eighth (auditory) cranial nerve, which in turn transmits signals to the brain, where the signals are processed by the auditory cortex into understandable sound.

SOURCES: Conners, 2003; IOM, 2004; NIDCD, 2014, 2015.

Two dimensions of sound are its frequency (roughly analogous to *pitch*, measured in hertz [Hz]) and its intensity (the main determinant of the loudness of the sound measured in decibels [dB]) (see Table 1-1). Typically, humans can hear sounds from low to high pitch with frequencies between 20 and 20,000 Hz and at levels as low as 0 dB hearing level[3] (dB HL). At high levels of intensity (and depending on the duration of the sound and proximity to the source) there is a risk of permanent or temporary pain or damage to hearing ability (CDC, 2015a). Results of a hearing test are shown in an audiogram, which is a graph that shows the lowest levels in each ear that an individual is able to hear sounds at each of several different frequencies. Other tests of hearing may also be conducted to differentiate between various causes of hearing loss and to better understand an individual's communication challenges and needs (see Chapter 3).

The World Health Organization defines hearing loss as "not able to hear as well as someone with normal hearing—hearing thresholds of 25 dB HL or better in both ears" (WHO, 2015). The threshold is the minimum sound level at which an individual can detect any sound. Hearing loss is often cat-

[3]The term "dB hearing level" (db HL) is a unit of sound used for pure tone audiograms and is referenced to levels of normal hearing specified in national and international standards. Decibel measurements may also be provided using sound pressure level measures, a logarithmic measure of sound pressure relative to a reference value.

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TABLE 1-1
Examples of Sound Frequencies and Intensities

Sound Frequencies (measured in hertz [Hz])	
250 to 1,000	Vowel sounds, such as the short "o" in the word "hot"
1,500 to 6,000	Consonant sounds, such as "s," "h," and "f"
20 to 20,000	Typical range of human hearing
Sound Intensities (measured in decibels [dB])	
10	Normal breathing
25 to 30	Whisper
45 to 60	Typical talking
85	Lawnmower
90	Sounds can become uncomfortable to hear
110 to 140	Rock concert (varies)
120 or louder	Sounds may be painful
0 to 140	Typical range of human hearing

SOURCES: CDC, 2015a; NIDCD, 2010.

egorized as mild, moderate, severe, or profound. Individuals with mild to moderate hearing loss may develop strategies to improve communication, such as facing the speaker or speech (lip) reading, and they may use hearing aids and hearing assistive technologies. Hearing aids are the most widely used intervention for adults with mild to severe sensorineural hearing loss. People with severe to profound hearing loss may be candidates for cochlear implants (a surgical intervention not addressed by this committee).

The committee focused on hearing loss, the major population-based hearing concern in adults, but recognized that there are a number of other conditions, such as tinnitus, which affect hearing health. Many of the recommendations in this report will be of benefit to the care of a range of hearing-related conditions.

Causes and Types of Hearing Loss

Hearing loss can be present from birth or can have an onset at any age. The causes of hearing loss are often categorized based on whether they are congenital or acquired. Congenital causes are those that lead to hearing loss or deafness at birth or soon thereafter. Examples of congenital causes of hearing loss or deafness are genetic syndromes; maternal rubella, syphilis,

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or certain other infections during pregnancy; low birth weight; lack of oxygen at birth; certain drugs used during pregnancy (e.g., aminoglycosides, cytotoxic drugs, antimalarial drugs, and diuretics); and severe jaundice in the neonatal period (birth to 1 month). Genetic factors are responsible for an estimated 50 to 60 percent of childhood hearing loss in developed countries (Morton and Nance, 2006). Universal newborn hearing screening has been the standard of care throughout the United States since the early 1990s (CDC, 2015b; Morton and Nance, 2006).

Acquired hearing loss may be sudden or gradual in onset and may be caused by meningitis; measles and mumps; otosclerosis (progressive fusion of the ossicles of the middle ear); chronic ear infections; autoimmune or inflammatory disorders; fluid or infection in the ear (otitis media); tympanic membrane (ear drum) thickening or perforations; the use of some antibiotic, antimalarial, or cancer chemotherapeutic medications; some head injuries or other trauma; long-term exposure to excessive noise; cerumen (ear wax) or foreign bodies blocking the ear canal; or aging (presbycusis) (WHO, 2015). Some of these conditions (including otitis media, ear canal blockages, and some forms of otosclerosis) can result in conductive hearing loss, which affects the outer or middle ear, and are often medically or surgically treated. Sudden or fluctuating forms of sensorineural hearing loss may improve with medical or surgical treatment. However, most sensorineural hearing loss is the result of permanent changes to the cochlea, auditory nerve, or central auditory nervous system and cannot be repaired using current medical or surgical interventions. Thus, the most common interventions for sensorineural hearing loss are those that amplify sound to provide sufficient audibility of speech and other sounds. These interventions may include technologies, such as hearing aids and hearing assistive technologies, and auditory rehabilitation services, including auditory and speech perception, speech (lip) reading training, and training to improve communication and coping strategies.

Age-related hearing loss (presbycusis) has been documented in many mammalian species and is characterized in humans by increased hearing thresholds, the impaired processing of higher-level sounds (including reduced frequency and temporal resolution), and difficulty understanding speech, especially in noisy or complex listening environments (Yamasoba et al., 2013). The primary pathology of the process is unknown, but age-related hearing loss is a cumulative disorder which may involve both intrinsic and extrinsic factors, including genetic mutations, the degeneration of cellular structures in the cochlear lateral wall, age-related loss of auditory nerve fibers, and neural changes in the brain affecting signal processing and interpretation. All of these affect the ability of the inner ear and higher neural centers to process acoustic signals and effectively separate the primary speech signal from interfering speech and noise. Regardless

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of which auditory pathways are affected, the functional consequences will likely include an inability to hear some sounds (particularly high-frequency sounds); an inability to understand subtle differences in spoken words (e.g., "desk" and "debt"), especially in noisy environments; a poorer ability to process acoustic information quickly; and difficulty identifying sources of sound (Roth, 2015; Yamasoba et al., 2013). Generally, individuals present with symmetrical loss which is more apparent with high-frequency sounds and which is commonly more severe in men than in women (Van Eyken et al., 2007; see Chapter 2). Age-related hearing loss is very common, but its rate varies across populations (see Chapter 2), and some people retain excellent hearing well into late ages. There is strong evidence that genetic susceptibility contributes to the variation (Cruickshanks et al., 2010). The etiology of age-related hearing loss is not known, but there is emerging evidence that many potentially modifiable factors (e.g., smoking, adiposity, and vascular disease) are associated with the risk of developing age-related hearing loss (see Chapter 2).

DEFINITIONS AND TERMINOLOGY

As it began its work, the committee recognized the need to determine and then convey the definitions it was using for the key terms in its charge ("affordability" and "accessibility") as well as for various hearing-related terms used in the report. This report uses the term "hearing health care" to encompass the range of services (e.g., diagnosis and evaluation, auditory rehabilitation; see Chapter 3) and hearing technologies (hearing aids and hearing assistive technologies; see Chapter 4) relevant to hearing loss. The committee viewed hearing health care through the social-ecological model (discussed later in this chapter) to emphasize the multiple levels of support and action needed throughout society to promote hearing and communication and reduce hearing loss and its effects. For the purposes of this report the term "hearing health care professionals" is used broadly to encompass those who work in hearing health care (including audiologists, hearing instrument specialists, and otolaryngologists). The term is used throughout the report primarily for ease—that is, one collective term rather than listing each group repeatedly throughout the report—and is not meant to imply any other meaning outside of the report context. The committee also notes that its use of the phrase "mild to moderate hearing loss" is inclusive of the spectrum from mild through moderate hearing loss.

Defining Affordability and Accessibility

Because the committee's charge focused on improving the affordability and accessibility of hearing health care, clear definitions of these two

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terms are critical to the discussions in this report. Access has been defined as "the timely use of personal health services to achieve the best possible health outcomes" (IOM, 1993, p. 33). This definition focuses on both the use of appropriate health services and on improved health outcomes from such services. The 1993 Institute of Medicine (IOM) report goes on to state, "The test of equity of access involves determining whether there are systematic differences in use and outcome among groups in society and whether these differences are the result of financial or other barriers to care" (IOM, 1993, p. 33). Thus, affordability is a part of access. If health care—be it determining the need for health care, visits to the health care provider, or the prescribed treatment—is too expensive for the individuals affected, it will not be accessible. The definition of access used by Healthy People 2020 incorporates four components: reimbursement coverage, services, timeliness, and workforce (HHS, 2015). As will be discussed in this report, if hearing health care (services and technologies) is to become truly accessible, it will be vital to address the geographic, language, and cost barriers to such care.

It is challenging to define affordability in the context of a specific product or service. *Merriam-Webster's Dictionary* defines *afford* as "to be able to pay for (something); to be able to do (something) without having problems or being seriously harmed" and *affordable* as being "within someone's ability to pay; reasonably priced" (Merriam-Webster, 2015). Affordability at the individual or family level thus largely depends on household income versus necessary expenditures. For example, the Department of Housing and Urban Development notes that families who "pay more than 30 percent of their income for housing are considered cost burdened and may have difficulty affording necessities such as food, clothing, transportation and medical care" (HUD, 2015). An estimated 12 million U.S. households (renter and homeowner) pay more than 50 percent of their annual income for housing (HUD, 2015).

As discussed in Chapters 4 and 5, the price of hearing aids (often bundled with the price for hearing health care services) have often been cited as deterrents to purchase and access, and because there is a general lack of options for hearing health care coverage for most adults (e.g., private insurance, Medicare, Medicaid) these products and services are not affordable for many potential users. The median household income in the United States was estimated by the U.S. Census Bureau to be $53,657 in 2014, with 33.7 percent of all American households having an annual income of less than $35,000 (DeNavas-Walt and Proctor, 2015). Among Medicare beneficiaries, half had an annual income below $24,150 in 2014 (Jacobson et al., 2015). The decision of whether to purchase hearing aids and the associated services (often the initial price is several thousand dollars or more, plus there are ongoing maintenance and, eventually, replacement costs; see

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Chapter 5) must compete with decisions about whether to purchase other necessities. Thus, many individuals must make choices about what will fit into their budget and may forego hearing health care to meet other needs.

Hearing-Related Terminology

The hearing abilities of individuals can vary widely across the life span. Some individuals are born without the ability to hear any sound, while others may experience hearing loss either acutely or gradually, with the extent of the hearing loss ranging from mild to profound. Thus, appropriately defining and categorizing those various abilities and their effects on communication can be a challenge.

Individuals who are considered to be deaf generally have profound loss of hearing at most or all frequencies. The term "deaf" when used with a capital "d," *Deaf*, often is used to refer to a community and culture of individuals who share a language (American Sign Language) and cultural values and priorities (NAD, 2015; Padden and Humphries, 1988). How individuals choose to refer to themselves is often influenced by the type and nature of the individual's hearing challenges, age of onset of hearing loss, preferred communication methods, personal preferences, and support community (NAD, 2015).

The term "hearing impaired" has been used extensively, especially by professionals who use it as a single term to cover all types and degrees of hearing loss, but for the individual with hearing loss the term may bring with it the connotation of focusing on limitations and functional challenges (NAD, 2015). Although the term "hearing loss" is generally used to indicate hearing function that is poorer than normal in the population, the term may not apply to individuals who were born with some degree of hearing difficulties that remain unchanged over time, as they did not lose an ability they never had (NAD, 2015). The term "hard of hearing" has also been used, often as a way of differentiating the degree of hearing loss from deafness (e.g., "deaf or hard of hearing"), but the committee did not find it to be descriptive of the condition.

This report makes every attempt to use hearing-related terms in a manner that is conscientious and respectful of all people who are touched by hearing-related challenges. The committee's task (see Box 1-1) is to focus on adults who use nonsurgical methods to address their hearing conditions; therefore, the committee chose to primarily use the term "hearing loss," while acknowledging that some people who use hearing aids or other nonsurgical services and technologies have had hearing difficulties since birth. The report addresses issues of importance to individuals with deafness and to the Deaf community; however, deafness is not the focus of this report.

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Another question of terminology relates to the different roles people are in when they address hearing loss and interact with hearing health care professionals. A person with hearing loss may at various times be a *patient* seeking care and treatment options, a *consumer* making purchasing decisions, or an *individual* participating in his or her community and seeking the best ways to meet his or her communication needs. A person can be in one, two, or all three of these roles at the same time. The committee uses the terms interchangeably to some extent, while trying to use the terms as appropriately as possible in a given context.

WHY FOCUS ON ACCESSIBILITY AND AFFORDABILITY OF HEARING HEALTH CARE NOW?

Hearing health care is in the midst of many of the same major challenges that the health care system, public health, and society in general are now facing. The following overview briefly explores several reasons why there is a critical need for a comprehensive study of hearing health care focused on improving its accessibility and affordability. Many of the issues discussed here are examined in greater depth in the chapters that follow.

Changing Demographics: Intersection of Hearing Loss and Aging

In the United States, as in many other countries, the median age of the population is increasing, and older individuals are living increasingly longer, during which time aging-associated chronic conditions—and, often, multiple such conditions in a given individual—may emerge and challenge health and social systems (Halter et al., 2009). As a result, it is likely that larger numbers of people will have hearing loss and require and seek care in the coming years. The demographic composition of the U.S. population has been influenced by several factors, including increased life expectancy, improved health care and nutrition, and changes in birth and mortality rates. In 1900, 4.1 percent of the U.S. population (just more than 3 million people) was 65 years or older; by 2012 that age group accounted for 13.7 percent of the population (more than 40 million people); and it is projected that by 2060, individuals 65 years and older will constitute 24 percent of the U.S. population (see Figure 1-1; ACL, 2016; Colby and Ortman, 2015; West et al., 2014). Similar aging trends are occurring around the world (NIA and WHO, 2011).

Hearing loss is a common chronic disability in older adults, can escalate with age, especially in those over 80 years of age (see Chapter 2), and its effects on verbal communication and, as a consequence, on social interactions and functional limitations have serious public health implications. Limitations in activity associated with chronic conditions, including hearing

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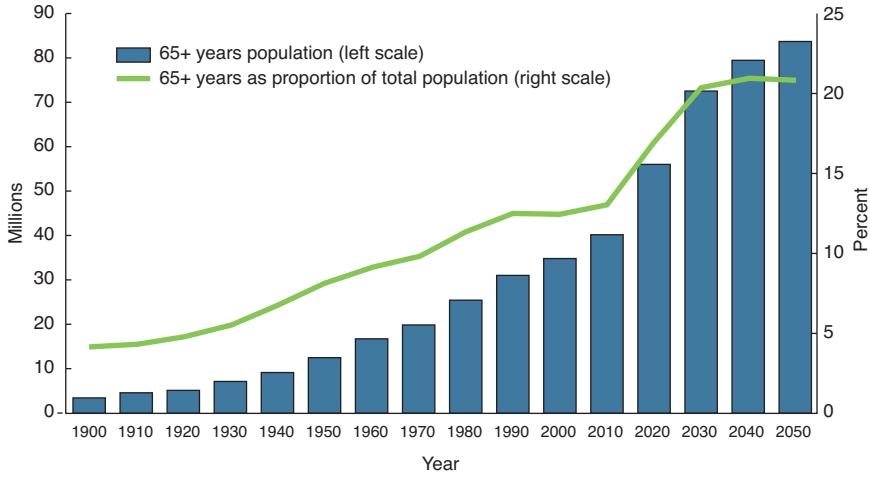

FIGURE 1-1 Population of adults ages 65 years and older in the United States, 1900–2050. SOURCE: West et al., 2014.

loss, affect greater numbers of older adults as age increases, and the functional impact of hearing loss may be magnified by the coexistence of other such conditions. As the population ages, more people may have moderate to severe hearing loss, which could require more services and potentially more complex services.

Recognizing Hearing Loss as a Public Health Priority and a Societal Responsibility

Long seen as an issue for individuals (and to some extent their families and friends), there is a growing realization that hearing loss is a significant public health concern that is influenced and affected by decisions and actions at multiple levels of society. Loss of hearing may lead to a reduction in quality of life due to communication challenges that can affect interactions with others and that have the potential for effects on cognition, behavior, and other aspects of health (see Chapter 2). However, the application of successful strategies to overcome the functional challenges of hearing loss and enhance communication capabilities can increase an individual's participation in meaningful activities (see more on the *International Classification of Functioning, Disability and Health* in Chapter 3).

Centered on the individual, the social-ecological model (see Figure 1-2) illustrates the relationships and interactions among personal and environmental factors across society that play a role in hearing health: indi-

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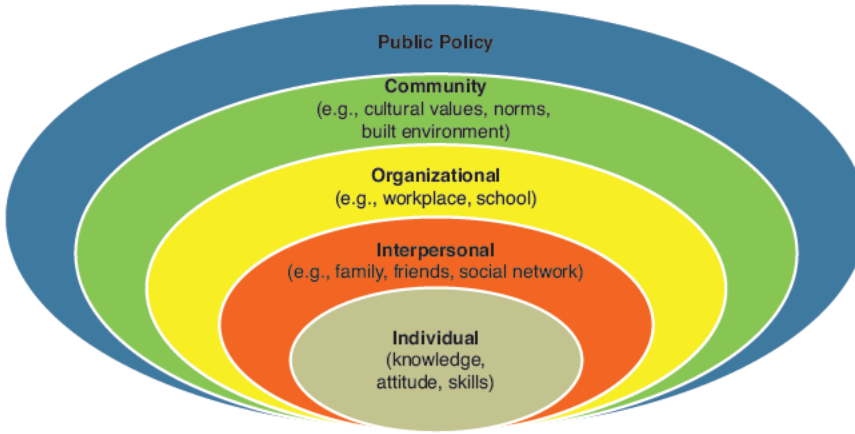

FIGURE 1-2 Social-ecological model.
SOURCE: NIH, 2016. Reprinted with permission.

vidual; family, friends, and other interpersonal relationships (including peer-support groups); organizational (including supports through school, post-secondary education, and workplace); community (ranging from the built environment and acoustics in public spaces to destigmatizing hearing loss); and public policy and regulation (regulations on technologies or policies regarding health insurance coverage or other issues).

The social-ecological model has been more fully developed for other health issues, such as obesity prevention, where factors outside of the individual (e.g., available foods, access to opportunities for physical activity, and public policies on school lunches) play a role in choices, behaviors, and actions (CDC, 2013; IOM, 2005). The relevance of this model to hearing loss can be found in the breadth of responsibilities and actions that encompass successful hearing health care. The committee emphasizes the social-ecological model throughout this report, with particular attention in Chapter 6 to the multiple levels of supports and actions involved in hearing health care.

Rapidly Changing Technologies

The pace of technology change and adoption is accelerating at ever-increasing rates (McGrath, 2013). As discussed in Chapter 4, hearing-related technologies are rapidly evolving and moving toward more wearable and integrated systems. Recently, the President's Council of Advisors on Science and Technology released a report on devices and products for older

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adults who have mild to moderate hearing loss in which they noted "the unnecessarily high price of hearing aids for individuals and the conspicuously slow pace of innovation by their manufacturers compared with other consumer electronics" (PCAST, 2015, p. 9; also see Chapter 4).

"Hearables" is a relatively new term used to denote a wide range of hearing- and ear-based technologies with various and often multiple purposes which include communication, entertainment, fitness tracking, and physiologic measures in addition to enhancing hearing capabilities. Technologies specific to hearing include hearing aids as well as personal sound amplification products and hearing assistive technologies that connect the user with the television, the telephone, and public sound systems. It is critical that all sectors of hearing health care are fully engaged in these advances and are fully utilizing effective technologies to improve hearing and communication and to assure interoperability and connectivity. These new opportunities and technologies necessitate a call for a critical review of current policies and approaches and increased attention to fully informing the public, particularly those with hearing loss, about the range and capabilities of the options.

Changes in Health Care Paradigms

The hearing health care system is largely unknown to or difficult to penetrate by the general public. Routes for accessing hearing health care go through both business-driven and health care-driven pathways, with sparse information available on the appropriate pathways for individuals to gain access to the services and technologies best suited to meet their needs (see Chapter 3). Health care in general is also undergoing transformations that can propel hearing health care forward, and priorities have been identified which can be applied and incorporated into hearing health care (see Box 1-3).

Efforts are focused on patient-centered care that is evidence-based with attention to quality, safety, and value. Team-based care is also a priority, with teams that include the patient and family in addition to the relevant health care professionals. Principles identified as key to team-based health care are shared goals, clear roles, mutual trust, effective communication, and measurable processes and outcomes in a continuous loop of improvement (Mitchell et al., 2012). Additionally, emphasis on a learning health care system will be of great benefit to hearing health care. As defined, a learning health care system is "one in which science and informatics, patient–clinician partnerships, incentives, and culture are aligned to promote and enable continuous and real-time improvement in both the effectiveness and efficiency of care" (IOM, 2013, p. 17).

Health care encompasses a broad network with widely varying resources and skills applied to a vast array of health concerns. Neverthe-

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Box 1-3 HEALTH CARE GOALS

Health care should be

- *Safe*—avoiding injuries to patients from the care that is intended to help them.
- *Effective*—providing services based on scientific knowledge to all who could benefit and refraining from providing services to those not likely to benefit (avoiding underuse and overuse, respectively).
- *Patient centered*—providing care that is respectful of and responsive to individual patient preferences, needs, and values and ensuring that patient values guide all clinical decisions.
- *Timely*—reducing waits and sometimes harmful delays for both those who receive and those who give care.
- *Efficient*—avoiding waste, including waste of equipment, supplies, ideas, and energy.
- *Equitable*—providing care that does not vary in quality because of personal characteristics such as gender, ethnicity, geographic location, and socioeconomic status.

SOURCE: IOM, 2001.

less, progress is being made and efforts put forward that coordinate and integrate hearing health care into the evolving broader health care system. Hearing health care, throughout all of its diverse professional and patient care pathways, offers a wealth of opportunities for fully engaging in changing the paradigms and embracing the quality measures and actions that can improve care for individuals with hearing loss. Opportunities include the exploration and evaluation of diverse delivery and payment systems (see Chapters 3 and 5).

GUIDING PRINCIPLES

In examining the complex issues around hearing loss in adults and hearing health care, the committee developed a set of principles that helped shape its work.

- *Prioritize the needs of individuals with hearing loss*—The committee's priority was concern for individuals with hearing loss and, in particular, on ensuring that these individuals have opportunities for accessible and affordable services and technologies to meet their communication needs. Accordingly, the committee's work focused solely on what it deemed best for consumers/patients/individuals and not on meeting the needs of specific professions or industries.

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- *Emphasize hearing as a public health concern with societal responsibilities and effects*—Actions needed to improve hearing and promote communications for individuals with hearing loss require a public health approach that involves efforts across multiple levels of communities and society. The impacts of hearing loss on individuals, families, and society require broad attention to this public health issue, including reducing the stigma often associated with hearing loss. Efforts to improve hearing environments and promote communication can yield benefits for all members of society.
- *Move toward equity and transparency*—Opportunities for improving hearing health care will require that services and products are available to those who need them across the socioeconomic and geographic spectra. Options for selecting those services and products need to be provided in transparent and itemized formats that meet the various health literacy levels of all adults and with data that compare effectiveness based on outcomes and cost using peer-reviewed research.
- *Recognize that hearing loss may require a range of solutions*—No one solution will work for everyone with hearing loss, and therefore the committee emphasizes the range of needs, solutions, and opportunities across the various levels of severity in hearing loss, types of hearing loss, and ways to mitigate hearing loss, maximize hearing, and improve the hearing environment. The goal is a person-centered, person-directed continuum of care across the life span.
- *Improve outcomes with a focus on value, quality, and safety*—Changes are occurring at a rapid rate in hearing health care technologies and in the delivery of hearing health care services, and actions will be required to ensure that these efforts are coordinated, safe, evaluated, and focused on best practices that provide value in improving hearing and communication capabilities for individuals with hearing loss.
- *Work toward an integrated approach that provides options*—The committee provides an approach to hearing health care that integrates services and technologies as appropriate to meet each person's needs. Accessibility, affordability, and awareness are some of the key barriers that contribute to individuals not being able to optimally use hearing health care. Hearing aids and hearing assistive technologies are tools that benefit from careful and unbiased diagnostic and functional assessments of an individual's needs and that can be supplemented by auditory rehabilitation services as appropriate. Creating a variety of options can help enable individuals with hearing loss overcome the specific barriers they face.

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ORGANIZATION OF THIS REPORT

This report covers the breadth of the committee's statement of task. Chapter 2 focuses on population-based studies and provides an overview of the evidence on the extent and impact of hearing loss. The focus of Chapter 3 is on hearing health care services, with overviews of the range of hearing health care professionals and the services they provide and with particular attention paid to improving the accessibility of hearing health care services. Hearing technologies are the area of emphasis in Chapter 4, which includes details on current regulations and the committee's recommendations for change. The affordability of hearing health care (technologies and services) is examined in Chapter 5, with discussions of current coverage and exploration of the opportunities to make hearing health care more affordable. Chapter 6 explores issues spanning multiple areas of the community and society that affect access to and use of hearing health care. The report concludes in Chapter 7 with a call to action on hearing health care that will require efforts and collaborations across the range of involved parties, including individuals; families; health care professionals and organizations; employers; insurers; hearing technology industries; government agencies at the local, state, and federal levels; and the general public.

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2

Hearing Loss: Extent, Impact, and Research Needs

Hearing loss may develop at any time during the life course. The onset can be sudden or gradual, and one or both ears can be affected. Hearing loss can result from a variety of causes (e.g., trauma, infection, genetic syndromes, aging, or excessive noise exposure), and the pathological changes may occur in one or more regions of the auditory system. Although some hearing loss might be temporary or treatable using medical or surgical methods, most hearing loss in adults is permanent or slowly progressive. When evaluating the burden of hearing loss in a population, it is important to recognize the heterogeneity in the nature and severity of hearing loss. Individuals also vary in the extent to which auditory rehabilitation, hearing aids, and hearing assistive technologies can improve their communication function (see Chapters 3 and 4). Lessening the effects of hearing loss and improving health and function are the goals of this report's discussions. This chapter begins with an overview of data on the incidence and prevalence of hearing loss in adults and a discussion of the factors associated with the risk for hearing loss in adults and methods for prevention. Subsequent sections discuss the impact of hearing loss on individuals, their families, and society. The chapter ends with the committee's recommendations for next steps in this area.

To develop a full understanding of the public health burden of hearing loss in adults in the United States, the committee gathered information from multiple sources in order to determine the extent to which the U.S. population is affected by hearing loss and the impact of those losses. The committee conducted extensive literature searches, with a focus primarily on articles that relied on audiometric measures of hearing; studies using self-

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report were included only when they were deemed essential. Cross-sectional epidemiological studies that measure the sensitivity of the auditory system at only one point in time rarely distinguish the pattern of onset or subtype of hearing loss. Because childhood onset of hearing loss as well as most types of acquired hearing loss in adolescence and the early adult years are relatively rare, and because the most common type of hearing loss among aging adults is a slowly developing, symmetrical sensorineural hearing loss called age-related hearing loss or presbycusis, population-based cohorts primarily focus on age-related hearing loss.

Box 2-1 OVERVIEW OF SELECTED STUDIES

Baltimore Longitudinal Study of Aging (1958 to ongoing)—This longitudinal study of adults (531 individuals in the Baltimore–Washington Metropolitan area at baseline) assesses physical and cognitive changes associated with aging (Brant et al., 1996).

Beaver Dam Offspring Study (2005 to ongoing)—The middle-aged adult offspring of participants in the Epidemiology of Hearing Loss Study (described below) were invited to participate in this study which focuses on age-related sensory impairments. The baseline study (2005–2008) had 3,285 participants (Nash et al., 2011). Audiologic assessments were conducted in 2005–2008 with 5-year follow-up in 2010–2013 (Fischer et al., 2015).

Blue Mountains Hearing Study (1997 to 2004)—This population-based study of age-related hearing loss was conducted with a cohort of adults aged 49 years or older living west of Sydney, Australia. From 1997 to 1999, 2,956 individuals underwent audiometric testing, and of those 870 without hearing loss and 439 participants with hearing loss were reexamined from 2002 to 2004 (Mitchell et al., 2011).

Epidemiology of Hearing Loss Study (1993 to ongoing)—Population-based sample of residents of Beaver Dam, Wisconsin, who were 43–84 years of age in 1987–1988. Audiometric examinations to measure the prevalence of hearing loss are ongoing and were conducted in 1993–1995 (n = 3,753), 1998–2000 (n = 2,800), 2003–2005 (n = 2,395), and 2009–2010 (n = 1,812) (Cruickshanks et al., 1998, 2003, 2010a, 2015b).

Framingham Heart Study (1948 to ongoing)—Designed to focus on cardiovascular health in a cohort of residents of Framingham, Massachusetts, with an original cohort of 5,209 individuals who were 30 to 62 years old. Audiologic assessments were conducted in 1978–1979 and 1983–1985 (Gates et al., 1990; Mościcki et al., 1985).

Health, Aging, and Body Composition Study (Health ABC Study) (1997 to ongoing)—This clinical research study is examining changes in body composition and a range of health conditions in older adult residents in the Pittsburgh, Pennsylvania and Memphis, Tennessee areas. At baseline (1997–1998), the sample of 3,075 adults,

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DISTRIBUTION OF HEARING LOSS

Studies examining the incidence and prevalence of hearing loss include those that track a number of health outcomes in a cohort (e.g., the Framingham Heart Study, Baltimore Longitudinal Study of Aging) and a few population-based studies that are focused on hearing (e.g., Blue Mountains Hearing Study, Epidemiology of Hearing Loss Study) (see Box 2-1). Information on the extent of hearing loss in military personnel and veterans has been explored in several recent Institute of Medicine reports (IOM, 2006, 2014).

ages 70 to 79 years, had about equal numbers of men and women (33 percent of the men were African American, as were 46 percent of the women) (Kalogeropoulos et al., 2009). Audiometry was included in the examination from 2001 to 2002.

Hispanic Community Health Study/Study of Latinos (2008 to 2011)—This population-based study examined the prevalence and potential risk factors associated with hearing impairment among self-identified Hispanic/Latino adults of ages 18 to 74 years from randomly selected households in four U.S. communities: Bronx, New York; Chicago, Illinois; Miami, Florida; and San Diego, California. Audiometric examinations of 16,415 adults were conducted in 2008–2011 (Cruickshanks et al., 2015a).

Hispanic Health and Nutrition Examination Survey (1982 to 1984)—This multistage sampling study used audiometric and medical examinations to investigate hearing loss and hearing aid use in 1,682 Mexican Americans (Arizona, California, Colorado, New Mexico, and Texas), 441 Cuban Americans (Miami, Florida), and 628 Puerto Ricans (New York City, New York) aged 20–74 (Lee et al., 1991).

Longitudinal Study of Hearing (1983 to 1986)—Using data from two longitudinal studies (one from Great Britain, and one from Denmark), researchers examined the progression of hearing impairment in adults over time. From the Great Britain sample, 98 of the original 432 participants completed the three visits. The second visit was, on average, 2 years after the first, and the third visit was 4.6 years after the first. For the Denmark sample, 206 middle-aged men completed an audiometric assessment at the first visit, 158 at the second visit (3 years after the first), and 135 at the third visit (8 years after the first) (Davis et al., 1990).

National Health and Nutrition Examination Survey (1959 to ongoing)—This program of studies examines the health and nutritional status of adults and children in the United States through interviews and examinations. Each year a representative sample of approximately 5,000 individuals participates in the study (CDC, 2015c). Audiometric assessments of hearing have been included in some years of the examination.

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Incidence of Hearing Loss

In addition to providing estimates of the risk of developing a disorder, studies of incidence measure the relative risk associated with such characteristics as age, sex, and race as well as potentially modifiable exposures and other factors that may add prospective evidence for identifying causal pathways. The few studies that have measured the incidence of hearing loss are summarized in Table 2-1. Study designs and methods varied across studies, with only two of the cohorts using traditional population-based designs (Cruickshanks et al., 2003, 2010a, 2015b; Mitchell et al., 2011) and one (Fischer et al., 2015) based on the offspring of one of the population-based cohorts. The other studies employed selection criteria at baseline that may have resulted in a healthier than average sample (Brant and Fozard, 1990; Brant et al., 1996; Gates and Cooper, 1991; Gates et al., 1990; Mościcki et al., 1985) or used very small samples not intended to be representative of the general population of adults (Davis et al., 1990). All but the Baltimore Longitudinal Study of Aging (BLSA), which used Békésy audiometry (a form of automated audiometry), used traditional audiometric assessments of hearing thresholds. The definitions of hearing loss cases varied slightly by frequencies included in the pure tone average. They also differed in that some required bilateral hearing loss (defined by hearing loss in both ears based on the better ear) while others (using the hearing in the worse ear to define cases) included unilateral and bilateral cases. The length of follow-up time varied from 2 to 15 years, with most reporting 5-year event rates. The Epidemiology of Hearing Loss Study (Cruickshanks et al., 2003) and the Beaver Dam Offspring Study (Fischer et al., 2015) cohorts had predominately non-Hispanic white participants. Other cohorts did not report the race/ethnic distributions of their samples, and no data were presented stratifying on race/ethnicity, which suggests, given the demographics of their catchment areas, that the majority of participants also were non-Hispanic white. The committee is not aware of any other published reports of the incidence of hearing loss measured by audiometry in minority populations in the United States.

The reported incidence rates, standardized to annual rates per 1,000 individuals (see Table 2-1), vary from 12 per 1,000 individuals per year in Great Britain to 42.8 per 1,000 individuals per year in Beaver Dam, Wisconsin, and were higher in studies focused on middle-aged and older adults and lower in studies that included younger adults or excluded less healthy participants. The Blue Mountains cohort in Australia was designed to be comparable to the Beaver Dam cohort, and the incidence rates appear remarkably similar when comparing rates using the same pure tone average definition (42.2 per 1,000 individuals per year in the Blue Mountain Hearing Study and 42.8 per 1,000 individuals per year in the Epidemiology of Hearing Loss Study) (Cruickshanks et al., 2003; Mitchell et al., 2011).

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However, these comparisons are limited, as no adjustments have been made across cohorts for the actual age and sex distributions of the participants. Nonetheless, the risk of hearing loss was high in all studies of older adults, as can be seen in Table 2-1. Comparing these rates to those for cardiovascular disease (34.6/1,000/year for men and 20.0/1,000/year for women ages 65 to 74 years in the Framingham Heart Study) (NHLBI, 2006), diabetes (7.8/1,000/year) (CDC, 2014), and cancer (4.548/1,000/year) (NCI, 2016) reveals that the risk of hearing loss is up to 2-fold higher than the risk of cardiovascular disease, approximately 5-fold higher than the risk of diabetes, and about 10-fold higher than the risk of cancer. The risk of bilateral hearing loss is approximately 7-fold higher than the risk of bilateral vision impairment (Klein et al., 2001).

Age and Sex

Figure 2-1 shows the age- and sex-specific 5-year incidence of hearing loss in either ear from the Epidemiology of Hearing Loss Study and for bilateral hearing loss in the Blue Mountains Hearing Study (Cruickshanks et al., 2003; Mitchell et al., 2011). Among non-Hispanic white participants in these studies, the incidence of hearing loss was higher at older ages and, within each age group in the Epidemiology of Hearing Loss Study, higher among men than among women. The data on the 80-years-and-older groups have broader confidence intervals because there were fewer participants who did not have hearing loss at baseline and who did have follow-up data.

Although incidence data are scarce and limited to non-Hispanic white populations, the data suggest that the risk of hearing loss increases across the life span and throughout older age and that men have a higher risk of hearing loss than women do. Based on the Epidemiology of Hearing Loss Study data, 18 percent of women aged 60–69 and 35 percent of men aged 60–69 developed hearing loss within 5 years (Cruickshanks et al., 2003).

By 15 years of follow-up, when the participants were 75–84 years of age, 71 percent of the women and 84 percent of the men had developed hearing loss (Cruickshanks et al., 2015b). In models that adjusted for age and sex, the risk of hearing loss nearly doubled with every 5 years of age (hazard ratio [HR] = 1.90, 95 percent confidence interval [CI] = 1.79, 2.02), and men were more than twice as likely as women to develop hearing loss during 15 years of follow-up (HR = 2.23, 95 percent CI = 1.86, 2.66) (Cruickshanks et al., 2015b).

Prevalence of Hearing Loss

In contrast to the limited data on the incidence of hearing loss, numerous cross-sectional studies have described the prevalence of hearing loss.

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TABLE 2-1
Selected Studies of Incidence of Hearing Loss

Study and Number of Participants	Definition of Hearing Loss and Participant Age Range at Baseline	Follow-Up Time	Percent Who Developed Hearing Loss During the Follow-Up Time	Estimated Rate per 1,000 Individuals/ Year
Framingham Heart Study N = 1,475[a] (Gates and Cooper, 1991)	PTA of 0.5, 1, and 2 kHz > 26 dB HL Age of participants: 58–88 years	6 years	8.4 (right ear) 13.7 (left ear)	NA
Longitudinal Study of Hearing Great Britain: N = 404 Denmark: N = 157 (Davis et al., 1990)	PTA of 0.5, 1, 2, and 4 kHz > 25 dB HL in better ear Age of participants: Great Britain: 40–65 years; Denmark: 49–69 years	Great Britain: 2 years; Denmark: 3 years	Great Britain: 2.4 Denmark: 6.9	Great Britain: 12 Denmark: 23
Baltimore Longitudinal Study of Aging N = 531 men (Brant et al., 1996)	PTA of 0.5, 1, 2, and 3 kHz ≥ 30 dB HL in either ear (using Békésy audiometry) Age of participants > 25 years	5.1 to 11.2 years[b]	8.7	NA
Epidemiology of Hearing Loss Study N = 1,678[c] (Cruickshanks et al., 2003, 2010a, 2015b)	PTA of 0.5, 1, 2, and 4 kHz > 25 dB HL in either ear Age of participants: 48–92 years	5, 10, or 15 years	5 years: 21.4 10 years: 37.2 15 years: 56.8	5 years: 42.8 10 years: 37.2 15 years: 37.9
Blue Mountains Hearing Study N = 870 (Mitchell et al., 2011)	PTA of 0.5, 1, 2, and 4 kHz > 25 dB HL in better ear PTA of 0.5, 1, 2, and 4 kHz > 25 dB HL in worse ear Age of participants: > 49 years	5 years	17.9 21.1	35.8 42.2
Beaver Dam Offspring Study N = 1,984[d] (Fischer et al., 2015)	PTA of 0.5, 1, 2, and 4 kHz > 25 dB HL in either ear Age of participants: 21–79 years	5 years	8.3	16.6

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NOTE: dB = decibel (measure of sound intensity or volume); db HL = decibels hearing level; kHz = kilohertz (measure of frequency of sound waves); N = number of participants without hearing loss at baseline; NA = not available; PTA = pure tone average.

[a]Number of individuals followed for progression of hearing decline.

[b]Follow-up times varied by age: < 50 years = mean of 10.9 years; 50–59.9 = mean of 11.2 years; 60–69.9 = mean of 7.8 years; ≥ 70 = mean of 5.1 years.

[c]At baseline, 1,925 individuals had normal hearing. Over the course of the study, 1,678 individuals participated in at least one follow-up examination (1,636 participated in the 5-year follow-up, 1,465 at 10 years, and 1,240 at 15 years).

[d]Number of participants who had 5-year follow-up audiometric testing. Number of participants without hearing loss at baseline = 2,436.

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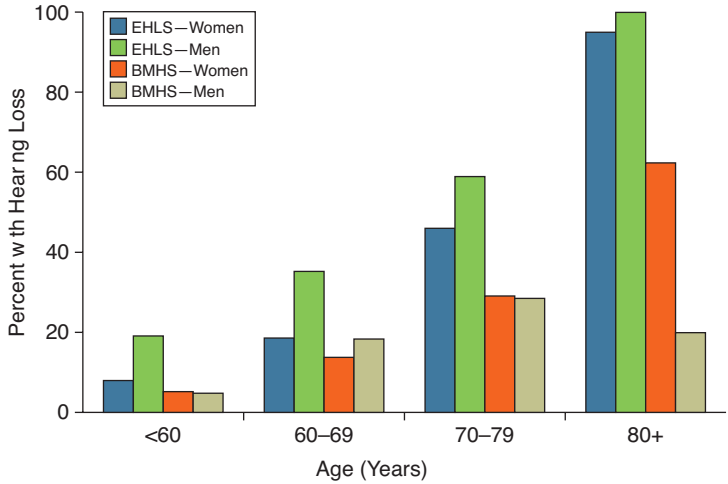

FIGURE 2-1 Five-year incidence in the Epidemiology of Hearing Loss Study and Blue Mountains Hearing Study (Cruickshanks et al., 2003; Mitchell et al., 2011). Incidence rates were found to be greater for men less than 70 years of age than for women in the same age range in the EHLS, but significant gender differences in incident hearing loss were not observed in the BMHS. At the 5-year follow-up examinations, EHLS participants were 53–97 years of age and BMHS participants were 54 years and older.
NOTE: BMHS = Blue Mountains Hearing Study; EHLS = Epidemiology of Hearing Loss Study.

Several large cohort studies carried out in the United States are summarized in Table 2-2. Direct comparisons of the prevalence rates are problematic because of the differences in the age and sex distributions across cohorts. Data from the National Health and Nutrition Examination Survey (NHANES) show that the prevalence of hearing loss rises steeply with age, as shown in Figure 2-2, from 3 percent among adults 20–29 years of age to 49 percent among adults 60–69 years of age (Agrawal et al., 2008). When adults of ages 70 years and older were tested in a more recent wave of NHANES, the prevalence of bilateral hearing loss was found to be 45.6 percent among the 70- to 74-year age group and 80.6 percent in the 85-years-and-older age group (Lin et al., 2011c). These data likely underestimate the true population prevalence since NHANES does not include people living in assisted care facilities, group homes, or nursing homes or those unable to come to the mobile examination center. Insufficient numbers of people from some minority groups and the oldest old are included to produce robust estimates of the prevalence of hearing loss in these subgroups of the population. Using NHANES data, Agrawal and colleagues estimated that 29 million adults ages 20–69 years in the United States have hearing loss, and Lin and colleagues estimated that 30 million people ages 12 and older

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TABLE 2-2
Selected Studies of Prevalence of Hearing Loss

Study, Number, Sex, and Age of Participants	Definition of Hearing Loss	Percent with Hearing Loss (%)
Framingham Heart Study N = 2,293; 40.8% men Age of participants: 57–89 years (Mościcki et al., 1985)	PTA of 0.5, 1, and 2 kHz > 20 dB HL in better ear PTA of 0.5, 1, and 2 kHz > 20 dB HL in worse ear PTA of 0.5, 1, and 2 kHz ≥ 25 dB HL in better ear PTA 0.5,1,2,3 > 25 dB HL in better ear PTA 0.5,1,2,4 > 25 dB HL in better ear	35 53 31 36 47
Framingham Heart Study N = 1,662; 40.7% men Age of participants: 63–95 years (Gates et al., 1990)	PTA of 0.5 to 4 kHz > 26 dB HL in better ear	29
Hispanic Health and Nutrition Examination Survey N = 2,751; % men not reported Age of participants: 20–74 years (Lee et al., 1991)	PTA of 0.5, 1, and 2 kHz > 25 dB HL in either ear	Age-, sex-, and ethnic-background-specific rates varied from 2.3 to 48.1
Epidemiology of Hearing Loss Study N = 3,753; 42.3% men Age of participants: 48–92 years (Cruickshanks et al., 1998)	PTA of 0.5, 1, 2, and 4 kHz > 25 dB HL in worse ear	45.9
Health, Aging, and Body Composition Study (Health ABC) N = 2,052; 47.3% men Age of participants: 73–84 years (Helzner et al., 2005)	Low-frequency: PTA of 0.5, 1, and 2 kHz > 25 dB HL High-frequency: PTA of 2, 4, and 8 kHz > 40 dB HL	59.9 76.9
National Health and Nutrition Examination Survey (NHANES) N = 5,742; 46.6% men Age of participants: 20–69 years (Agrawal et al., 2008)	PTA of 0.5, 1, 2, and 4 kHz > 25 dB HL in either ear High-frequency: PTA of 3, 4, and 6 kHz > 25 dB HL in one or both ears	16 32
NHANES 1971–1973: N = 3,192; 47.3% men 1999–2004: N = 4,486; 49.1% men Age of participants: 25–69 years (Cheng et al., 2009)	PTA of 1, 2, 3, and 4 kHz > 25 dB HL in worse ear	1971–1973: 28.5 1999–2004: 21.1
NHANES N = 717; % men not reported Age of participants: over 70 years (Lin et al., 2011c)	PTA of 0.5, 1, and 2 kHz > 25 dB HL in better ear Speech frequency PTA (0.5, 1, 2, and 4 kHz) in better ear	44.8 63.1

continued

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TABLE 2-2
Continued

Study, Number, Sex, and Age of Participants	Definition of Hearing Loss	Percent with Hearing Loss (%)
NHANES 2005–2008: N = 3,143; 2001–2004: N = 3,630; 2005–2006: N = 717; % men not reported Age of participants: over 12 years (Lin et al., 2011b)	PTA of 0.5, 1, 2, and 4 kHz > 25 dB HL in better or either ear	Better ear: 12.7 Either ear: 20.3
Beaver Dam Offspring Study N = 2,837; 45.6% men Age of participants: 21–84 years (Nash et al., 2011)	PTA of 0.5, 1, 2, and 4 kHz > 25 dB HL in worse ear	14.1
Hispanic Community Health Study/ Study of Latinos 2008–2011 N = 16,415; 47.97% men Age of participants: 18–74 years (Cruickshanks et al., 2015a)	PTA of 0.5, 1, 2, and 4 kHz > 25 dB HL in better ear; worse ear	Better ear: 8.24 Worse ear: 15.06

NOTE: dB = decibel (measure of sound intensity or volume); dB HL = decibels hearing level; kHz = kilohertz (measure of frequency of sound waves); PTA = pure tone average.

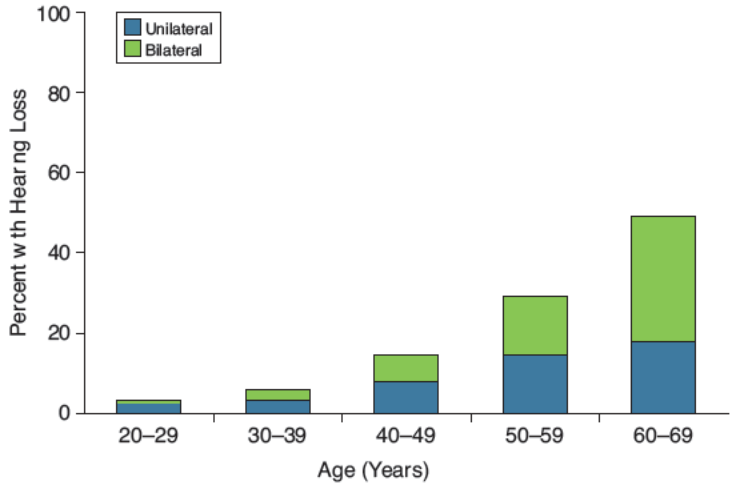

FIGURE 2-2 National Health and Nutrition Examination Survey data on the extent of unilateral and bilateral hearing loss in adults, ages 20–69 years.
SOURCE: Agrawal et al., 2008.

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have bilateral hearing loss and 48 million people have poor hearing in at least one ear (Agrawal et al., 2008; Lin et al., 2011c).

In the Epidemiology of Hearing Loss Study cohort, conductive hearing losses were present in 8 percent of participants, with 0.2 percent having a history of otosclerosis (an uncommon but disabling form of hereditary hearing loss that can be aggravated by pregnancy, becomes disabling in mid-life, and in older age is functionally complicated by presbycusis) and 1.9 percent reporting having had an onset of hearing loss before age 20 years (Cruickshanks et al., 1998). Most participants with hearing loss had bilateral symmetrical losses, which is consistent with the predominant type among adults being a sensorineural hearing loss acquired in adulthood.

Severity

The studies described above use a clinically significant cutpoint for defining hearing loss that includes mild losses (26–40 dB HL) as well as moderate and severe or profound losses. The severity of the loss may affect hearing health care needs in various important ways. For example, older adults with profound hearing loss may be candidates for cochlear implants, but this surgical intervention would not be appropriate for someone with a mild loss. Therefore, the committee searched for population-based estimates of the prevalence of hearing loss that were stratified by severity. Cheng and colleagues reported the age–sex–race standardized prevalence of hearing loss by severity in adults 20–69 years of age using data from NHANES I (1971–1973) and NHANES 1999–2004 (Cheng et al., 2009). As shown in Table 2-3, the majority of people with hearing loss had a mild loss, and severe or profound losses were rare in the age range studied, which had an upper limit of 69 years. The Blue Mountains Hearing Study

TABLE 2-3
Age-Sex-Race Standardized Prevalence of Hearing Loss by Severity: Ages 20 to 69 Years

	NHANES I (%)	NHANES 1999–2004 (%)
Normal (< 26 dB)	73.5	78.4
Mild (26–40 dB)	17.3	13.9
Moderate (41–70 dB)	7.8	7.3
Severe or profound (71+ dB)	1.3	0.5

NOTE: dB = decibel; NHANES = National Health and Nutrition Examination Survey.
SOURCE: Cheng et al., 2009.

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also reported that the severity of hearing loss increased with age although mild hearing loss was the most common level except in the oldest age group of 85 years and older (Mitchell et al., 2011). Cluster analyses of NHANES data and data from a rural health study described significant variation and gender differences in the shapes of audiogram profiles which may be a useful approach to classifying severity (Ciletti and Flamme, 2008).

Race and Ethnicity

Racial and ethnic differences in the prevalence of hearing loss have been examined in several cross-sectional studies. In the 1999–2004 NHANES, the prevalence of hearing loss among adults 20–69 years was found to be 50 to 60 percent lower among African American participants than among non-Hispanic white participants, and the prevalence among Mexican American participants was similar to that of non-Hispanic white participants (Agrawal et al., 2008). Among older adults (70 years of age or older), this pattern persisted, with non-Hispanic black participants having a lower prevalence than non-Hispanic white participants (Lin et al., 2011c). Similar results were found in the Health, Aging and Body Composition (Health ABC) study (Helzner et al., 2005). In this study of Medicare beneficiaries in two communities (Pittsburgh, Pennsylvania, and Memphis, Tennessee), hearing was tested at the 5-year follow-up visit. Using a pure tone average of 0.5–2 kHz > 25 dB HL cutpoint, they found that the prevalence of hearing loss was 20 to 60 percent higher among white participants than among black participants (Helzner et al., 2005).

In 1982–1984 the Hispanic Health and Nutrition Examination Survey was launched to measure the health of a representative sample of Mexican Americans from the southwestern United States, Cuban Americans from the Miami, Florida, area, and Puerto Ricans from New York City (Lee et al., 1991). Hearing loss (pure tone average 0.5–1, 2 kHz > 25 dB HL either ear) was common in all three groups, but the prevalence was lower among the Puerto Ricans than among the Mexican Americans or the Cuban Americans. More recently, the prevalence of hearing loss was measured in a diverse Hispanic/Latino population as part of the Hispanic Community Health Study/Study of Latinos (Cruickshanks et al., 2015a). In this population-based study in four communities (Bronx, New York; Chicago, Illinois; Miami, Florida; and San Diego, California), hearing loss was common among older adults, and the prevalence was higher among participants with Puerto Rican background than among those with a Mexican background. The prevalence of hearing loss among participants reporting Dominican, Central American, Cuban, South American, or other backgrounds was similar to the prevalence of hearing loss among those with a Mexican background. The report did not include direct comparisons

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between Hispanic/Latino participants and non-Hispanic white participants. The limited data suggest that there may be a racial/ethnic variation in the prevalence of hearing loss, although the causes and the effects of this difference on individuals' function and activities are not known.

Temporal Population Patterns

A few studies have examined changes in hearing loss prevalence over time in the United States. The evidence from these examinations of temporal trends, secular changes, and birth cohort effects suggests that some cases of hearing loss may be preventable since genetic changes would be expected to accrue quite slowly. Modifiable exposures or risk factors are the more likely explanation for rapid shifts in the risk of developing chronic diseases. Although there are no published longitudinal studies of hearing loss incidence over time, data from the 1971–1973 NHANES and 1999–2004 NHANES suggest that the prevalence of hearing loss (pure tone average 1, 2, 3, 4 kHz) declined 4.8 percent between these two time periods, even after adjusting for age, sex, and race (Cheng et al., 2009).

A strong birth cohort effect was found using data from the Epidemiology of Hearing Loss Study cohort and their offspring (Beaver Dam Offspring Study) (Zhan et al., 2010). In each generation (defined as a 20-year period of births) the odds of hearing loss were about 50 percent lower for men and 24 percent lower for women than in the previous generation (Zhan et al., 2010). Similar results were found using early National Health Examination Survey data from 1959–1962 and NHANES data from 1999–2004 (Hoffman et al., 2010). In this paper, the odds of hearing loss among 25–64-year-olds were reported to be about 44 percent lower among men and 34 percent lower among women in the second time period compared to the first. A second report by this group used national data for older adults (64–74 years of age) from 1959–1962 and 1999–2006 (Hoffman et al., 2012). This study found that the prevalence of hearing loss among older adults declined about 25 percent between the first time period and the second. The reasons for these declines are not known, but the findings are consistent with the possibility that adult-onset hearing loss is at least partially preventable or that the rate of loss may be slowed or the onset postponed. Whether the trend will continue remains to be seen. Longitudinal data are not yet available on the impact of current listening patterns (e.g., listening to loud music using ear buds).

Progression of Hearing Loss

Several large longitudinal studies have examined the change in hearing thresholds over time. In the Baltimore Longitudinal Study of Aging, it was

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noted that the rates of change were faster at older ages (Brant and Fozard, 1990). Gates and Cooper (1991) reported that 4 percent of Framingham Heart Study participants experienced a significant decline in hearing during a 6-year follow-up period. Lee and colleagues (2005) followed participants for 3 to 11 years with an average of 10 visits and found that thresholds changed by 0.7–1.2 dB HL per year, depending on the frequency. The rates of change were similar in the population-based Epidemiology of Hearing Loss Study, which tested participants only at 5-year intervals (Wiley et al., 2008). Among participants in that study who had hearing loss at baseline, 53 percent experienced a decline in hearing (> 5 dB HL change in pure tone average) in 5 years. Taken together, these data indicate that hearing diminishes gradually over time, although at an accelerating rate with advancing age. Many, although not all, adults over 80 years of age have some degree of hearing loss (see Figure 2-3). This finding has important implications for hearing health care, as individual needs for amplification and other auditory interventions are likely to change over time and the prevalence of that need will increase as the proportion of the population over 80 years of age increases. Additionally, the surge of older Americans caused by the aging of the boomer cohort raises concerns about the aggregate demands for hearing health care. The slow gradual changes also can mean that adults may not

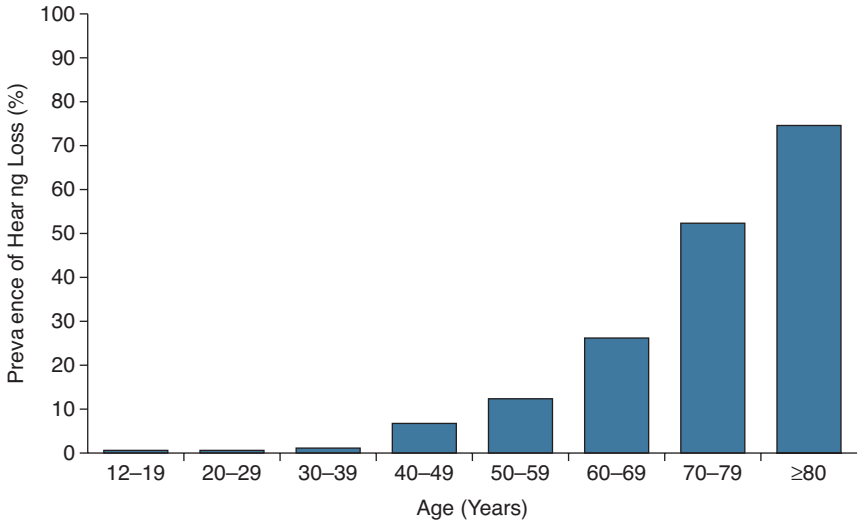

FIGURE 2-3 Prevalence of hearing loss in the United States by age, 2001–2008. Hearing loss is defined by a pure tone average of 0.5–4 kHz thresholds in the better hearing ear > 25 dB HL.
SOURCE: Yamasoba et al., 2013. Reprinted with permission from Elsevier.

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recognize the deterioration in their hearing and may delay seeking help. More research is needed on the best approaches for improving awareness of gradual hearing loss.

HEARING LOSS: CAUSES AND RISK FACTORS

The complexity of the physiologic and neural mechanisms that undergird hearing and communication in combination with the numerous genetic and environmental factors that can be associated with or the cause of hearing loss makes it a challenging area for research and one in which much remains to be learned. The major causes and risk factors for hearing loss fall into two major categories, congenital and acquired, although there are complex overlaps between the two, including the potential contributions of genetic susceptibilities to certain risk factors.

Congenital and Genetic Hearing Loss

An estimated 2 to 3 of every 1,000 newborn babies in the United States has hearing loss; of those cases, an estimated 50 to 60 percent result from genetic causes (Alford et al., 2014; Kochhar et al., 2007; Mahboubi et al., 2012). More than 100 genes have been identified as having some effect on hearing ability (i.e., nonsyndromic); in addition, more than 400 genetic syndromes result in other clinical abnormalities that may affect hearing ability (Alford et al., 2014; Kochhar et al., 2007). Newborn hearing screening is the standard of care in the United States and in many other countries; in 2013, the Centers for Disease Control and Prevention (CDC) reported that more than 97 percent of newborns in the United States were screened for hearing loss (CDC, 2015a).

The type and degree of hearing loss that appears in newborns vary. Autosomal recessive hearing loss often results from mutations of the GJB2 gene (estimated as 20 percent of all congenital hearing loss), with variations in severity of hearing loss, but individuals often have nonprogressive, severe hearing loss that manifests early in life, usually prelingual (Mahboubi et al., 2012; Venkatesh et al., 2015). The three genes commonly associated with autosomal dominant causes of hearing loss are WFS1, MYO7A, and COCH. WFS1 mutations, for example, affect hearing at high frequencies, while hearing remains normal in the low frequencies (Mahboubi et al., 2012; Venkatesh et al., 2015). For those with mutations in the MYO7A gene, hearing loss is gradual and progressive and manifests in the first 10 years of life. For those with mutations in the COCH gene, hearing loss begins in the 20s, and while the progression is variable, complete deafness often occurs 20 to 30 years later (Mahboubi et al., 2012; Venkatesh et al., 2015).

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Acquired Hearing Loss

As noted in Chapter 1, acquired hearing loss may be sudden or gradual in onset and may be caused by any of a number of exposures, diseases, or health conditions, including meningitis; measles and mumps; otosclerosis (progressive fusion of the ossicles of the middle ear); chronic ear infections; autoimmune or inflammatory disorders; fluid or infection in the ear (otitis media); tympanic membrane (ear drum) thickening or perforations; the use of some antibiotic, antimalarial, or cancer chemotherapeutic medications; some head injuries or other trauma; long-term exposure to excessive noise; cerumen (ear wax) or foreign bodies blocking the ear canal; and aging (presbycusis) (WHO, 2015).

Noise-Induced Hearing Loss

One type of acquired hearing loss is noise-induced hearing loss. Long-term exposure to loud and excessive noise may result in temporary increases in thresholds, or "temporary threshold shifts" (the threshold is the quietest sound that can be heard), and may or may not result in permanent changes in hearing, depending on the level of noise and the length of exposure. Acoustic trauma may result from explosive or impulse noise, with blasts at high intensity levels (~180 dB sound pressure level [SPL]) having the potential to cause hemorrhages, perforation of the ear drum, or impacts on the cochlea (IOM, 2006). As noted in two previous Institute of Medicine reports that reviewed noise exposure data in the context of military service (IOM, 2006, 2014), there are few high-quality prospective studies to quantify the risks associated with these exposures. Most studies of noise in humans have been in occupational cohorts (primarily among men), and few have controlled analyses for factors other than noise or age. One recent report from the Millennium Cohort Study of veterans demonstrated that deployment to combat zones, proximity to improvised explosive devices, and combat-related head injuries were associated with new-onset hearing loss (Wells et al., 2015).

Occupational exposure to noise is regulated in the United States by the Occupational Safety and Health Administration. The National Institute for Occupational Safety and Health (NIOSH) has set recommended occupational exposure limits of 85 dB SPL for an 8-hour time-weighted average (NIOSH, 2015b) and recommends the use of hearing protection measures at higher sound levels. In addition to ear muffs, ear plugs, and other personal hearing protection, workplaces with high noise levels can use environmental (e.g., sound walls or the isolation of loud machinery) and administrative controls (e.g, reduced time worked in noisy environments or increased distance from noise) to reduce exposures (OSHA, 2016). NIOSH

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estimates that between 5 and 30 million workers in the United States are exposed to occupational noise that puts them at risk for hearing loss, with an additional 9 million potentially at risk due to exposure to ototoxic chemicals, such as certain solvents (Fuente et al., 2013; NIOSH, 2015a). A 30-year review of hearing loss data found that the risk of hearing loss may be declining across occupational groups in many industries (Masterson et al., 2015).

The relationship between noise exposure and the incidence of age-related hearing loss is difficult to determine, particularly as most age-related hearing loss affects hearing ability at high frequencies. Several studies have found that a history of noise exposure was not associated with the rate of later declines in hearing acuity (Lee et al., 2005) or the incidence of hearing loss (Cruickshanks et al., 2003, 2010a; Fischer et al., 2015; Mitchell et al., 2011), even in analyses restricted to those currently employed (Cruickshanks et al., 2010a).

In non-occupational, recreational, and home settings, the levels of noise and lengths of exposure vary widely. Distance from the source of the sound is a factor, as is the volume of the sound and the length of continuous exposure. Target shooting and hunting have been associated with acute onset of hearing loss. Other activities with high and often sustained noise levels that may increase risk for hearing loss include listening to music or other sounds at high volume (including through earbuds or headphones that act to increase the proximity to the source of the sound), participating in a music band, attending loud concerts, and using lawnmowers, leaf blowers, or other high-noise tools (NIDCD, 2014). Ongoing research efforts by the National Institute on Deafness and Other Communication Disorders, the Department of Veterans Affairs, the Department of Defense, and many others are examining noise-induced hearing loss and its etiology and treatment (DoD Hearing Center of Excellence, 2016; NIDCD, 2014; VA, 2015).

Reducing time spent in noisy environments and wearing hearing protection to reduce noise exposure to the ear may help prevent noise-induced hearing loss. Much can be done to alleviate background noises and to promote acoustic environments that have widespread benefit for communication (see Chapter 6).

Risk Factors for Age-Related Hearing Loss

The most common form of acquired hearing loss and the focus of the previously reviewed epidemiological studies is age-related hearing loss. Numerous lifestyle factors, cardiovascular risk factors (including diabetes), medications, neurotoxins, and other factors have been found to be associated with the prevalence of hearing loss (Agrawal et al., 2009; Cruickshanks et al., 2015a; Helzner et al., 2011; Nash et al., 2011). This section focuses on

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the results of longitudinal studies that have tested associations with the incidence of audiometrically measured hearing loss or with longitudinal changes in hearing thresholds. Although cross-sectional associations are useful for generating new hypotheses, they are considered weak evidence for potential causal mechanisms and prevention. Observational longitudinal studies have the advantage of providing evidence about exposures that precede the development of the disorder but are not sufficient for determining causal pathways. The strongest evidence would come from randomized controlled trials, a study design that has been rarely used in hearing research.

Socioeconomic Status

Indicators of higher socioeconomic status such as higher levels of education or professional occupational categories have been found to be associated with a lower risk of incident hearing loss (or rate of decline) in many (Cruickshanks et al., 2003, 2010a, 2015b; Fischer et al., 2015; Linssen et al., 2014; Mitchell et al., 2011) but not all prospective studies (Kiely et al., 2012). Generational differences in educational attainment explained part of the birth cohort effect on the prevalence of hearing loss discussed above; the impact of birth year was attenuated, although it remained significant (Zhan et al., 2011). This protective pattern is similar to many other disorders of aging, where more highly educated, wealthier people have lower risk of disease, most likely due to a number of factors, but the full reasons are unclear.

Lifestyle Factors

No longitudinal cohort studies have reported significant associations between alcohol consumption and a risk of hearing loss (Brant et al., 1996; Cruickshanks et al., 2015b; Fischer et al., 2015; Gopinath et al., 2010a). One study found that current smokers had a 31 percent increased risk of developing hearing loss during 15 years of follow-up (Cruickshanks et al., 2015b). The risk for former smokers who had stopped 5 or more years earlier was similar to those who had never smoked. Cigarette smoking was not associated with 5- or 10-year risk of developing a hearing loss in this cohort, suggesting that the effects accrue slowly. Consistent with this hypothesis, other longitudinal studies with only 5 years of follow-up have not found significant associations between smoking and risk of hearing loss (Fischer et al., 2015; Gopinath et al., 2010a; Kiely et al., 2012). The Baltimore Longitudinal Study of Aging involving 531 men also found no association between smoking and a risk of incident hearing loss (Brant et al., 1996).

Few dietary factors have been identified as being associated with the risk of hearing loss. In the Blue Mountains Hearing Study, people who

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consumed fish two or more times per week were 20 percent less likely to develop hearing loss in 5 years of follow-up than those who ate fish less than once a week (Gopinath et al., 2010b). The Nurses' Health Study II found lower risk of self-reported hearing loss among women consuming more fish and long-chain omega-3 polyunsaturated fatty acids (Curhan et al., 2014).

Health Conditions

Blood pressure Population-based longitudinal cohort studies have found no association between blood pressure or hypertension and the risk of hearing loss (Cruickshanks et al., 2015b; Fischer et al., 2015). However, higher systolic blood pressure was found to be associated with hearing loss in the generally healthier Baltimore Longitudinal Study of Aging cohort (Brant et al., 1996). Hypertension was also associated with a faster decline in hearing acuity in a study of Australian participants (Kiely et al., 2012).

Obesity and central adiposity Several longitudinal studies have found obesity or waist circumference—a well-known marker of central adiposity as well as of insulin resistance and cardiovascular risk—to be associated with increased risk of hearing loss (Cruickshanks et al., 2015b; Curhan et al., 2013; Fischer et al., 2015; Linssen et al., 2014). The Maastricht Aging Study reported that a large waist circumference in younger adults and obesity in older adults showed some association with faster deterioration in hearing (Linssen et al., 2014). In the Epidemiology of Hearing Loss Study, there was an 8 percent increased risk of hearing loss for every additional 10 centimeters of waist circumference (Cruickshanks et al., 2015b). Body mass index was significantly associated with a higher (2 percent for every kg/m^2) 5-year risk of hearing loss in the Beaver Dam Offspring Study (Fischer et al., 2015). In the Nurses' Health Study II, body mass index and larger waist circumference were associated with a risk of self-reported hearing loss (Curhan et al., 2013).

Diabetes Although there have been numerous cross-sectional studies reporting a higher prevalence of hearing loss among people with diabetes (Agrawal et al., 2009; Cruickshanks et al., 2010b, 2015a; Helzner et al., 2011; Mitchell et al., 2009), there has been little evidence from longitudinal studies. Diabetes was not associated with incidence of hearing loss in several studies (Cruickshanks et al., 2015b; Fischer et al., 2015; Kiely et al., 2013; Mitchell et al., 2009). However, in the Epidemiology of Hearing Loss Study, highly elevated glycosylated hemoglobin levels were associated with a 2-fold increased risk of developing hearing loss during the 15-year follow-up (Cruickshanks et al., 2015b). As with many other risk factors, it is unknown whether the diabetes itself was the cause or only a correlation.

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Atherosclerosis Research in animal models, small clinical studies, and early ecological studies have suggested that cardiovascular disease risk factors and processes may be involved in the pathophysiology of hearing loss with aging (Cruickshanks et al., 2010b). One prospective study reported that the intima-media thickness of the carotid artery—a well-known measure of generalized atherosclerosis—was positively associated with the 5-year incidence of hearing loss (Fischer et al., 2015). The risk of developing hearing loss increased by 28 percent for every 0.2 mm increase in the intima-media thickness, an effect similar to what is seen with 5 years of aging. Plaque, a more advanced stage of atherosclerosis, also was associated with an increased risk of incident hearing loss.

Lipoprotein profiles A longitudinal study of 837 people followed for an average of 3.2 years found no association between hearing and the ratios of triglyceride levels or total cholesterol to high-density lipoprotein (HDL) cholesterol (Simpson et al., 2013). Non-HDL cholesterol was not associated with the incidence of hearing loss in either the Epidemiology of Hearing Loss Study or the Beaver Dam Offspring Study (Cruickshanks et al., 2015b; Fischer et al., 2015).

Chronic inflammation Higher levels of markers of inflammation have been associated with many age-related disorders (Chung et al., 2009; Danesh et al., 2008; Ferrucci et al., 2005; Jenny et al., 2012; Kizer et al., 2011). High concentrations of high sensitive c-reactive protein (hsCRP; a marker for inflammation) were found to be associated with a 2-fold increased risk of hearing loss over a 10-year period among people under the age of 60 years (Nash et al., 2014). The risk also increased with the number of such inflammatory markers that were elevated (hsCRP, interleukin-6, and tumor necrosis factor-α). However, no association was found among people age 60 years or older at baseline. A cross-sectional population-based cohort study has demonstrated associations between certain genetic polymorphisms for tumor necrosis factor-α and tumor necrosis factor receptors and hearing thresholds but no associations between other inflammatory-related polymorphisms and hearing loss (Uchida et al., 2014). Thus, chronic low-grade inflammation appears to play an important role in many degenerative disorders of aging and may be important in aging changes in auditory function, but additional prospective data are needed to evaluate its contribution.

Medications Many medications have potential ototoxic effects; the best known are certain antibiotics and chemotherapy agents (Cruickshanks et al., 2010b). There have been few reports from longitudinal cohort studies with audiometrically assessed hearing of associations between medication

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usage and the risk of hearing loss. It is not clear if this "absence of evidence" represents a publication bias or the lack of studies assessing medication effects. In the Epidemiology of Hearing Loss Study, no associations were found between the use of nonsteroidal anti-inflammatory medications or lipid-lowering medications (or statins, specifically) and the 15-year incidence of hearing loss (Cruickshanks et al., 2015b). In the study of the offspring of the Beaver Dam participants, statin use also was not associated with the 5-year incidence of hearing loss (Fischer et al., 2015). However, two large cohort studies using self-reported hearing loss outcomes have reported an increased risk of hearing loss to be associated with the use of aspirin, nonsteroidal anti-inflammatory drugs, and acetaminophen (Curhan et al., 2010, 2012). Although it is difficult to study the effects of medications while appropriately accounting for the reasons people use them, for prescription bias, and for polypharmacy, studies are needed to understand the impact of medication usage on changes in auditory function.

IMPACT OF HEARING LOSS

The impact of hearing loss on an individual is highly dependent on the severity of the loss and on the individual's lifestyle, communication needs, and specific environment. Two people with the same degree of hearing loss as measured by audiometry may report very different hearing difficulties. For example, the hearing "demands" may be quite different for a person who lives alone, is retired, and has a group of friends who socialize in only quiet settings than for a person who is working in a noisy office with cubicles, lives with several people, and frequently dines in noisy restaurants with a large group of friends. Additionally, since humans vary in their reactions to challenges and their abilities to find ways to adjust to changes in health, an individual's personality, coping style, resiliency, and duration of hearing loss all may influence how that person perceives his or her hearing abilities. In short, there is tremendous heterogeneity in the challenges in everyday life that are attributed to hearing loss because of the complex interactions of individuals and their environments. This highlights the need for a personalized approach to hearing health care.

From a population perspective, the burden of hearing loss may be hard to detect and quantify even in well-designed prospective studies. Studies that have attempted to measure the impact of hearing loss on communication and quality of life have often used questionnaires that measure the overall health-related quality of life, such as the Medical Outcomes Study-Short Form-36 (Ware and Sherbourne, 1992), which was designed for general population surveys. Other studies have relied on instruments that emphasize difficulties with hearing and communication such as the screening versions of the Hearing Handicap Inventory for Adults or the Elderly

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(Newman et al., 1990, 1991; Ventry and Weinstein, 1982; Weinstein and Ventry, 1983). Which outcome methodology is an appropriate metric for measuring impact is open to discussion, and efforts to identify improved "real-world" measures are needed (see Chapters 3 and 6).

Although the committee understands that it is not possible to have perfectly randomized controlled trials to examine the impact of hearing loss, prospective studies (preferably population-based) could be designed and well controlled to examine the associations between newly detected hearing loss and subsequent effects on quality of life and function. Such studies would represent the highest level of evidence possible. Existing studies that use prevalent hearing loss often fail to control for the baseline differences accrued prior to the hearing loss or during the hearing loss. Some studies include "outcome" data collected prior to the measurement of hearing, which obscures the prospective trajectories. The following section briefly discusses some of the limited data available from large studies to highlight the gaps in what is known about the effect of hearing loss on the individual's communication abilities; quality of life; social, occupational, and physical functioning; and health.

Quality of Life and Communication

In the population-based Epidemiology of Hearing Loss Study, participants with hearing loss at the baseline visit had lower quality of life than those with normal hearing, as measured by the 36 item Short Form Health Survey (Dalton et al., 2003). Greater severity of hearing loss also was associated with more communication difficulties, as measured by the Hearing Handicap Inventory for the Elderly, and more limitations in activities of daily living and instrumental activities of daily living (Dalton et al., 2003). Health-related quality of life also was lower in a study of a random sample of people aged 65 and older who had AARP Medicare supplement plans (Hawkins et al., 2012). However, these cross-sectional studies are inadequate for determining the impact of hearing loss as they include both newly detected and longstanding hearing loss and could not adequately control for differences in quality of life that may have preceded the onset of hearing loss.

A longitudinal analysis of data from the Blue Mountains Hearing Study found no difference in the rate of decline in quality of life over a 10-year period between participants with hearing loss and those with normal hearing at baseline, nor was baseline hearing ability associated with the rate of decline in quality of life (Gopinath et al., 2012). Participants who developed a hearing loss during the 10-year follow-up had greater declines in the physical composite score of the Short Form Health Survey than people who retained normal hearing, but there were no differences in the mental composite score (Gopinath et al., 2012).

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Cognitive and Mental Health and Depression

A large longitudinal study in Australia found no association between sensory impairments (hearing or vision) and the levels or rates of change in depression during 16 years of follow-up, in multivariable models adjusting for age, sex, and comorbidities (Kiely et al., 2013). The English Longitudinal Study of Aging found no association between self-rated hearing and the onset or persistence of depression (Chou, 2008).

Because hearing loss may burden those people who attempt to communicate with someone who has hearing loss, some studies have measured the impact on the mental health of the spouses of individuals with hearing loss. In the Alameda County Study, baseline self-reported hearing difficulties with communication were associated with the partner's poorer mental health and well-being 5 years later (Wallhagen et al., 2004). The study controlled for age, gender, financial problems, number of chronic conditions, and the hearing loss of the partner. In contrast, the cross-sectional analyses in the large Nord-Trøndelag Health Study found no association between hearing loss measured by audiometry and spousal mental health in 13,678 couples (Ask et al., 2010). It is not clear if the difference in results was due to cultural differences between the United States and Norway, the longitudinal versus cross-sectional designs, or the differences in impact between measured hearing loss and complaints of hearing problems. It is possible that the burden to the spouse is limited to families where the person who has hearing loss is struggling with communication or is dissatisfied with his or her hearing function.

A link between hearing and cognitive function and dementia has long been recognized, as signals transmitted by the ear are processed and recognized by the brain as sounds and words (Humes et al., 2012). Early studies and reviews have reported an association between hearing loss and dementias (Albers et al., 2015; Uhlmann et al., 1989). The association may be bidirectional, as the Australian Dynamic Analyses to Optimise Ageing project found that cognitive impairment was an independent predictor of the rate of decline in auditory function (Kiely et al., 2012). The Maastricht Aging Study analyzed the relationship that hearing and change in hearing, along with vision and change in vision, had with changes in cognitive function as measured with a battery of tests (Valentijn et al., 2005). In this study, declines in hearing were associated with 6-year declines in the Visual Verbal Learning Test (total score and recall), but not with any of the six other tests included in the battery. No effect of hearing aids was seen, but only seven people were fitted, so the power to detect an association was low. In one longitudinal study of people with audiometrically measured hearing loss, there was no difference between hearing aid users and nonusers in cognitive function or mental health after 11 years of follow-up (Dawes et al., 2015).

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Several prospective studies of hearing and incident dementia or Alzheimer's disease have been conducted. In a sample of the Baltimore Longitudinal Study of Aging, which excluded people with cognitive impairment at baseline, the risk of dementia was found to be 24 percent higher for every 10 dB of hearing loss after adjusting for age, sex, race, education, diabetes, smoking, and hypertension, and baseline scores on one test of cognitive function (Lin et al., 2011a). Hearing aid use was not found to have an effect on the risk of dementia in this study (Lin et al., 2011a). A smaller association was seen in the Health ABC cohort: The risk of having cognitive impairment increased 7 percent for every 10 dB of hearing loss at baseline (Lin et al., 2013). Baseline hearing loss was also associated with a slightly greater annualized decline in scores on the Modified Mini-Mental State Examination and Digit Symbol Substitution test, although the analyses did not control for baseline scores on those tests, which were worse among those with hearing loss than among those without hearing loss. Hearing aid use was not associated with slower rates of decline or a lower incidence of cognitive impairment in that study (Lin et al., 2013).

A subset of the participants in the Baltimore Longitudinal Study of Aging was followed with magnetic resonance imaging. With a mean follow-up time of 6 years, the rates of whole brain atrophy and atrophy in several regions of the right temporal lobe were greater among people with baseline hearing loss than among normal-hearing participants (Lin et al., 2014). Most participants had only a mild hearing loss, and baseline volumes were similar between those with and without hearing loss. The limited studies published to date provide intriguing evidence suggesting that sensorineural hearing loss and cognitive function changes may co-occur in aging. Mechanisms for these associations are not known although shared pathways such as vascular and inflammatory damage or the effects of hearing loss on social isolation and cognitive load have been suggested (Lin et al., 2011a, 2013, 2014; Panza et al., 2015). Future studies are needed to determine the mechanisms of these possible associations.

Function

Studies using self-reported hearing loss are problematic because of the complex relationship between the severity of loss measured by audiometry and the daily impact on function. It is difficult to separate the effects of the actual hearing acuity from other factors that influence self-perceived problems. In one study that controlled for hearing impairment severity, older adults reported less handicap than younger adults, which may reflect differences in demands on hearing, generational differences in coping, or adaptation to hearing loss over time (Wiley et al., 2000). Future studies based on self-report should include measures of the psychosocial factors

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that may influence reporting and audiometric testing in order to understand the influences on perceived handicap. Improved measures of hearing are needed—and, in particular, measures that better assess the real-world hearing environment.

The evidence to date on the relationship between hearing loss and social isolation is based on small cross-sectional studies. While it is highly likely that people with severe age-related hearing loss may feel isolated and that some people may respond to changes in hearing by altering their lifestyles, prospective studies are needed to provide stronger supporting evidence. Population-based longitudinal studies of hearing and social isolation are needed to measure the amount of time that adults spend engaging with others or spend in difficult listening conditions in order to determine the effects of different severities of hearing loss and value of treatment.

Other approaches to measuring the importance of hearing loss have evaluated the impact on work. One large study reported finding no association, in a multivariable-adjusted model, between difficulty hearing in noise and the use of sick leave (Nachtegaal et al., 2012). In the Epidemiology of Hearing Loss Study, there was no association between hearing loss at baseline and the 15-year risk of retiring after adjusting for age, sex, self-reported health, and chronic diseases (Fischer et al., 2014).

Cross-sectional studies have examined the association of hearing loss with falls, declines in physical functioning, and hospitalization, but population-based longitudinal studies are lacking. In cross-sectional data from the NHANES study, hearing loss was associated with an increased risk of self-reported history of falls in the previous 12 months (Lin and Ferrucci, 2012). In a subset of the Health ABC study, hearing loss at the 5-year follow-up (2002–2003) was associated with frailty that developed between the baseline examination (1997–1998) and the 10-year follow-up (Kamil et al., 2016). In a study examining hospitalization of the participants in the Health ABC study, participants with hearing loss at the 5-year midpoint examination were likely to have been hospitalized earlier (time to first hospitalization) than those with normal hearing and to have had a higher annual rate of hospitalization over the course of the study (median follow-up was 12 years) (Genther et al., 2015b).

One longitudinal study evaluated the effect of hearing impairment on independence and the use of support services. In the Blue Mountains Hearing Study, 1,457 participants at the baseline hearing test visit reported no use of community support services. Baseline hearing loss was not associated with the 5-year incidence of using community support services, with receiving help from a nonspouse family member or friend, or with an inability to go out alone. However, people with moderate to severe hearing loss had a 2.7-fold increased risk of needing help from family and friends (Schneider et al., 2010). These results provide some evidence that people with severe

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levels of hearing loss may have a greater need for services than people with normal hearing.

Two studies using self-reported hearing loss analyzed the impact of hearing loss on access to general health care. The Wisconsin Longitudinal Study found that the odds of reporting difficulties and delays in accessing health care in the previous year were 1.85 times higher in the group reporting hearing loss than in those not reporting hearing loss (Pandhi et al., 2011). In the Medical Expenditure Panel Survey, people with hearing loss were found to have better access to health care than those with other disabilities (Horner-Johnson et al., 2014). Several studies (Contrera et al., 2015; Fisher et al., 2014; Genther et al., 2015a; Gopinath et al., 2013; Wahl et al., 2013) have reported longitudinal associations between hearing and mortality risk; however, most showed no association after controlling for confounding factors (Contrera et al., 2015; Genther et al., 2015a; Wahl et al., 2013). The study authors did not speculate on the reasons for these disparities.

Impact of Early Life Onset of Hearing Loss

One subset of adults with hearing loss that deserves particular attention is those adults who had congenital or childhood-onset hearing loss. Programs exist to identify infants and young children with hearing loss who need treatment. Although hearing health care and hearing aids may be provided to these children through private insurance or state and federal programs, coverage changes as these children transition to adulthood (see Chapter 5). Because hearing aids are frequently used by children with hearing loss, long-term hearing health care is needed to help them continue to thrive as adults. Vocational rehabilitation programs provide assistance for some but may be inadequate to provide support for all who need it (see Chapter 5).

The National Longitudinal Transition Study-2 evaluated post-secondary school outcomes for young adults with disabilities (Newman et al., 2011). No information was collected specific to hearing health care needs or current treatments, but a broad array of outcomes was measured. Most analyses focused on comparing the group with disabilities to the general population and then comparing within the group with disabilities by the type of disability. As seen in Table 2-4, young adults with disabilities were as likely to enroll in post-secondary schools as the general young adult population but were slightly less likely to have graduated within 8 years. Employment rates and duration were similar, as were the number of hours worked, but the average hourly wage was slightly lower, possibly reflecting a higher proportion of part-time workers (Newman et al., 2011). A high percentage were engaged in work, education, or training during this early adult period.

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TABLE 2-4
National Longitudinal Transition Study-2:
Post-High School Outcomes of Young Adults with Disabilities
Up to 8 Years After High School[a]

	General Population	All Disabilities	Hearing Impairment	Deaf-Blindness
	Mean (SE)	Mean (SE)	Mean (SE)	Mean (SE)
Ever enrolled in any post-secondary school	67.4 (0.60)	60.1 (2.63)	74.7 (4.24)	56.8 (7.09)
Graduated any post-secondary school	52.4 (1.02)	40.7 (3.71)	52.9 (6.16)	27.7 (9.14)
Employed at time of interview	66.1 (0.60)	60.2 (2.65)	57.2 (4.89)	30.1 (6.69)
Average duration of employment (months)	21.8 (0.28)	23.5 (1.42)	22.4 (2.59)	19.1 (3.74)
Average hours worked per week	37.1 (0.18)	35.8 (0.88)	31.3 (1.47)	24.7 (2.77)
Average hourly wage	$11.40 ($0.17)	$10.40 ($0.32)	$10.50 ($0.58)	$9.20 ($1.64)
Paid vacation or sick leave	56.6 (0.72)	54.6 (3.31)	49.6 (6.46)	43.8 (10.67)
Health insurance	55.5 (0.79)	47.7 (3.32)	40.4 (6.31)	29.2 (9.78)
Retirement benefits	38.7 (0.78)	39.0 (3.30)	41.5 (6.43)	31.5 (9.99)
Engagement in education, employment, or training since high school		94	95.4 (2.04)	85.0 (5.11)
Lived independently	59.0 (1.63)	44.7 (2.68)	50.5 (5.01)	26.4 (6.56)
Lives semi-independently	1.8 (0.18)	1.7 (0.70)	6.0 (2.38)	8.2 (4.09)
Have had or fathered a child	28.4 (0.57)	29.4 (2.63)	20.6 (4.48)	7.4 (3.95)
Married	19.3 (0.53)	13.4 (1.97)	11.4 (3.50)	3.8 (2.86)
Savings account	63.3 (0.92)	59.0 (2.86)	64.7 (5.32)	64.3 (7.22)
Checking account	73.9 (0.80)	58.7 (2.85)	73.5 (4.89)	46.9 (7.47)
Credit card	61.1 (0.92)	41.4 (2.85)	52.9 (5.59)	29.2 (6.81)
Food stamps			15.1 (5.56)	38.8 (13.13)

continued

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TABLE 2-4
Continued

	General Population	All Disabilities	Hearing Impairment	Deaf-Blindness
	Mean (SE)	Mean (SE)	Mean (SE)	Mean (SE)
Friends outside of school or work weekly		78	76.3 (4.79)	62.3 (7.31)
Communicating by computer daily		32.0 (2.69)	51.4 (5.50)	41.2 (7.37)
Community participation		51.7 (2.73)	59.3 (4.86)	66.9 (6.78)
Driver's license/learner's permit		77.7 (2.40)	83.5 (4.07)	26.9 (6.64)
Registered to vote		71.0 (2.64)	71.0 (5.04)	56.9 (7.42)

NOTE: SE = standard error.

[a]N = 4,810 in Wave 5 that were out of high school when interviewed in 2009; 13- to 16-year-old students were selected in Wave 1, and their average age was 14.4 years in 2000; 40.2 percent of Wave 5 participants were 24 years or older; 65.6 (2.57) percent white, 20.2 (2.17) percent African American, and 14.2 (1.89) percent identified as Hispanic in Wave 5 interviews.

As young adults, they were becoming independent, forming relationships, moving out on their own, driving, and voting at high rates. The set of young adults with hearing loss appeared to be quite similar to the entire study cohort and to the general population on many measures. The majority of both groups saw friends weekly, engaged in community activities, and were registered to vote. In summary, this study showed that children with hearing loss transition to adulthood similarly to young adults without hearing loss in many ways. However, there are very limited data about their hearing health care needs or how its affordability may limit their access and opportunities.

Economic Burden of Hearing Loss

There are no population-based longitudinal data that measure the economic impact of hearing loss. Modeling the economic cost to society of hearing loss has been approached in several ways with varying assumptions. Mohr and colleagues (2000) focused on severe to profound hearing loss and estimated the costs over a lifetime to an individual to be $297,000 (averaged across age at onset), with most of the losses (67 percent) due to reduced work productivity. The study estimated that persons who experience severe to profound hearing loss before retirement are expected

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to earn only 50 to 70 percent of what their peers earn who do not have hearing loss. Ruben (2000) used several sources of labor and disability data to look at the economic effects of communications disorders, with some data focused on hearing loss, and found negative impacts of hearing loss on individual income and significant underemployment of individuals with hearing loss. Stucky and colleagues (2010) used a simulation model based on national estimates of the prevalence of hearing loss in individuals age 65 years and older across the range of hearing loss, as well as several sources of economic data, and estimated that the total costs of first-year treatment of hearing loss in 2002 were approximately $1,292 per person, or $8.2 billion nationally, and projected that by 2030 these costs would increase to approximately $51.4 billion nationally. They also estimated the 2002 lost productivity costs attributable to hearing loss in this age group to be approximately $1.4 billion nationally. Simpson and colleagues (2016) examined health care cost data from privately insured adults age 55 to 64 years and found higher health care costs for a number of chronic health conditions for individuals with a diagnostic code for hearing loss as compared with a matched group without that diagnostic code. Emmett and Francis (2015) examined data from the 1999–2002 cycles of NHANES that included audiometric evaluation and a questionnaire on income. Their study found hearing loss to be associated with a 1.58 times higher odds of low income and 1.98 times higher odds of being unemployed or underemployed in adults age 20 to 69 years. The authors noted that these are cross-sectional data that cannot be used to establish causation and pointed to the need for longitudinal studies.

PREVENTION OF HEARING LOSS

Only one small, randomized controlled trial has been conducted to evaluate interventions (other than hearing technologies) for age-related hearing loss (Durga et al., 2007). This trial of folic acid supplementation in the Netherlands demonstrated that in a group of 50- to 70-year-olds, those participants who received 800 µg/day of folic acid experienced smaller declines in hearing at low frequencies (pure tone average 0.5–2 kHz, both ears) during a 3-year follow-up period than did participants who received a placebo (1.0 dB versus 1.7 dB HL, respectively) (Durga et al., 2007). Although this study is not generalizable to the United States where foods are fortified with folate and thus additional supplementation may provide little additional benefit, it suggests that certain nutritional interventions may delay or slow the deterioration of hearing with aging.

Hearing loss prevention efforts targeting all ages largely focus on reducing exposure to intense noise or to sustained high levels of noise by reducing noise volume or increasing the distance from the noise source; by using ear

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muffs, ear plugs, or other hearing protective devices; and by using other noise-reducing strategies (NHS, 2015; NIDCD, 2008). Additionally, the avoidance of ototoxic medications, some specific chemical exposures, and other environmental exposures of concern can be considered. Whether healthy lifestyles have any benefits in preserving auditory function remains to be seen.

The risk factors and exposures reviewed above preceded the development of hearing loss, but these factors may not cause hearing loss. Evidence that there are modifiable risk factors for hearing loss is limited by the paucity of prospective, population-based data. There is suggestive evidence that socioeconomic status and obesity are associated with a risk of hearing loss. The reported prospective associations summarized above, along with the pronounced decline in hearing loss across generations, suggest there may be ways to reduce the risk or slow the progression of hearing loss with aging. Additional prospective studies are needed to replicate these findings and strengthen the evidence. Randomized controlled trials of interventions to determine the impact of reductions in obesity or waist circumference on hearing may be warranted. Including measures of hearing in trials aimed at reducing hyperglycemia, atherosclerosis, and chronic inflammation for other health reasons may help to elucidate the roles of these conditions in declining hearing acuity among adults.

For age-related hearing loss, there is insufficient evidence to support interventions for primary prevention. However, ongoing research is seeking to identify drugs that act on oxidative stress pathways, inflammation, and hormonal regulation that may have beneficial effects on hearing. Although some surgical and medical treatments are available for some forms of middle-ear disease and sudden-onset hearing loss, there are no medical or surgical treatments to cure age-related hearing loss. At this time, tertiary prevention methods for helping individuals manage their hearing loss and reduce the impact of hearing loss on their quality of life are available (see Chapters 3, 4, and 6).

NEXT STEPS AND RECOMMENDATION

The paucity of data in many areas of hearing health care will be highlighted throughout this report. Given the number of people with hearing loss and the opportunities to improve their function and quality of life, more can be done to strengthen the evidence base. Of the numerous factors that have contributed to hearing health care's lack of a strong research base, the committee describes just a few:

- *Lack of health insurance coverage for hearing health care*—Evidence of improved patient outcomes is a general requisite for

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health insurers, policy makers, and others making decisions about payment for health care interventions. However, because few health insurance plans or programs provide reimbursement for hearing health care (see Chapter 5), there has not been a demand for this research.

- *Nature of the devices and interventions*—Hearing aids are fairly low-risk medical devices, and the Food and Drug Administration's regulatory processes for approval of hearing aids do not require clinical trial data (unless significant changes are sought to previously approved models). Therefore, randomized controlled clinical trials evaluating the efficacy of hearing aids to improve health outcomes have been limited (see Chapter 4).
- *Research training changes and public health emphasis*—In general, hearing loss has not been viewed as a public health concern, and audiologists and others are often not trained in public health research methodologies. Additionally, health services researchers, health economists, and epidemiologists receive little training about sensory disorders. Strengthening the research training programs and encouraging multidisciplinary teams to address the many research needs will improve the quality of the evidence in hearing health care.

The research needed to advance the effectiveness of hearing health care services and technologies, particularly comparative effectiveness studies, is described in Chapters 3 and 4. Chapter 5 discusses cost effectiveness research and details the urgency for demonstration projects and other studies to be conducted to fill the gaps in research on interventions, outcomes, and impacts. In addition, research efforts also need to focus further on improving public awareness, reducing stigma, and engaging community organizations and businesses in ensuring that hearing- and communication-friendly environments are available (see Chapter 6).

Well-designed longitudinal population-based studies that adequately control for confounders are needed to definitively determine the impact of hearing loss on adult individuals, families, and society. Additionally, the gaps in population-based surveillance efforts pertinent to hearing loss include insufficient knowledge about variations in the incidence of hearing loss among and across racial and ethnic populations and across geographic areas and insufficient knowledge about the impact of hearing loss on social function, employment, quality of life, independence, and the need for social services. This absence of evidence is striking given that the Global Burden of Disease project has ranked hearing loss as the fifth leading cause of years lived with disability—higher than other chronic diseases of aging such as diabetes, dementia, and chronic obstructive pulmonary disease

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(Global Burden of Disease Study 2013 Collaborators, 2015). Learning more about the economic burden of hearing loss should be a priority.

Strengthening research in hearing health care will need to involve a more robust set of metrics for assessing and defining hearing loss and communication abilities, with a focus on measures that are applicable to communicating in the complex environments of daily life. This goal has also been identified in the NIDCD Strategic Plan (NIDCD, 2015). As noted above, further collaborative and interdisciplinary efforts in hearing loss research are needed. Additionally, training in research methodologies needs to be strengthened for audiologists and other hearing health care professionals. Accreditation organizations involved with monitoring education programs could incorporate requirements for research training into standards for academic programs.

Data sources and research opportunities also need to be expanded. The current focus of the hearing-related programs at the CDC is on childhood hearing loss and newborn screening (CDC, 2015b). In addition to these vital programs, it is important to expand CDC's role and research in adult hearing loss to ensure that this serious public health concern benefits from the population-based approaches and public health opportunities that are available through CDC and through state public health departments.

Goal 1: ***Improve Population-Based Information on Hearing Loss and Hearing Health Care***

Recommendation 1: The National Institutes of Health, the Centers for Disease Control and Prevention, the Patient-Centered Outcomes Research Institute, the Department of Defense, the Department of Veterans Affairs, state public health agencies, and other relevant government agencies, as well as nonprofit organizations, hearing health care professional associations, academic institutions, and researchers, should strengthen efforts to collect, analyze, and disseminate prospective population-based data on hearing loss in adults and the effects of hearing loss and its treatment on patient outcomes.

Specifically,

- Support and conduct studies to develop, evaluate, strengthen, and align metrics for hearing loss and communication abilities;
- Support and conduct studies, including longitudinal studies, in diverse populations to better understand
  - the risk and natural history of hearing loss,
  - risk factors and comorbidities of hearing loss,
  - hearing health care needs, and

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  - the impact of hearing loss and its treatment on health, function, economic productivity, and quality of life; and
- Develop and strengthen research training programs to address hearing loss as a public health concern with attention to cross-disciplinary training on sensory disorders, epidemiological methods, advanced biostatistics, and health services and health economics research methods.

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3

Hearing Health Care Services: Improving Access and Quality[1]

Although it is widely recognized that hearing aids and hearing assistive technologies can be key components to improving hearing and communication abilities, the critical role that hearing-related services can play in hearing health care is often overlooked. These services include the systematic and comprehensive assessment of an individual's hearing and communication difficulties, diagnosis of any underlying medical conditions, evaluation of the individual's hearing loss and treatment needs, auditory rehabilitation, and counseling and other services that help the individual to maximize his or her hearing and communication abilities. These services are provided by a range of hearing health care professionals.

Hearing health care is facing challenges similar to those being addressed in many other facets of health care in the United States. Hearing health care is often expensive and underutilized by many of the people who need it. Entry into the hearing health care system can occur by multiple pathways (audiologists, hearing instrument specialists, otolaryngologists, primary care providers, self service, and others) (see Box 3-1). Consumers can be left with no clear guidance on what will best fit their financial, health, social, and hearing needs (NIDCD, 2015). When left to traverse this complex system, even those patients who are fortunate enough to have the time,

[1]For accuracy when referring to findings and conclusions in published studies on hearing health care services, only the specific professions included in a given study are referred to in the study-related text of this report. However, following the discussion of such studies, the committee's commentary on the larger implications and applications of the study findings are broadened to include all relevant hearing health care professions.

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Box 3-1 PROFESSIONS INVOLVED IN HEARING HEALTH CARE

Audiologists

Audiologists are nonphysician health care professionals trained in the assessment, treatment, and rehabilitation of hearing, balance, and related disorders of the ear and hearing. Audiologists offer services to identify individuals with hearing difficulties; determine the cause of hearing loss; assess hearing needs; treat needs using hearing aids, hearing assistive technologies, and/or auditory habilitation and counseling services; and educate individuals and family members about hearing loss prevention and accommodation. Currently, audiology professional organizations, academic accreditation bodies, and the majority of state licensure laws require a doctor of audiology graduate degree, which typically requires 4 years to complete, in addition to a bachelor's degree. All states require a graduate degree, a qualifying examination, and supervised experience in a clinical fellowship as well as continuing education. State licensing requirements vary. There are approximately 12,250 practicing audiologists in the United States, and they are primarily located in urban areas (BLS, 2014a).

Hearing Instrument Specialists

Also referred to as *hearing aid specialists*, hearing instrument specialists are qualified to identify individuals with hearing loss, assess their need for hearing aids, dispense hearing aids, and educate individuals and their family members about hearing loss. In most states, state laws require that hearing instrument specialists have, at minimum, a high school diploma, a 2-year apprenticeship, and a license to practice. The licensure requirement varies between states, but most require completing an annual application form and paying a fee. Some states require certification which is offered through the National Board for Certification in Hearing Instrument Sciences. There are approximately 5,570 hearing instrument specialists in the United States, and most are located in large cities (BLS, 2014b).

Otolaryngologists

Otolaryngologists are physicians trained in the medical and surgical management and treatment of patients with diseases and disorders of the ear, nose, throat, and related structures of the head and neck. After an otolaryngology residency, some

finances, knowledge, skills, and patience necessary to navigate the process may find the process and outcomes to be frustrating and unsatisfactory (Pacala and Yueh, 2012). Furthermore, there have been few randomized controlled trials that have examined the degree of relative effectiveness of and the quality of care provided by these various services; much remains unknown. For individuals in need of hearing health care but unable to overcome the time, financial, and information barriers, there is a lack of information about the options available regarding services and technolo-

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otolaryngologists obtain further fellowship training in otology or neurotology to focus exclusively on the medical and surgical conditions of the hearing and balance system. These practitioners are eligible for subspecialty board certification in neurotology. Otolaryngologists are trained to evaluate conditions of the ear that could affect hearing or that require further medical or surgical evaluation. In 2009 just over 10,000 otolaryngologists were estimated to be working in the United States, but there has been a decline in the number of residents seeking board certification since 2006. There have also been changes in their geographic distribution in the United States during this time; from 2004 to 2009, 20.9 percent of counties lost otolaryngologists (Neuwahl et al., 2012).

Primary Care Providers

For most people, primary care providers (such as family practice physicians, geriatricians, nurse practitioners, and physician assistants) are the first point of contact with the health care system (Flocke et al., 1998; Green et al., 2001). Many primary care providers practice within a comprehensive patient-centered medical home (Rosenthal, 2008). They establish long-term relationships with patients and provide care across the spectrum of ages, diseases, and social circumstances (DeVoe et al., 2011; Pandhi and Saultz, 2006; Phillips et al., 2014; Saultz, 2003; Saultz and Albedaiwi, 2004; Saultz and Lochner, 2005; Worrall and Knight, 2006), which can put them in a position to help identify their patient's hearing loss as a possible cause of or confounding factor for social withdrawal, depression, or reduced interactions with family members (Bagai et al., 2006). Primary care providers can be the first to assess and diagnose patients with hearing loss and, in some cases, may be able to treat the patient without a referral to a hearing health care professional. For example, blockage of the ear canal with cerumen can be easily remediated. It is also within a primary care provider's scope of practice to treat outer or middle ear infections as well as to identify and discontinue ototoxic medications, such as certain antibiotics or high-dose nonsteroidal anti-inflammatories. They are also trained to conduct simple hearing screening tests and primary otologic examinations. If the examination identifies hearing loss but does not reveal an obvious cause that is treatable in a primary care setting, referrals are provided to the appropriate specialist (Yueh et al., 2003).

gies and little support to help the consumer understand and compare the potential benefit of various services and technologies.

Access to care has been defined as "the timely use of personal health services to achieve the best possible health outcomes" (IOM, 1993, p. 33), and according to Healthy People 2020, it encompasses the components of coverage, services, timeliness, and workforce (Healthy People, 2016). *Quality of care* is the "degree to which health services for individuals and populations increase the likelihood of desired health outcomes and are

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consistent with current professional knowledge" (IOM, 1990, p. 4). *Equity* is achieved by removing any systematic differences in the use and outcomes among groups regardless of whether these differences result from financial or other barriers to care (IOM, 1993). This chapter will delve into the practice and delivery of hearing health care and the opportunities to improve access, quality, and equity throughout the system.

SERVICES-BASED INTERVENTIONS FOR HEARING LOSS

Understanding the range of hearing health care services can be challenging. Hearing problems sometimes develop rapidly along with other symptoms such as ear pain, dizziness, or tinnitus, which can herald the onset of infection or disease. Sometimes hearing problems develop so slowly that they are not recognized until a family member or friend expresses concern about difficulties carrying on a conversation with someone due to that person's apparent poor listening or inattention. This is often the case in age-related hearing loss. Hearing health care ranges from the identification and management of diseases or conditions that may cause hearing loss, which sometimes require advanced medical or surgical care, to rehabilitation and the use of hearing aids and hearing assistive technologies to minimize the psychosocial and quality-of-life consequences of permanent hearing loss. As a result, the consumers of hearing health care services may require services from physician or nonphysician professionals, depending on the cause of the hearing problem, the ability of modern medicine to treat any underlying condition (if present) and restore hearing, and the person's need for help coping with difficulties experienced in day-to-day listening activities and communication challenges. Individuals with lower levels of health literacy may not understand the different types of, causes of, and service providers for hearing loss, which adds to the confusion these individuals may face when seeking care for hearing problems (Reese and Hnath-Chisolm, 2005). Furthermore, personal preferences, lifestyle, and communication needs, among other things, may drive different individuals with the same type of hearing loss to opt to use different services or different modes of service delivery (e.g., in-person, online, telehealth) to meet their needs.

Understanding the range of hearing health care is also important for identifying key indicators for the quality of care. Hearing loss can be understood in the context of disease, and quality can be defined as accurate diagnosis and appropriate and timely medical treatment within the context of the *International Classification of Diseases*. Hearing loss can also be understood within the context of communicative and psychosocial functioning, and in that case quality can be defined based on the *International Classification of Functioning, Disability and Health* (ICF). Therefore, defining quality depends on the dimension affected by the hearing impair-

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ment. Hearing health care refers to services that can be focused on treating disease, function, or both. If the problem is disease focused, quality can be measured in terms of a timely and successful medical or surgical intervention or reduced morbidity associated with the disease. When the problem is function focused, affecting everyday auditory and communicative activities, social participation, and quality of life, the quality of care can be judged by improvement in hearing and communication abilities and in overall function and quality of life; objective measures are difficult to obtain so an individual's satisfaction remains the primary metric. The quality of audiological management might be defined in terms of the degree of restoration of activities and participation (relative to optimum potential). When the problem is multifactorial, a combined approach is indicated.

Under optimal conditions, hearing health care is a coordinated system, capable of addressing hearing loss from both a medical/disease focus and a functional/rehabilitative focus. Thus, the key to offering efficient and effective hearing health care services is assessing hearing-related problems from both a disease and function perspective and accessing the right services and technologies for the specific needs of the individual, at the lowest cost.

Hearing Health Care Utilization

Most data available on the utilization of hearing health care are from surveys asking people if they have had a recent hearing test or about their use or nonuse of hearing aids. In the 2005–2006 and 2009–2010 National Health and Nutrition Examination Survey datasets, only 39.5 percent of adults ages 70 years and older had had a hearing test in the previous 4 years (Nieman et al., 2016). Overall rates of recent hearing testing were similar for white Caucasians, African Americans, and Mexican Americans (39.1 percent, 43.3 percent, and 41.5 percent, respectively). Within the same study population of adults 70 years of age or older, a multivariable model controlling for age, degree of hearing loss, marital status, and self-reported health conditions found that African Americans, people who were widowed, and those with a college education were more likely to have had hearing tests than were white Caucasians, people who were married, and those with a high school education, respectively. There was no difference in the extent of recent hearing testing between Mexican Americans and white Caucasians. These national data do not address disparities for other minority groups and may not reflect regional or local variations in testing.

In the population-based Epidemiology of Hearing Loss Study cohort, whose participants had an average age of approximately 66 years, 36 percent had never had their hearing tested before the baseline examination in 1993–1995 (Cruickshanks et al., 1998). More recently, in the study which

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followed up on the adult children (with and without hearing loss) of the participants in that study, 78 percent of those adult children had not talked with their doctors about a hearing problem in the past 5 years, and only approximately 34 percent of the adult children ages 21 to 69 years and approximately 55 percent of the adult children aged 70 years and older had had their hearing tested in the previous 5 years (Nash et al., 2013). Among those who had not had hearing testing in the previous 5 years, 9 percent had a mild to severe hearing loss according to the audiometric examination, which was part of the study. Because audiometric testing is not routinely performed in the United States, many adults with hearing loss remain unaware of a decline in their auditory function. With few published studies addressing hearing health care in the general U.S. population, little is known about the factors or types of symptoms or complaints that make individuals more likely to seek hearing health care.

It is well recognized that the prevalence of hearing aid use is quite low in the United States compared with the prevalence of hearing loss. Data on the extent of hearing aid use are discussed in Chapter 4.

Screening and Case Finding

In 2011 the U.S. Preventive Services Task Force (USPSTF) examined the issue of screening for hearing loss as a population-wide measure during primary care visits for asymptomatic adults aged 50 years and older but did not recommend screening due to insufficient evidence to adequately weigh the balance of potential benefits and harms of screening for this asymptomatic population (I Statement[2]) (Chou et al., 2011; USPSTF, 2014). The USPSTF noted that potential harms from screening could include anxiety, labeling, stigma, or other psychosocial effects but that no studies were available at the time of their analysis to evaluate these outcomes. The USPSTF added, "Because screening and confirmatory testing for hearing impairment are noninvasive and serious harms of treatment are rare, there are probably little to no adverse effects of screening for hearing loss" (USPSTF, 2014). The committee for the present report finds that lack of a USPSTF recommendation for population-wide screening for hearing loss in asymptomatic adults (such as has been recommended for colorectal screening) should not diminish the importance of discussing hearing health on an individual basis in primary care visits when patients present with complaints or the provider has reason to be concerned.

[2] An "I Statement" from the USPSTF means that "the USPSTF concludes that the current evidence is insufficient to assess the balance of benefits and harms of the service. Evidence is lacking, of poor quality, or conflicting, and the balance of benefits and harms cannot be determined" (USPSTF, 2013).

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Hearing difficulties can negatively affect communication in any setting, and effective communication is particularly important in the health care setting both for patient safety (Middleton et al., 2010) and to enable the person-centered approach toward which the U.S. health care system is moving. For these reasons, it is important to consider changes in hearing ability during patient wellness and medical visits for those patients who express concern about their hearing and are seeking help (see section on primary care providers later in this chapter).

Because hearing tests are usually not a routine part of primary care visits, the onus often remains on the individual or family to recognize the symptoms and seek appropriate hearing health care. There are ongoing efforts to improve hearing health literacy, including the development of tools to help individuals determine when their hearing problems might stem from a medical condition and whether the problems can be managed by audiologists or other nonphysician professionals. Development is ongoing, but initial results are encouraging (Zapala et al., 2015).

Evaluation and Diagnosis

Individuals presenting for a hearing evaluation may be seeking audiological services for several reasons, including self-recognized concerns about the ear and hearing; a referral following signs of poor hearing found during a medical evaluation; the request of family members or friends who suspect hearing loss; or as part of routine health care. The evaluation may vary somewhat among individuals based on such factors as risk for ear disease. Regardless, the objective of the evaluation is always to identify treatable conditions and to assess the impact of any hearing loss on overall function.

Patient History and Otoscopic Exam

The first step is to obtain a general medical and hearing history in order to gather information about the duration and severity of hearing loss, hearing-related medical history (e.g., previous ear infections, symptoms of ear pain or drainage, family history of hearing loss, prescription and over-the-counter medication history, etc.), and previous use of hearing loss interventions. Further interview questions and standardized questionnaires may be used to assess the impact of hearing loss on the individual's day-to-day life.

Second, an otoscopic examination is performed to evaluate the pinna (outer ear), external auditory canal, and tympanic membrane for any conditions that could be contributing to hearing loss or that may require further evaluation and treatment (e.g., cerumen impaction, an abnormality of the tympanic membrane, etc.). Based on the findings during the history and

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exam, it may be appropriate to refer the patient to a physician for additional evaluation.

Diagnostic Testing

Pure tone audiometry Pure tone audiometry measures the lowest intensity level at which an individual can detect calibrated pure tones at specific frequencies between 250 and 8,000 hertz (Hz). The level at which a person is estimated to detect a calibrated pure tone 50 percent of the time is defined as a "threshold." Intensity levels are calibrated in decibels (dB) relative to average normal hearing (dB hearing level or dB HL) and can range from –10 to 120 dB HL. Typically, pure-tone thresholds between –10 and 20 dB HL are considered within normal limits.

Pure tones can be delivered through headphones to the right and left ears individually so that the sound travels through each ear canal and middle ear to the cochlea within the inner ear (termed "air conduction" hearing). Alternatively, pure tones can also be delivered to the skull using a bone oscillator so that the sound passes through the skull and directly stimulates the cochlea, bypassing the ear canal and middle ear ("bone conduction" hearing). By looking at the patterns of air conduction and bone conduction thresholds, the practitioner can make some conclusions about the nature of the hearing loss. When hearing loss is the result of damage to or disease of the ear canal, eardrum, or middle ear, air conduction thresholds will be higher than bone conduction thresholds—termed a "conductive hearing loss." When air conduction and bone conduction thresholds are similar but fall outside the limits of normal hearing, the hearing loss is called a "sensorineural hearing loss."

Speech audiometry In the United States, speech audiometry uses simple, two-syllable words presented via headphones to each ear individually to determine the lowest intensity level at which 50 percent of the words are correctly repeated, termed a *speech reception threshold*. Speech reception thresholds ranging from –10 to 20 dB HL are considered within normal limits. There are also forms of speech-in-quiet and speech-in-noise testing designed to emulate commonly occurring listening environments, which can contribute to functional needs testing and to evaluating an individual's expected benefits from amplification, described below. Disproportionately poor speech recognition performance in relation to an individual's thresholds for pure tones may suggest changes to the function of the cochlea, auditory vestibular nerve, brainstem, or central processing.

Immittance audiometry Immittance audiometry (sometimes referred to as "acoustic impedance" or "admittance testing") includes tympanometry and

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assessments of the acoustic reflex threshold. These tests are typically used to establish middle ear pressure and to estimate the transfer of acoustic energy through the middle ear system, which can help differentiate between different disorders.

Functional Communication Assessment

The aims of a functional communication assessment are to define an individual's audiologic and nonaudiologic needs related to hearing and communication, establish the impact of hearing loss on the individual and his or her communication partners (e.g., family), and to determine from which services and technologies the individual may derive benefits (ASHA, 2016f; Valente, 2006). When there is a strong relationship between measured hearing impairment and reported hearing and communication difficulties, managing the hearing difficulties through technologies and/or rehabilitation may be beneficial and sufficient. When there is a mismatch between reported difficulties and the magnitude of measured hearing difficulty, other factors must be explored, including the unique environments that the individual may operate in, the behaviors of other people who frequently interact with the individual, and psychological and cognitive factors such as intellectual capacity, anxiety, and depression. These factors match the biopsychosocial model underpinning the ICF.

Along the lines of the ICF framework, audiological testing captures primarily the impairment aspect of auditory function. However, audiologists must be mindful of hearing difficulties that arise with *noncommunicative activities* such as the detection of threats and alarms; the ability to localize sounds in space; and recognizing the sounds of events in the surrounding environment (a coin dropping on the floor, for example, or an automobile accident outside of the building). There are also *communicative activities* that can be difficult to assess and quantify because each individual lives in a unique auditory environment, but there are several touchstone conditions, such as the ability to understand a conversation in one-on-one and group settings, and the abilities to recognize and understand low-level or whispered speech, speech presented in background noise, and speech presented at high intensity levels.

Individuals being evaluated for the functional consequences of hearing loss most likely have a chronic problem, which is unlikely to improve spontaneously or through medical or surgical treatments. Consequently, treatment must focus on maximizing residual capacity to facilitate participation to the greatest extent possible.

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Evaluation and Diagnosis Summary

The results of the audiological evaluation should answer the following questions:

- Is the hearing loss or other form of hearing loss a result of a disease process that requires medical care?
- Is the magnitude of any measured hearing loss sufficient to create a functional deficit, and if so, can diminished function explain the concerns of the individual being evaluated?
- If there is a mismatch between the magnitude of the hearing loss and the concerns of the individual being evaluated, are there identified psychosocial factors to explain the mismatch, and are any additional investigations or referrals necessary?
- If there is no mismatch, which strategies will be the most effective for maximizing function (e.g., technologies, rehabilitation)?
- If the magnitude of any hearing loss or other form of auditory impairment is not sufficient to cause concern about disease or impaired function at present, what is the risk for developing hearing loss in the future, and are there any health or lifestyle changes that might mitigate future risk?

The answers to these questions drive the individualized audiological treatment plan. When an audiological evaluation is performed as an adjunct to a physician's medical evaluation, some of these questions may be deferred to the referring physician. The same set of tests of auditory function can be used to evaluate both the possibility of disease and the effects of hearing loss on function, although most of the traditional test battery is focused on the diagnosis of disease. Additional tests, such as otoacoustic emissions tests and tests for the characterization of tinnitus, may be used to distinguish between more complex forms of otologic disease or auditory dysfunction and are not reviewed here.

Treatment

Treatment for hearing loss can take many forms and will differ based on an individual's type of hearing loss, unique needs in daily life, personal preferences, and financial means. Treatments can include such services as auditory rehabilitation and counseling as well as various technologies (see Chapter 4), although not every person with hearing loss is a candidate for a hearing aid or other assistive technologies. Medical and surgical treatments are not part of this report's statement of task and will not be discussed.

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Selection, Fitting, Maintenance, and Use of Hearing Technologies

Many hearing health care professionals provide services and support to users of hearing technologies. The most common device-related services are the provision of and assistance with using hearing aids (see Chapter 4 for a discussion of hearing aids and hearing assistive technologies), which includes hearing aid selection, fitting, verification, and validation within the context of the functional communication assessment (for best practice guidelines for audiologic management of hearing loss in adults, see ASHA, 2016f and Valente, 2006; for a review of the components of hearing aid fitting management across worldwide guidelines, see Oh and Lee, 2016). Following best practices in audiology in the United States, selection of a hearing aid is based on an individual's needs and requirements for hearing aid gain, ear canal geometry, occlusion, special features (e.g., directional microphone, noise reduction circuit, feedback suppression, telecoil), ease of insertion and manipulating volume controls, and cosmetics. Determination of gain processing is initially based on a validated prescriptive procedure, such as those developed by the National Acoustics Laboratories (Byrne and Dillon, 1986; Byrne et al., 2001; Johnson and Dillon, 2001; Mueller, 2005). Other aspects of the hearing aid evaluation include selection of output limiting and compression features, and consideration of the need for special technologies that go beyond the scope of this report (e.g., bone-anchored hearing aids, contralateral routing of signal fittings, and middle-ear implants). Gain verification using a probe microphone ("real-ear" measures) is the most reliable method to validate that prescriptive gain targets have been achieved (Abrams et al., 2012; Mueller, 2001). Best practices for operating, maintaining, and using hearing aids are then discussed, with emphasis on both the devices and the individual. Device-related orientation includes instruction on hearing aid insertion and removal, use schedule, hearing aid features, reducing feedback, changing batteries, and performing maintenance. Patient-related orientation includes setting goals and expectations, methods for adjusting to amplification, counseling on communication strategies, and considerations for supplementary rehabilitation, such as speech reading or speech-perception training. Finally, a plan for assessment of treatment benefits is initiated using validated subjective and objective outcome measures (for examples, see Cox and Alexander, 1995; Cox et al., 2003; Dillon et al., 1997; Ventry and Weinstein, 1982). Follow-up visits may be required to perform further adjustments and to provide further education on the correct operation, maintenance, and usage of the hearing aid(s) or other technologies, including changing of batteries (Desjardins and Doherty, 2009). In the longer term, additional visits may be necessary to ensure that the hearing aids continue to perform optimally and that hearing remains stable.

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Although hearing aids are the more common treatment for which hearing health care professionals provide services and support, these professionals can also provide similar services for hearing assistive technologies (such as products connecting with the television or phone, see Chapter 4) even if they do not sell those technologies. Increased attention to hearing assistive technologies is needed in hearing health care professional training to enable these professionals to provide individuals with hearing loss information on the range of technologies available and to help individuals determine what technologies might be useful to them given the nature and extent of their specific hearing loss and communications needs. Tables 3-1 and 3-2 provide the distribution of hearing health care professionals who fit hearing aids and the distribution of venues that provide hearing aids, respectively, from one survey of the field.

Auditory Rehabilitation

Pharmaceuticals and medical devices cannot always provide definitive solutions for chronic health conditions or meet the specific needs and preferences of every individual. Similarly, for individuals with hearing loss, hearing aids cannot unequivocally address the multifaceted challenges of living with hearing loss, such as the hearing loss itself, communication difficulties, changes in quality of life, and possible comorbidities (see Chapter 2). Like other chronic health conditions, hearing loss requires a holistic, individual-centered approach to care that blends both medical and nonmedical solutions, such as auditory rehabilitation (also referred to as aural rehabilitation or audiological rehabilitation). Overall, auditory rehabilitation is designed to help individuals learn to live with hearing loss, provide information on the use of hearing aids and hearing assistive technologies, teach strategies for better listening and communication, and, in some cases,

TABLE 3-1
Hearing Aid Fittings Dispensed by Profession According to the 2008 MarkeTrak VIII Survey

Profession	Percent of Fittings
Audiologist	62.9
Hearing Aid Specialist	31.1
Physician	1.5
Other	4.5

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TABLE 3-2
Hearing Aid Modes of Delivery
According to the 2008 MarkeTrak VIII Survey

Source of Hearing Aid Distribution	Percentage of Survey Takers
Audiologist's office	31.2
Hearing aid specialist's office	27.5
Veterans Health Administration	14.5
Ear doctor's office	9.2
Mail order	4.7
Wholesale club	2.4
Department store	2.1
Clinic	1.2
Military installation	1.2
Hospital	1.1
Family doctor's office	0.5
Home	0.5
Drugstore	0.3
Other	2.4

SOURCE: Kochkin, 2009. Republished with permission of Newstex, LLC.

offer psychosocial support (ASHA, 2016b; Boothroyd, 2007; Sweetow and Palmer, 2005).

Auditory rehabilitation programs can take many shapes and reflect a variety of paradigms. For example, these programs may be offered with a group in a community setting or on an individual basis in an audiology clinic. Sessions may be led by an audiologist, a speech-language pathologist, or a trained volunteer (Bally and Bakke, 2007). Alternatively, individuals may take part in self-paced, multimedia rehabilitation programs from their home. Programs have been designed for an array of individuals with varying degrees and types of hearing loss and across all age groups. These programs may be focused on individuals who are new to using hearing aids, those who are experienced hearing aid users, or those who have hearing loss but do not use hearings aids. An individual's needs, preferences, abilities, and goals, along with the specific characteristics of the person's auditory disorder, should be considered in order to determine the type of auditory rehabilitation program(s) that would be best suited for that individual. This section will discuss the available evidence for auditory-based rehabilitation programs

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and for counseling-based, supportive programs, both of which may include Internet- and computer-based designs that are becoming more common.

The goal of auditory rehabilitation programs is to improve speech communication through the use of auditory training, and most of the studies that evaluate auditory training focus on measuring the different aspects of speech recognition. This training may be analytic in nature, centered on differentiating and identifying different parts of speech (e.g., vowels and consonants), or it may be synthetic, teaching listening skills and applying linguistic and context-specific techniques. Some auditory rehabilitation programs combine both of these strategies to maximize the opportunities for positive outcomes for individuals with hearing loss. Although an individual's family may be included in consultations and hearing aid orientation, auditory rehabilitation is typically designed to enhance the speech recognition of the individual with hearing loss and does not involve family members or other communication partners (some programs may incorporate family in home-based practice or in communication strategies training). Sweetow and Palmer (2005) conducted a review of available literature on auditory rehabilitation that included randomized controlled trials, cohort studies, and pre/post study designs, regardless of whether the study design included control groups or reported outcomes using subjective or objective measures; only 6 out of 213 studies met these defined inclusion criteria. The outcomes measured in these studies included factors connected to consonant recognition, speech perception with a range of one word to full sentences, and self-perception. Despite finding methodological shortcomings (e.g., small sample sizes, variable demographic data, a lack of long-term measures, a lack of blinding, inconsistent paradigms, variable outcome measures) and a lack of resounding evidence, the authors cautiously concluded based on a qualitative assessment that auditory training, specifically synthetic training, could be beneficial to individuals with hearing loss for the outcomes that were measured (Sweetow and Palmer, 2005).

Chisolm and Arnold (2012) updated the Sweetow and Palmer review and added four more studies to the analysis.[3] To further examine the evidence in the 10 studies, Chisolm and Arnold (2012) conducted a meta-analysis using the studies that included comparable outcome measures (6 out of 10 studies) related to speech recognition, regardless of factors that varied across the studies, such as listening environment and stimuli. The authors found that in the short term there was a small, but reliable, effect for improvements in speech recognition. Based on their findings, they concluded that "clinicians should have increased confidence in recommending

[3] A comprehensive summary of the studies and the outcome measures that are described in these two reviews can be found in Chisolm and Arnold (2012).

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the use of an auditory training program as a part of a comprehensive auditory rehabilitation plan" (Chisolm and Arnold, 2012, p. 249). However, they cautioned against assuming that improvements would be preserved over a longer timeframe, given a lack of data on long-term outcomes. In a more recent study by Kuchinsky and colleagues (2013), researchers used a physiologic measure of cognitive effort—pupil dilation—to study a speech-perception training program, which is a form of auditory training. The researchers found that participation in auditory training resulted in increased word recognition and that it reduced the cognitive effort required to identify words in the presence of background noise, a common complaint of people with hearing loss.

Of the 10 studies reviewed by Chisolm and Arnold in 2012, the authors concluded that only 1 study provided evidence and methodologies that were sound enough to be considered for clinical implementation—the 2006 study of the computer-based auditory training program, Listening and Communication Enhancement (LACE) (Chisolm and Arnold, 2012; Sweetow and Sabes, 2006). LACE is an interactive, adaptive program delivered in home settings that is available via the Internet, DVD, or CD (Neurotone, 2016; Sweetow and Sabes, 2006). The exercises included in the program are intended to produce "better comprehension of degraded speech, enhancement of cognitive skills, and improvement of communication strategies" (Sweetow and Sabes, 2006, p. 543). Studies of LACE have found statistically significant improvements on most of the outcome measures studied (usually tasks taught within the program related to improving speech recognition and the goals listed above), relatively high rates of compliance, better outcomes for new hearing aid users than for experienced users, and better outcomes for those who completed all of the training sessions than for those who did not (Chisolm et al., 2013; Henshaw et al., 2015; Olson et al., 2013; Sweetow and Sabes, 2006). However, a recent randomized controlled trial in a population of veterans found no statistically significant improvement in outcomes among those using LACE when compared to those using standard of care hearing aid intervention alone (Saunders et al., 2016).

Since the development of LACE, other computer-based auditory training programs have been tested with mixed results (Abrams et al., 2015; Dubno, 2013; Saunders and Chisolm, 2015). Henshaw and Ferguson (2013) conducted a systematic review of literature on these types of computer-based programs. The authors reviewed 13 studies out of 229 that were originally identified. These studies were randomized controlled trials, nonrandomized controlled trials, cohort studies, or pre/post studies. Although the authors identified statistically significant improvements on tasks that were taught within the various programs, the evidence was mixed in terms of improved speech recognition. The evidence suggested that, when reported, there were

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high rates of compliance and that information presented during the training was retained for extended periods of time (up to 7 months). Unlike the Chisolm and Arnold (2012) review described above, a meta-analysis was not possible due to the heterogeneity of the studies. Henshaw and Ferguson also described challenges with the large variability in study design, protocols, outcome measures, participant inclusion, and individual benefits that resulted from the training. However, the authors did highlight the potential of computer-based auditory training programs, noting that these programs are easily accessible, customizable and flexible, and both cost and time efficient (Henshaw and Ferguson, 2013). Additionally, researchers have highlighted patient-perceived benefits associated with the use of computer-based auditory programs which include increased self-confidence and general satisfaction and enjoyment (Saunders and Chisolm, 2015; Tye-Murray et al., 2012). Current and ongoing studies of computer-based auditory programs (Miller et al., 2015; Saunders et al., 2016) hold promise for expanding the evidence base of these programs and informing decisions about the design of future programs.

Counseling-Based, Supportive Rehabilitation

Rehabilitation programs that concentrate on counseling/psychosocial support, personal adjustment/coping, and building communication skills offer a platform for improving attitudes and beliefs, building resilience, reducing experienced and perceived stigma, and empowering individuals to take a more active role in managing their hearing loss (also see Chapter 6). These types of programs are usually offered in a group setting and may be led by an audiologist or a trained health professional. Hawkins (2005) conducted a systematic review of rehabilitation programs of this nature which included randomized controlled trials, quasi-experimental study design, and nonintervention cohort studies. Unlike the case with auditory training, which can be evaluated using objective measures, the outcomes measured in these studies tended to be more subjective, assessing individuals' self-perceived changes in personal adjustment/coping, limitations related to their hearing loss, and overall satisfaction with hearing aids. Based on an evaluation of 12 studies (out of 22 identified), Hawkins concluded that there is some evidence that these types of counseling-based programs had a positive effect on self-perception and self-esteem and also positively contributed to the use of enhanced communication skills and hearing aids (Hawkins, 2005). Most of the available studies identified for this review used nonexperimental designs, had small sample sizes (usually less than 50 people), and did not track long-term outcomes—common limitations in this area of literature. Hawkins (2005) hypothesized that the generally strong support among experts and clinicians for counseling-based group

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rehabilitation, despite the lack of conclusive evidence, is a result of clinical experience and observed benefits for patients.

In a subsequent review of the literature, Chisolm and Arnold (2012) narrowed the inclusion criteria to randomized controlled trials with control groups that included outcome measures related to quality of life and reductions in limitations related to hearing loss. The authors found three new studies that met their criteria and revisited 7 of the 12 studies originally reviewed by Hawkins (2005). Upon assessment of the methodologies and the evidence presented in the studies, Chisolm and Arnold determined that the evidence for three of the counseling-based programs (i.e., Chisolm et al., 2004; Hickson et al., 2007; Preminger and Yoo, 2010) was supportive enough to warrant consideration for inclusion in clinical practice. To further examine the available evidence, the authors conducted a meta-analysis of the 10 studies and found statistically significant effects—but large variability—when assessing whether these programs reduced perceived limitations related to hearing loss. As with auditory training programs (discussed above), Chisolm and Arnold concluded that counseling-based rehabilitation programs offer small but reliable benefits and that health professionals can recommend these programs to individuals and their families with increased confidence (Chisolm and Arnold, 2012). Roets-Merken and colleagues (2015) conducted a systematic review and meta-analysis of the literature on counseling-based rehabilitation programs for both hearing loss and vision impairment. The authors evaluated the studies for outcomes specifically related to functional and emotional status, social engagement, and self-efficacy. Based on the six hearing loss studies that used randomized controlled trial or control trial designs and met the inclusion criteria, the researchers concluded that there was no statistically significant effect of these programs on the defined measures related to quality of life and well-being.

Since Chisolm and Arnold (2012) conducted their review of the literature, additional studies looking at counseling-based rehabilitation programs have been published. Box 3-2 provides two examples of recently evaluated rehabilitation programs in the United Kingdom and Sweden that employed interactive strategies to boost knowledge and to respond to the psychosocial needs of people with hearing loss. Borg and Borg (2015) described a rehabilitation program oriented toward young adults, using a nonexperimental design with subjective outcomes, and Ferguson and colleagues (2015, 2016) used a randomized controlled trial design to test an Internet-/computer-based educational intervention for new hearing aid users.

Some of the more integrative counseling-based rehabilitation programs have actively incorporated spouses, communication partners, and family members and have identified possible positive outcomes for both the person with hearing loss and the family member participants (Caissie et al., 2005; Habanec and Kelly-Campbell, 2015; Preminger and Meeks, 2010; Scarinci

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Box 3-2 EXAMPLES OF RECENTLY REVIEWED COMMUNITY-BASED REHABILITATION PROGRAMS

In Sweden, Borg and Borg (2015) developed a rehabilitation program for young adults with hearing loss called the EC program, which was based on principles of empathy and empowerment (E) and competence and counseling (C). The program used short videos, group meetings, CDs, and DVDs during seven or eight, 2-hour weekly sessions to build self-confidence and competence and to foster independence, creativity, and self-awareness. The ultimate goal was to empower the young adults to educate and counsel others about hearing loss and to respond constructively during sometimes difficult, social interactions—a vital skill for the transition to adulthood. The habilitation/rehabilitation centers that implemented the EC program often adopted parts of the program rather than implementing all aspects of it, thus making comparison and evaluation difficult. Overall, the leaders of the programs rated the interventions positively, with indications that the participants had gained greater knowledge about hearing and about how hearing loss affected their lives and interactions with others. The evaluations also concluded that participants were more confident and could more easily explain the challenges associated with hearing loss to others. When asked about how the program could be improved, participants suggested the development of Web-based courses and chat functions that would allow people to connect more readily across geographic regions (Borg and Borg, 2015).

In the United Kingdom, Ferguson and colleagues (2015, 2016) used a prospective randomized controlled trial to test a multimedia rehabilitation program that was designed for first-time hearing aid users. The program included seven interactive modules that featured videos, pictures, diagrams, animations, testimonials, and quizzes to test the users' comprehension of the material. The program, which required less than an hour to complete, was delivered via DVD (for computers or television) or the Internet and could be used in home settings. Six weeks after the completion of the program, participants demonstrated statistically significant improvements and short-term retention of knowledge related to practical (e.g., earmold cleaning, telephone skills) and psychosocial (e.g., the limitations and benefits of hearing aids) areas that were presented during the intervention. Participants rated the program as highly valuable and indicated a preference for the interactive materials over static written resources. Additionally, almost half of the participants watched the modules two or more times (Ferguson et al., 2015, 2016). In their review of the data, the researchers pointed out that participants had higher levels of knowledge related to the limitations of hearing aids than members of the control group, whereas their knowledge about the benefits of hearing aids was the same as that of the control group (Ferguson et al., 2016).

et al., 2013). These types of inclusive, family-centered rehabilitation programs recognize the effects of hearing loss on family members (often referred to as a third-party disability), take the needs of family members into account, and are intended to increase awareness and enhance communication for everyone who is touched by the hearing loss within the family. Using randomized controlled trials, both Preminger and Meeks (2010) and Habanec and Kelly-Campbell (2015) engaged spouses of individuals

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with hearing loss in group-based auditory rehabilitation sessions. Following participation in the programs, spouses reported statistically significant reductions in measures of third-party disability and improvements in communication. Despite the potential value of inclusive, group-based programs, this approach may not always be able to respond to the individual needs, circumstances, and preferences of each of the individuals in the group, suggesting that a combined approach to rehabilitation may optimize results.

In recent years, researchers have also explored the use of computer- and Internet-based modules as cost-effective, convenient mechanisms for increasing access to and use of counseling-based, supportive rehabilitation programs. Many of these programs have been developed using models from auditory training programs. Overall, evaluations of Web-based education and rehabilitation programs have identified positive outcomes, including increases in knowledge, decreases in perceived limitations related to hearing loss, and decreases in depression and anxiety (Ferguson et al., 2015, 2016; Laplante-Lévesque et al., 2006; Thorén et al., 2011, 2014). See Box 3-2 for a discussion of an Internet-based rehabilitation program that was recently tested by Ferguson and colleagues (2016) with 203 new hearing aid users. Internet-based education and rehabilitation programs offer a promising opportunity to extend the reach of limited resources, engage people with hearing loss and their families, and bolster knowledge and confidence.

OPPORTUNITIES TO IMPROVE HEARING HEALTH CARE SERVICES

In considering its task of improving accessibility and affordability of hearing health care, the committee identified a number of opportunities to change hearing health care services for the benefit of the patient and consumer. These opportunities, which are discussed in the sections that follow, include

- Enhance quality in patient–provider interactions
- Involve primary care providers in hearing health care
- Empower consumer and patient use of hearing health care
- Support and engage in quality improvement
- Overcoming disparities in services delivery and access
- Improve and expand the use of auditory rehabilitation programs
- Develop and evaluate innovative models of hearing health care delivery
- Examine the Medicare requirement for physician referral for diagnostic hearing testing

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Enhance Quality in Patient–Provider Interactions

As is the case with other chronic health conditions, the effective diagnosis, treatment, and management of hearing loss is best achieved using a patient-centered approach to care and a collaborative and supportive relationship with the professionals who provide that care. However, interviews of individuals with hearing loss and their families indicate that interactions with health care providers and hearing professionals do not always meet their needs and expectations (Kelly et al., 2013; McCormack and Fortnum, 2013; Southall et al., 2010). Anecdotal evidence from people with hearing loss has shown that some health professionals, like their patients (see Chapter 6), may maintain the beliefs that hearing loss is a natural part of aging and that hearing aids and other treatment options have low levels of efficacy (Gilliver and Hickson, 2011; van den Brink et al., 1996; Wallhagen and Pettengill, 2008). Studies also indicate that hearing loss is often neglected or dismissed in primary care settings, implying that it is not always viewed as a priority despite the potential health implications (see Chapter 2).

Whether increasing slowly over time or occurring with a sudden onset, hearing loss is a condition that needs to be processed and accepted before an individual can be fully ready to take action and consider and adopt treatment options (see the discussion of the transtheoretical model in Chapter 6). Health care professionals can play a positive, supportive role in helping individuals accept and adjust to a diagnosis of hearing loss. However, a review of first-time consultations with audiologists in Australia found a lack of demonstrated empathy and a divergence between the patients' needs and the goals of the audiologists (Ekberg et al., 2014). For example, when the audiologists delivered the diagnosis, two-thirds of them directly transitioned into a recommendation for hearing aids, without allowing the patient time to react or ask questions about the diagnosis and without discussing other available treatment options (e.g., hearing assistive technologies, communication programs, support groups) (Ekberg et al., 2014). Furthermore, audiologists in this study often overlooked the psychosocial needs of their patients. In approximately half of the encounters (51 percent), patients voiced psychosocial concerns and negative attitudes toward the idea of adopting hearing aids, sometimes with an emphasis on perceived stigma. However, the audiologists usually redirected the conversation to a discussion of the various models of hearing aids available. Given these unsatisfactory interactions, many patients left the consultation without agreeing to a treatment strategy. To improve these interactions with patients, Ekberg and colleagues (2014) suggested that the principles of personal adjustment counseling and patient-centered care should be emphasized in training for audiologists. Motivational interviewing—a patient-centered

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approach to counseling and behavior change that has been applied in a number of medical settings (Lundahl et al., 2013)—may also benefit the patient–provider interaction following a diagnosis of hearing loss and in considering patient preferences and needs regarding treatment. At least one study is under way to investigate the potential for using motivational interviewing via the Internet to promote individuals to seek additional hearing health care if they have failed a prior hearing test (Weineland et al., 2015). Optimal patient–provider interactions following a diagnosis require that hearing health care professionals recognize the patient's level of acceptance, adjustment, and readiness for action; identify the patient's information needs; consider whether the patient's level of health literacy may interfere with comprehension (see Chapter 6 for a discussion of health literacy); and provide the appropriate levels of support and empathy to the patient and his or her family, who may also be involved in decision making and care for the individual with hearing loss.

In the context of the social-ecological model (see Chapter 1), the role of health care and hearing health care professionals in educating and supporting individuals and their families about hearing loss, treatment options, and management is critical. The information provided and the attitudes projected by health care providers are consequential in shaping the attitudes and beliefs of individuals and the subsequent actions taken by those individuals. For example, interviews with individuals about the adoption and use of hearing aids indicated that individuals were more likely to pursue the use of hearing aids and overcome challenges in adapting to hearing aids when they developed a good relationship with their audiologist because of such factors as perceived consideration, warmth, and empathy (Dawes et al., 2014). Following a review of available literature, Clements (2015) suggested that the first consultation with an audiologist or other hearing health care professional may have a long-term effect on decision making and outcomes. If the encounter creates a negative patient response, it is more likely that that individual will return to a state of denial about his or her hearing loss (the pre-contemplation phase in the transtheoretical model in Chapter 6, Figure 6-2) and deny the need to take action, further delaying possible opportunities to improve quality of life and well-being (Clements, 2015). The likelihood that an individual will make appropriate decisions about how to move forward in treating hearing loss may be affected by multiple factors, including the cost and convenience of the treatment and the lifestyle and personal attitudes of the patient. One challenge that hearing health care professionals and patients face is ensuring that there is plenty of time for the discussion of options and next steps, particularly regarding the purchase and fitting of hearing aids. The patient may be asked to make a large investment in hearing aids at the same time that the patient is adjusting to a new diagnosis of hearing loss.

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The literature on patient-centered care in various areas of health care is replete with examples of the benefits of listening and responding to patients' concerns, considering patients' specific needs and preferences, and engaging them in shared decision making about available treatment options (Epstein and Street, 2007, 2011; IOM, 2001, 2011c, 2014, 2015a; Meyers et al., 2010). Hearing health care professionals—as with other health care professionals—need to engage in best practices in patient-interaction processes and take the necessary time to understand the attitudes, concerns, health literacy needs, and priorities of individuals with hearing loss; discuss all available treatment options, not just hearing aids; know what community-based education and support resources are available both locally and online; educate individuals about the use, operation, and maintenance of hearing aids and hearing assistive technologies at an understandable level; and manage user expectations and beliefs. Providing a written summary of the discussion may also be helpful since an individual's hearing loss can affect communication during the office visit.

Involve Primary Care Providers in Hearing Health Care

Enhancing discussions about hearing loss between patients and health care professionals as a part of regular health assessments in primary care settings could help improve hearing health, promote its importance as a health priority, and decrease delays in referral and treatment. Because primary care providers (such as family practice physicians, geriatricians, nurse practitioners, and physician assistants) are often the first to assess and diagnose patients with hearing loss (Bagai et al., 2006; DeVoe et al., 2011; Flocke et al., 1998; Green et al., 2001; Pandhi and Saultz, 2006; Phillips et al., 2014; Rosenthal, 2008; Saultz, 2003; Saultz and Albedaiwi, 2004; Saultz and Lochner, 2005; Worrall and Knight, 2006), they can play a vital role in referring patients to the hearing health care system and following up to ensure that the patient receives all necessary care. Furthermore, as health care professionals who may have long-term relationships with patients (DeVoe et al., 2011; Phillips et al., 2014), primary care providers can help patients and their family members navigate the hearing health care journey and serve as sounding boards, trusted advisors, and advocates. For example, tinnitus is a hearing concern that patients often present to primary care providers and, although it can occur without hearing loss, it frequently accompanies hearing loss (Hoare, 2013). Primary care providers can help navigate the medical and audiological evaluations that may be required, provide assistance in gaining access to other support services, and help facilitate referrals for patients who may benefit from a community support group or, for those requiring long-term care, a residential facility that specializes in supporting people with hearing loss (McKee, 2013; Yueh et

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al., 2003). Primary care teams within the medical home can also provide support and education to patients having difficulty with the use of the technologies (e.g., inserting hearing aids, changing batteries, and adjusting hearing aids for different noise environments and to interface with different technologies such as a telephone, television, stereo, and other sources of sound).

In spite of the many opportunities the patient–primary care provider relationship can present for helping identify, inform, and possibly treat hearing loss, substantial evidence shows that hearing loss is often underdetected and undertreated in primary care settings (Cohen et al., 2005; Danhauer et al., 2008; Johnson et al., 2008). There are many reasons for this. Individuals might be reluctant to admit their hearing challenges to their primary care provider or may not experience hearing difficulties in the quiet setting of an exam room even though they do have hearing difficulties in noisier settings (Bogardus et al., 2003). Furthermore, primary care providers might find it challenging to add hearing screening to acute care visits due to time constraints, a lack of reimbursement, or a lack of a structured reminder (Johnson et al., 2008). For older adults, some primary care providers may think hearing loss is simply a normal part of aging and that there are no worthwhile treatment options. Additionally, primary care providers may not be aware of existing hearing health care resources and guidelines. Research is needed to determine how often primary care providers are discussing their patient's hearing concerns, offering hearing assessments, and, ultimately, whether their interventions result in their patients getting the hearing health care they need.

As part of the Patient Protection and Affordable Care Act,[4] the Medicare Initial Preventive Physical Exam and the Annual Wellness Visit include provisions for reviewing patient hearing status in the primary care setting. To make the best use of these provisions and the opportunity to detect hearing loss in any primary care visit, regardless of the type of insurance, studies are needed to identify the most effective methods for improving the likelihood and ease of detecting hearing loss in patients when a patient presents in the office of a health care professional who is not a hearing specialist. Some primary care providers have implemented systems to make hearing screenings a part of routine care. Examples include asking patients to complete a pre-exam survey, training nonphysician personnel to perform basic screenings, conducting an oral history, or exploring the potential for hearing loss concerns through a whisper or a finger rub test. In particular, primary care providers should be vigilant for hearing changes in patients who present with comorbid conditions such as depression or cognitive

[4]Patient Protection and Affordable Care Act, Public Law 111-148, 111th Cong., 2nd sess. (March 23, 2010).

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dysfunction, which may be associated with or exacerbated by hearing loss and therefore might improve with the use of assistive technologies (Mulrow et al., 1990). As the first point of contact that many patients have with the health care system, primary care providers play a critical role in identifying hearing loss and facilitating patient access to additional hearing health care when appropriate, and they could be used more. However, primary care providers are only one part of the hearing health care team, and most individuals with hearing loss would likely benefit from services provided by many members of the team. Primary care providers are increasingly practicing within a patient-centered medical home and could benefit from additional training in supporting a team-based care approach specific to hearing health.

Empower Consumer and Patient Use of Hearing Health Care

There are multiple opportunities to empower consumers in their use of hearing health care which may also reduce barriers and improve access to hearing care.

Food and Drug Administration Regulations on Medical Evaluation or Waiver

Because the sale of hearing aids is regulated by the Food and Drug Administration (FDA) (see Chapter 4 for more detail), a dispenser selling hearing aids must follow the Code of Federal Regulations regarding the conditions of sale of hearing aids. Among other stipulations, FDA's regulations require that prior to obtaining hearing aids, a patient must provide the hearing aid dispenser with a "written statement signed by a licensed physician that states that the patient's hearing loss has been medically evaluated and the patient may be considered a candidate for a hearing aid" (see Box 3-3). The FDA regulation provides an alternative whereby patients 18 years of age or older can sign a waiver of that evaluation (see Box 3-3). This regulation was enacted in 1977 out of concern for the potential of hearing aids to be substituted for the medical or surgical treatment of hearing loss and possibly lead to further declines in patient health (Mann and Nandkumar, 2015). The committee explored this issue, obtained and evaluated data from the available literature and from the Department of Veterans Affairs (VA) and the Department of Defense (DoD), and concluded that the health risks are low, this regulation provides no clinically meaningful benefit, and the waiver presents a barrier to access with no substantial enhancement of patient safety.

First, the committee examined the nature and extent of the medical conditions listed in the FDA regulations as well as others that could be cause for concern. Although not directly tied to the medical evaluation

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Box 3-3 CODE OF FEDERAL REGULATIONS ADDRESSING MEDICAL EVALUATION CONDITIONS FOR HEARING AID SALE

21 C.F.R. § 801.421 Hearing aid devices; conditions for sale.

(a) *Medical evaluation requirements*—

(1) *General.* Except as provided in paragraph (a)(2) of this section, a hearing aid dispenser shall not sell a hearing aid unless the prospective user has presented to the hearing aid dispenser a written statement signed by a licensed physician that states that the patient's hearing loss has been medically evaluated and the patient may be considered a candidate for a hearing aid. The medical evaluation must have taken place within the preceding 6 months.
(2) *Waiver to the medical evaluation requirements.* If the prospective hearing aid user is 18 years of age or older, the hearing aid dispenser may afford the prospective user an opportunity to waive the medical evaluation requirement of paragraph (a)(1) of this section provided that the hearing aid dispenser:

(i) Informs the prospective user that the exercise of the waiver is not in the user's best health interest;
(ii) Does not in any way actively encourage the prospective user to waive such a medical evaluation; and
(iii) Affords the prospective user the opportunity to sign the following statement:

I have been advised by _____ _____ (Hearing aid dispenser's name) that the Food and Drug Administration has determined that my best health interest would be served if I had a medical evaluation by a licensed physician (preferably a physician who specializes in diseases of the ear) before purchasing a hearing aid. I do not wish a medical evaluation before purchasing a hearing aid.

SOURCE: C.F.R. Title 21: Hearing aid devices; conditions for sale § 801.421.

requirement, a separate section of the regulations (21 C.F.R. § 801.420) states that hearing aid dispensers should be aware of eight health concerns and "should advise a prospective hearing aid user to consult promptly with a licensed physician (preferably an ear specialist)" if those conditions are seen through actual observation or learned from other information such as patient history. The eight conditions that have been termed the "red flag conditions" are

- "Visible congenital or traumatic deformity of the ear
- History of active drainage from the ear within the previous 90 days
- History of sudden or rapidly progressive hearing loss within the previous 90 days
- Acute or chronic dizziness

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- Unilateral hearing loss of sudden or recent onset within the previous 90 days
- Audiometic air-bone gap equal to or greater than 15 decibels at 500 Hz, 1,000 Hz, and 2,000 Hz
- Visible evidence of significant cerumen accumulation or a foreign body in the ear canal
- Pain or discomfort in the ear" (21 C.F.R. § 801.420).

Concerns related to not identifying these conditions prior to the dispensing of hearing aids include the following: (1) the patient's condition could be resolved through medical or surgical procedures or treatments, without the need for hearing aids; (2) given the patient's condition, hearing would not be expected to improve with hearing aids, so the patient would be sold a product he or she does not need; or (3) use of hearing aids could mask an ongoing health condition that could go untreated and possibly cause further detriment to hearing or health.

To determine whether the above-mentioned concerns were significant enough to justify keeping the medical waiver regulation in place, the committee assessed the data available in the scientific literature on the incidence and prevalence of the eight conditions and others that could relate to hearing loss. The committee also obtained data from the VA which reported the incidence of medical conditions in veterans requiring referral to otolaryngologists by audiologists, and the committee obtained data from the DoD on the incidence of hearing-related medical conditions in service members based on a review of medical coding data (see Table 3-3). The data show that these medical conditions are rare. Most of these medical conditions present with symptoms that are obvious to the patient or the provider (e.g., drainage, pain, deformity, conductive hearing loss) or could be symptoms of any number of medical conditions (e.g., dizziness). This is in contrast to the relatively high frequency of untreated hearing loss.

The FDA regulations stipulate that the contents of the user instructional brochure that manufacturers compile as part of the hearing aid packaging contain information about the eight red flag conditions so that consumers will be aware of these potential medical conditions that can cause hearing loss. It is not evident that a required physician evaluation or signing a waiver of that evaluation provides any additional clinically meaningful benefit. The committee was unable to find any analogous examples in health care where a similar waiver is required for adults. In most areas of health care, patients are empowered to seek the care they think they need for their symptoms and are not mandated by any regulation to obtain a physician's evaluation. For example, glaucoma testing is often recommended prior to being fitted for prescription glasses, but it has not been mandated, even though the incidence of glaucoma—1.9 percent of people

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TABLE 3-3
Medical Conditions That Can Present with Hearing Loss

Condition	Rates in the Published Literature	Rates in the DoD and VA Populations	Predominant Presentation, Symptoms, and Treatment
Cerumen impaction	~2% of adults (Davis, 1989; Karlsmose et al., 2001)	1.3%[a] (N = 3,500,000) (VA)[b]	Unilateral or bilateral Symptoms: ear fullness, decreased hearing Treatment: Removal with ceruminolytics; irrigation; debridement
Otitis externa	4–8.1/1,000/year[c] (CDC, 2011; Guthrie, 1999) 1.2% (males) 1.3% (females) (Rowlands et al., 2001)	Not provided	Generally unilateral Symptoms: acute ear pain, drainage, decreased hearing, swollen pinna Treatment: antibiotics, debridement
Otitis media (OM)	Acute OM: 5.46%[c] in North America; chronic suppurative OM: 3.06%[c] (for a review, see Monasta et al., 2012)	Not provided	Unilateral or bilateral Symptoms: acute ear pain, fullness, fever, decreased hearing Treatment: antibiotics; drainage with ear tube
Tympanic membrane perforation		2/1,000/year[d] (N = NA) (DoD)[e]	Unilateral or bilateral Symptoms: hearing loss, ear pain, drainage Treatment: observation; surgical repair
Otosclerosis	6.1–13.7/100,000/year (Levin et al., 1988; Pearson et al., 1974)	Not provided	Generally unilateral Symptoms: hearing loss Treatment: observation; hearing aids; middle ear surgery
Cholesteatoma	3.7–13.9/100,000/year[c] (Kemppainen et al., 1999; Tos, 1988; for a review, see Kuo et al., 2015)	Not provided	Generally unilateral Symptoms: hearing loss, ear pain, drainage, dizziness/vertigo Treatment: surgery
Sudden sensorineural hearing loss	10.21–27/100,000/year (Alexander and Harris, 2013; Byl, 1977; Wu et al., 2006)	~0.2/1,000/year (N = NA) (DoD)[e]	Unilateral Symptoms: sudden hearing loss, possible dizziness/vertigo Treatment: observation, steroids

continued

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TABLE 3-3
Continued

Condition	Rates in the Published Literature	Rates in the DoD and VA Populations	Predominant Presentation, Symptoms, and Treatment
Meniere's disease	190/100,000/3 years in the United States (for a review, see Alexander and Harris, 2010)	Not provided	Unilateral Symptoms: fluctuating hearing loss, tinnitus, vertigo, ear pressure Treatment: observation, low salt diet, diuretic
Vestibular schwannoma (also known as acoustic neuroma)	0.6–2/100,000/year (Babu et al., 2013; Lin et al., 2005; Propp et al., 2006; Stangerup, 2006, 2010)	0.009/1,000/year (N = 1,313,520) (DoD)[e]	Unilateral Symptoms: hearing loss, vertigo/imbalance, facial weakness, difficulty swallowing Treatment: observation with serial imaging, radiotherapy, surgery

NOTE: DoD = data on military service members; NA = data not available; VA = data on veterans.

[a]Combined rate for cerumen impaction and foreign body removal.

[b]Personal communication. Email to staff for the Committee on Accessible and Affordable Hearing Health Care for Adults regarding incidence of medical conditions in the veteran population, from David Chandler, Deputy Chief Consultant, Department of Veterans Affairs. Received January 15, 2016. Available by request from the National Academies of Sciences, Engineering, and Medicine Public Access Records Office. For more information, email PARO@nas.edu.

[c]These estimates include children.

[d]Combined rate for tympanic membrane perforation, ossicular discontinuity, and auditory nerve disorders.

[e]Personal communication. Email to staff for the Committee on Accessible and Affordable Hearing Health Care for Adults regarding incidence of medical conditions in military service members, from Mark Packer, Executive Director, Department of Defense Hearing Center of Excellence. Received August 7, 2015. Available by request from the National Academies of Sciences, Engineering, and Medicine Public Access Records Office. For more information, email PARO@nas.edu.

40 years of age and older in the United States (NEI, 2016)—is relatively high compared to the rates for the above-mentioned red flag conditions, there is treatment to slow its progression, and the consequences of the disease can seriously affect vision and are irreversible.

Second, the use of the waiver is common practice, and it is easily selected in online or mail-order sales. The committee could not find a recent peer-reviewed study with reliable data on the overall percentage of individuals who provide proof of a medical evaluation to hearing health care professionals or the percentage of individuals who sign the waiver, but several estimates provided to the committee by professional organizations

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and anecdotal evidence indicate that approximately 60 to 95 percent of individuals purchasing hearing aids may be signing the waiver[5,6] (Adams, 1995; PCAST, 2015). The FDA regulations require hearing health care professionals to maintain records of the statements or waivers for 3 years (21 C.F.R. § 801.421). Hearing aids are also available for sale online, often with a requirement that the consumer provide an audiogram so that fitting can be done, but consumers are asked only to read the medical evaluation statement and check a box if they choose to waive the medical evaluation. The ease of selecting the waiver, much as in downloading a mobile app or software upgrade, can mean that the consumer does not read it thoroughly but rather agrees to it (or provides an electronic signature) as a routine step in the purchasing process. In addition, the regulations present a barrier to access by requiring a separate appointment (with additional costs that may be at the patient's expense, depending on his or her health insurance coverage) for a medical evaluation that in most cases would not be helpful and would delay a patient from getting much needed assistance with hearing and communication.

In summary, the committee finds no evidence that the required medical evaluation or waiver of that evaluation provides any clinically meaningful benefit. The committee finds that the medical evaluation regulations are not effective, nor are they needed to protect patient health and safety. In weighing the rareness of the medical conditions, the incidence of hearing loss in adults, the widespread need for hearing health care, and the wide use of the medical waiver, the committee recommends removing this regulation to serve consumers' best interests.

Access to and Portability of Hearing Health Care Records

Access to hearing aid–related records (including audiograms and programming history) and the ability to move those records between hearing aid dispensers is an area of concern. The President's Council of Advisors on Science and Technology recommended that the Federal Trade Commission

[5]Personal communication. Letter to staff for the Committee on Accessible and Affordable Hearing Health Care for Adults, from Kim Cavitt, President, Academy of Doctors of Audiology; Judith Page, President, American Speech-Language-Hearing Association; and Larry Eng, President, American Academy of Audiology. Received August 27, 2015. Available by request from the National Academies of Sciences, Engineering, and Medicine Public Access Records Office. For more information, email PARO@nas.edu.

[6]Personal communication. Letter to the Committee on Accessible and Affordable Hearing Health Care for Adults, from Kathleen Mennillo, Executive Director, International Hearing Society. Received January 15, 2016. Available by request from the National Academies of Sciences, Engineering, and Medicine Public Access Records Office. For more information, email PARO@nas.edu.

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enact requirements for hearing health care professionals to provide or make available audiograms and hearing aid programming reports and settings to consumers (PCAST, 2015). Such a policy could facilitate consumers' ability to change their hearing health care providers for subsequent care if their providers are not meeting their needs, or it could allow changes in providers if an individual moves to another location or is away from home for an extended period of time. (An additional challenge to changing providers is that hearing aids have proprietary software that can only be programmed by dispensers who have a relationship with the manufacturer of that particular hearing aid. See Chapter 4 for further discussion.)

The portability of and access to an individual's own medical records is a legal right guaranteed under the Privacy Rule of the Health Insurance Portability and Accountability Act[7] (HIPAA). The Privacy Rule grants patients a right to inspect and receive copies of certain health information about them—known as a designated record set—that is held by a HIPAA-covered entity (e.g., a medical office or hospital). The Privacy Rule regulates health care providers that conduct specific types of electronic transactions such as billing for health care services or verifying insurance benefits, so audiologists and hearing instrument specialists typically are subject to the HIPAA Privacy Rule. Under the HIPAA statute, patients have a legally enforceable right of access to their designated record set within 30 days of requesting them, a time limit that is subject to an extension under certain circumstances.

The audiogram as well as other hearing-related health records should be part of the individual's designated record set. The Privacy Rule defines this record set as including medical, insurance, and billing records plus an additional category of other records "used, in whole or in part, by or for the covered entity to make decisions about individuals" (45 C.F.R. § 164.501). This definition strongly suggests that if an audiologist or hearing instrument specialist uses any part of the audiogram to make decisions about an individual, the entire file is part of that individual's designated record set. However, a patient's access may depend on the data retention policy of the audiologist or hearing instrument specialist. The rule allows individual access only to data that a health care provider "actually maintains" at the time that an individual's request is received (79 Federal Register 7289). State regulations typically determine which records each provider needs to maintain.

Despite this broad right of access across all sectors of the health care system, patients report that they have difficulty obtaining access to their health data, and access problems perennially appear as sources of patient complaints under HIPAA. Patients who are denied access can file a com-

[7]Privacy Rule of the Health Insurance Portability and Accountability Act, Public Law 104-191; 45 C.F.R. § 164.524.

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plaint with the Office for Civil Rights at the Department of Health and Human Services, and this office generally will attempt to work with the provider to explain its obligation to provide access. In other areas where patients have encountered difficulty accessing their health records, patient advocacy groups often develop programs to assist patients in exercising their rights and filing complaints if access is denied. Consistent with laws governing access and portability of other health records, hearing health care patients should have access to their audiograms and other hearing health care records held by HIPAA-covered hearing health care professionals.

Support of and Engagement in Quality Improvement

Measuring and Improving Quality

High-quality health care—regardless of the type of care, the geographic location where it is delivered, or the patient population receiving the care—must be safe, effective, patient centered, timely, efficient, and equitable (IOM, 2001, 2006a,b, 2011a, 2012b). Improving and maintaining the quality of care that patients receive can be accomplished through a variety of mechanisms from the individual provider level up through the system level on a national basis. For example, evidence-based clinical practice guidelines and standards of practice can be used to educate health professionals, inform practice patterns, and facilitate widespread adherence to best practices. Performance metrics can be used to standardize and incentivize high-quality care, assess quality in specific areas of care, and compare care across providers. Additionally, continuous quality improvement efforts can be used in practice settings and health care systems to evaluate current practices, inform adjustments in care delivery, and provide data to strengthen the evidence base. Like all aspects of health care, high-quality hearing health care and improvements to that care need to be built on a foundation of scientifically sound data and research methods, as is described throughout this report.

Clinical Practice Guidelines and Standards of Practice

The purpose of clinical practice guidelines and standards of practice is to provide direction for high-quality, evidence-based health care services and established best practices. In the United States, the Agency for Healthcare Research and Quality (AHRQ) catalogs clinical practice guidelines[8]

[8]AHRQ has adopted the Institute of Medicine definition of clinical practice guidelines, which states, "Clinical practice guidelines are statements that include recommendations intended to optimize patient care that are informed by a systematic review of evidence and an assessment of the benefits and harms of alternative care options" (IOM, 2011b, p. 4).

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for various health conditions, treatments, and medical specialties in the National Guideline Clearinghouse. A set of stringent inclusion criteria (available at www.guideline.gov) is used to evaluate each of the guidelines submitted for review (AHRQ, 2014). In the case of hearing loss, a few relevant guidelines have met the inclusion criteria and are listed within the clearinghouse under otolaryngology and otolaryngologic health conditions (see Box 3-4; AHRQ, 2016). Typically, health care professional associations collaborate with researchers and clinicians to develop evidence-based clinical practice guidelines in areas where scientifically rigorous data and studies are available.

In addition to the National Guideline Clearinghouse, several professional organizations maintain standards of practice and clinical guidelines for public reference. Box 3-4 provides examples of clinical practice guidelines and standards of practice for hearing loss in adult populations. The American Speech–Language–Hearing Association (ASHA) also maintains an online collection of evidence-based clinical practice guidelines relevant to audiology and speech-language pathology (ASHA, 2016d). In 2005, ASHA's National Center for Evidence-Based Practice in Communication Disorders began evaluating available guidelines and systematic reviews for this collection. To assess the guidelines, the center uses a scoring framework called the Appraisal of Guidelines for Research and Evaluation II framework, and systematic reviews are considered against unspecified quality indicators (ASHA, 2016g). It is important to note that only a handful of the guidelines and reviews listed are directly related to hearing loss, with many of them focused on screening for newborns and children.

To further guide the practice patterns for hearing health care, the American Academy of Audiology's Professional Standards and Practices Committee sets and updates standards of practice for the profession. These standards were developed "to define acceptable standards of practice for services" that fall within the scope of practice for audiologists (AAA, 2012, p. 1). The current standards were updated in 2012 and focus on six areas: education, screening, evaluation and diagnosis, treatment, prevention, and research (AAA, 2012). In the late 1990s (1996–1999), ASHA, the American Academy of Audiology, and the VA convened the Joint Audiology Committee on Clinical Practice Algorithms and Statements to establish a consensus on clinical algorithms for audiology. The joint committee used the best available evidence at the time to develop five practice algorithms: overview of audologic services; comprehensive adult audiologic assessment; comprehensive pediatric audiologic assessment; hearing aid selection and fitting; and cochlear implant assessment, programming, and rehabilitation. Each of the algorithms is presented in a decision tree format with an accompanying practice statement that can be used to guide audiologists through the decision-making process for the specified scenarios (Joint Audiology Com-

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Box 3-4 EXAMPLES OF AVAILABLE CLINICAL PRACTICE GUIDELINES AND STANDARDS OF PRACTICE

- **American Academy of Audiology:**
  - Standards of Practice (AAA, 2012)
  - Guidelines for the Audiologic Management of Adult Hearing Impairment (Valente, 2006)
  - Clinical Practice Guidelines Adult Patients with Severe-to-Profound Unilateral Sensorineural Hearing Loss (AAA, 2015)
- **American Academy of Audiology, American Speech-Language-Hearing Association, and Department of Veterans Affairs:** Audiological Clinical Practice Algorithms and Statements (Joint Audiology Committee on Clinical Practice Algorithms and Statements, 2000).
- **American Academy of Otolaryngology—Head and Neck Surgery:**
  - Clinical Guidelines for Tinnitus[a] (Tunkel et al., 2014)
  - Clinical Practice Guideline: Sudden Hearing Loss (Stachler et al., 2012)
  - Clinical Practice Guideline: Cerumen Impaction (Roland et al., 2008)
- **American College of Medical Genetics and Genomics[a]:** Guideline for the Clinical Evaluation and Etiologic Diagnosis of Hearing Loss (Alford et al., 2014)
- **American College of Radiology[a]:** ACR Appropriateness Criteria® for Using Radiological Imaging for Hearing Loss and/or Vertigo (Angtuaco et al., 1996)
- **Royal College of Physicians (United Kingdom):** Hearing and Balance Disorders: Achieving Excellence in Diagnosis and Management (RCP, 2008)
- **Royal College of Speech & Language Therapists Department of Health, National Institute for Clinical Excellence (United Kingdom):** Clinical Guidelines: 5.7 Deafness and Hearing Loss (Taylor-Goh, 2005)
- **U.S. Preventive Services Task Force[a]:** Recommendations on Screening for Hearing Loss in Older Adults (Moyer, 2012)

[a]As of February 2016, these clinical practice guidelines have met the inclusion criteria for the Agency for Healthcare Research and Quality's National Guideline Clearinghouse (AHRQ, 2016).

mittee on Clinical Practice Algorithms and Statements, 2000). Although these algorithms may be useful in guiding practice, they have not been revisited or updated in almost two decades and may not reflect the most current and best available evidence, which is fundamental for ensuring high-quality, evidence-based care.

Guidelines and standards can only be effective if they are consistently applied across practice settings. Despite the online availability of guidelines and standards related to hearing health care, little is known about whether

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health care professionals are aware of these resources, how frequently the resources are taught in health professional education, or how often they are applied in practice settings. The possible impact of these guidelines and standards on improving the quality of care is also unknown. In order to understand the reach and limitations of these resources and to develop strategies to ensure that best practices are implemented, surveys and additional research are needed. As new research findings become available, the guidelines and standards need to be updated to reflect best available evidence. Furthermore, efforts to widely disseminate revised guidance; teach students and health care professionals, including primary care providers, about the existence of the guidelines and how to implement them; and modify practice patterns will also be required to ensure that patients fully benefit from evidence-based practices.

Performance Metrics

Another mechanism for ensuring and promoting high-quality health care is the development, implementation, and analysis of performance metrics, which may also be tied to clinical practice guidelines. As broadly defined by previous Institute of Medicine work, performance metrics "encompass the wide range of measures of health care quality that include measures and indicators of clinical care, health care processes, and patient outcomes and satisfaction" (IOM, 2012a, p. 181). Performance metrics can also be used to increase accountability, enhance transparency, standardize care, and incentivize evidence-based care—all of which contribute to the delivery of high-quality care.

Across the health care landscape in the United States, there is a range of organizations, government agencies, insurers, health care systems, researchers, health professionals, and other stakeholders involved in the development and use of performance metrics. When applied nationally, performance metrics can serve as a basis for accreditation, certification, and pay-for-performance programs. Box 3-5 provides examples of organizations that develop and use performance measures on a national scale in order to improve the quality of health care.

In 2005, ASHA's Working Group on Quality Indicators developed quality indicators for audiology and speech-language pathology programs across a variety of settings (e.g., schools and private practice). The indicators were designed to encourage quality improvement efforts; to provide a framework for developing, reviewing and updating programs; and to educate health professionals, students, and consumers about high-quality care. The indictors are grouped into five areas: purpose and scope of services, service delivery, program operations (e.g., administration, human resources, financial management), program evaluation and performance improvement,

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Box 3-5 EXAMPLES OF PERFORMANCE METRICS

The Joint Commission: The Joint Commission certifies and accredits health care organizations and programs throughout the United States using specific performance measures and standards as a basis of evaluation. The Joint Commission develops certification and accreditation standards by reviewing available evidence and engaging a broad range of experts and stakeholders in the process. Currently, there are more than 21,000 health care organizations and programs that have met The Joint Commission's certification and accreditation standards for quality and safety (The Joint Commission, 2016a,b).

National Committee for Quality Assurance: More than 90 percent of health plans across the United States measure performance using the National Committee for Quality Assurance's Healthcare Effectiveness Data and Information Set (HEDIS). Participating health plans report on 81 HEDIS quality measures that are categorized into five domains and cover a range of health conditions and processes (e.g., breast cancer screening, immunizations, diabetes care, weight management). HEDIS measures are reviewed on an annual basis and retired when they are no longer applicable, ensuring that the measures are always up to date. The National Committee for Quality Assurance also serves as an accreditation and certification body for health care plans and organizations, requiring compliance with various standards (NCQA, 2016a,b,c).

National Quality Forum: The National Quality Forum uses a defined evaluation process in order to build consensus and endorse evidence-based performance measures, which are then catalogued online. Measures that receive endorsement are reviewed every 3 years to ensure the application of the best available evidence. Each year the National Quality Forum's Measure Applications Partnership provides recommendations and guidance to the Department of Health and Human Services on more than 100 performance measures that are being considered for implementations across 16 federal health care programs, including various programs administered by the Centers for Medicare & Medicaid Services (NQF, 2016a,b,c).

and ethics (ASHA, 2005). As with the discussion of the clinical practice guidelines and standards above, it is difficult to know how these indicators are applied and what impact they have on quality, and it appears that they have not been revisited in more than a decade.

To further promote and ensure the delivery of high-quality care, the Centers for Medicare & Medicaid Services (CMS) launched a voluntary incentive program in 2006 called the Physician Quality Reporting System (PQRS) (formerly the Physician Quality Reporting Initiative), which has implemented performance metrics within the Medicare program. Physicians and various types of practitioners and therapists—including audiologists and speech-language therapists—who provide care to Medicare patients

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under Medicare Part B's Medicare Physician Fee Schedule are eligible to participate in the PQRS program (CMS, 2016a). The program has evolved through various legislative actions. For example, the Medicare Improvement for Patients and Providers Act of 2008 made the PQRS program permanent and required CMS to report online the participation in the program and some performance measures (AMA, 2015; CMS, 2016c). Additionally, the Patient Protection and Affordable Care Act of 2010 shifted the paradigm of the PQRS program so that, beginning in 2015, increasing penalties for nonparticipation were included rather than incentive payments for voluntary reporting of quality measures (AMA, 2015). In 2016 health care professionals and group practices are required to choose and report on at least nine individual measures and one crosscutting measure from a list of available measures for at least half of all Medicare patient appointments. Selected measures can be reported via Medicare billing claims, a registry-based reporting system, or certified electronic health records (CMS, 2016b). There is a 2-year gap between reporting and possible penalties; for example, health professionals and group practices that did not meet the 2015 requirements will see a downward adjustment in 2017 (AMA, 2015; CMS, 2015).

Because of the possible impact of PQRS requirements on the practice of audiology, 10 audiology organizations[9] came together to form the Audiology Quality Consortium. The consortium develops possible quality measures for PQRS inclusion, monitors the PQRS program and quality measures, responds to proposed changes in the PQRS program, and provides education and guidance on PQRS requirements to audiologists. The consortium also maintains a website[10] that lists the applicable PQRS measures and codes (e.g., Current Procedural Terminology [CPT®], *International Classification of Diseases*, G-codes) for audiologists, provides claims forms, and offers other helpful resources (AQC, 2016a,b). The six PQRS measures relevant to audiology that are currently listed on the consortium's website are (1) documenting current medications, (2) screening for depression, (3) risk assessment for falls, (4) care planning for falls, (5) screening and preventative care for tobacco use, and (6) referral for patients with acute or chronic dizziness (AQC, 2016b). As noted by the consortium, under the 2016 PQRS requirements, audiologists are required to report on all three of the crosscutting measures (i.e., medications, depression screening, and tobacco use), rather than only one, because there are fewer than nine individual quality measures that apply to audiology (AQC, 2016c).

[9] Academy of Doctors of Audiology, Academy of Rehabilitative Audiology, American Academy of Audiology, American Academy of Private Practice in Speech Pathology and Audiology, American Speech–Language–Hearing Association, Association of VA Audiologists, Directors of Speech and Hearing Programs in State Health and Welfare Agencies, Educational Audiology Association, Military Audiology Association, and National Hearing Conservation Association.

[10] See http://audiologyquality.org.

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Audiologists who provide services to fewer than 15 Medicare beneficiaries in a year are exempt from PQRS reporting.

The National Quality Forum estimates that by 2017 approximately 90 percent of Medicare payments will be tied to some form of performance metric (NQF, 2016c). It is becoming clear that performance metrics are driving change in the landscape of health care quality in the United States—within Medicare and beyond—and will also play a role in how hearing health care is delivered in the future. As electronic health records continue to be implemented and evolve, performance metrics and clinical pathways or algorithms will be integrated and used to inform and maximize the quality of care provided. Thus, it is essential that collaborative action, such as that of the Audiology Quality Consortium, be taken in order to develop clearly defined, evidence-based performance metrics that can be adopted for ensuring high-quality hearing health care.

Continuous Quality Improvement

Continuous quality improvement (CQI) is a process- and data-oriented mechanism that is used to enhance the quality of health care delivery and promote excellence. CQI efforts involve "capturing, analyzing, and regularly reporting data; translating the data and resulting information into actionable opportunities to improve performance at the local level; and developing plans for process changes that will further support effective, efficient, and value-added interventions" (IOM, 2015b, p. 338). Like performance metrics, CQI programs are becoming more commonplace among health care systems across the United States, as accreditation bodies (e.g., The Joint Commission, the National Committee for Quality Assurance) continue to emphasize measuring outcomes and CQI processes as part of their accreditation standards. ASHA developed the National Outcomes Measurement System with the goal of collecting and analyzing national outcomes data on the effectiveness of speech-language pathology and audiology services. The initial work focused on speech-language pathology outcomes, but efforts are under way to expand this work into audiology services (ASHA, 2016h; Mullen, 2003; Mullen and Schooling, 2010).

Within the field of hearing health care, the application of CQI principles and programs also holds promise for improving the quality and efficiency of care that patients receive. Under the research section of the American Academy of Audiology's standards of practice, audiologists are called on to measure and evaluate clinical outcomes and to update practice policies and procedures as part of CQI efforts (AAA, 2012). Recently published literature that was centered on the use of CQI in hearing health care appears to be limited and has primarily focused on newborn screening programs (e.g., Deem et al., 2012) and administrative processes, such as

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appointment management (e.g., Huddle et al., 2016). For audiologists and other health professionals who would like to implement CQI strategies in their practices, there are numerous resources and guides available (ASHA, 2016d; HRSA, 2016b; IHI, 2016; Taylor, 2013). Successful CQI efforts require proactive leadership, a culture of continuous learning, measurable outcomes, a reliable platform for ongoing data collection and analysis, opportunities to share feedback and exchange ideas, and strategies to implement necessary change (IOM, 2015b).

Summary

Measuring and improving the quality of hearing health care necessitates buy-in and collaborative effort among researchers, health professionals, health systems, insurers, advocacy organizations, people with hearing loss and their families, and experts in performance metrics and health care quality improvement. As described throughout this section, high-quality hearing health care is a multifaceted goal that can be promoted and accomplished through the development and implementation of mechanisms such as clinical practice guidelines and standards of practice, performance metrics, and continuous quality improvement efforts. However, guidelines, standards, and metrics must be regularly reviewed and updated to ensure that the most recent evidence is translated into best practices. Additionally, once guidelines, standards, and metrics are defined and deployed, a range of strategies—e.g., dissemination, education, and incentives and/or penalties—may be necessary to ensure uptake and implementation by hearing health care professionals.

Overcome Disparities in Services Delivery and Access

Disparities in health care can be defined as inequities in access to care or in quality of care (IOM, 2003). These disparities may contribute to differences in health outcomes across groups of individuals by race, ethnicity, income, education, age, and place of residence, among others. This section addresses the challenges to access and quality for underserved and vulnerable populations of adults with hearing loss, geographical disparities in the location of hearing health care providers, and issues of racial/ethnic and linguistic diversity in the professional workforce serving adults with hearing loss. Expanded health services research is needed to improve understanding of hearing health care disparities and to investigate how economic, racial, cultural, gender, and age-related factors may influence hearing health care use and patient-centered outcomes.

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Socioeconomic, Racial, and Ethnic Disparities

A large proportion of the U.S. adult population has not had a recent hearing test (see earlier section on hearing health care utilization). Furthermore, many adults who have hearing loss and may benefit from using hearing aids are not using the devices (see Chapter 4). Only limited evidence is available on the use of hearing health care services by low-income adults and racial and ethnic minorities. Individuals living at or below the federal poverty level were found to be less likely to access hearing health care in the form of using hearing aids than individuals in higher-income populations (Bainbridge and Ramachandran, 2014). African Americans and Mexican Americans are also less likely to report using hearing aids than non-Hispanic White Americans (Lee et al., 1991; Nieman et al., 2016; Pugh, 2004), although one of those studies (Nieman et al., 2016) found that after adjusting for hearing loss, there were no significant differences for African Americans. Full exploration and analysis of the causes and effects of these findings have been hindered by the lack of hearing aid–using adults from racial/ethnic minorities being included in epidemiological studies (see Chapters 2 and 4). Researchers and funding agencies have called for more study of culture-specific interventions to better meet the needs of Hispanic Americans and African Americans (Donahue et al., 2010; Lee et al., 1991; Pugh, 2004). Ongoing research funded by the National Institutes of Health is targeted toward developing affordable and accessible interventions for hearing loss to meet the unique needs of older adults from racial/ethnic minorities.

Older Adults in Long-Term Care Facilities

Obtaining adequate hearing health care can also be challenging for the approximately 1.4 million older Americans who reside in nursing homes or other long-term care facilities (Cohen-Mansfield and Infeld, 2006; Harris-Kojetin et al., 2013). Several cross-sectional studies have shown that although the majority of older adults in nursing homes have hearing loss and many of them might benefit from hearing aids, only 14 to 30 percent of these residents use hearing aids (Cohen-Mansfield and Taylor, 2004a; Culbertson et al., 2004; Jerger et al., 1995). Potential barriers to hearing aid use among residents of nursing homes include individual-specific factors such as manual dexterity challenges that limit the use of hearing aids without assistance; institutional factors, such as a lack of knowledge among staff and a lack of care procedures to assist and support resident communication; and societal factors such as high costs of hearing aids (Carson and Pichora-Fuller, 1997; Cohen-Mansfield and Taylor, 2004b). Furthermore, hearing loss may be under-reported by residents of nursing homes and under-recognized by staff in the absence of objective screening

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measures (Cohen-Mansfield and Taylor, 2004a; Corbin et al., 1984; Hoek et al., 1997). An additional challenge for staff and family members is to distinguish miscommunication related to hearing loss from miscommunication related to dementia (Haque et al., 2012; Slaughter et al., 2014). In one study of nursing home residents who used hearing aids, the vast majority (86 percent) needed help with the use and care of the devices, especially changing batteries, and the incidence of problems was high, with approximately two-thirds (69 percent) of hearing aids that belonged to the residents malfunctioning, and nearly half of the staff not having any training in how to use or maintain the devices (Cohen-Mansfield and Taylor, 2004b).

Further development of learning objectives and curriculum regarding hearing health care is needed across multiple disciplines, both within professional training programs and the continuing education of those who work with older adults in long-term care settings, to address the access, follow-up, and quality improvement challenges. A number of continuing education opportunities are regularly available to audiologists on issues related to geriatrics and aging through audiology professional organizations. Limited large-scale research exists on the impact of continuing education and interprofessional training on improving hearing health outcomes, but several examples in the literature have shown positive effects for residents and employees of long-term care institutions (Cohen-Mansfield and Taylor, 2004b; Hoek et al., 1997; Jennings and Head, 1994; Linssen et al., 2013; Robertson et al., 1997). Guidelines for delivery of audiology services in nursing homes were developed by ASHA and include discussion of the potential value of using a variety of hearing assistive technologies in addition to hearing aids (ASHA, 1997). Twenty years later, challenges persist. It is noteworthy that with more older adults choosing to stay in their homes as they age rather than move into long-term care facilities, some of the challenges highlighted in this section will also apply to individuals living in settings other than long-term care facilities.

Rural Populations

A higher percentage of older adults live in rural than in urban areas, and analyses of population changes suggest a migration of baby boomers to rural and small-town communities (Cromartie and Nelson, 2009). One factor that may affect access to hearing health care for rural populations is practice location. Residents of rural areas may not have a choice among providers or may have to travel greater distances than their urban-dwelling peers to access health services or in-network providers.

Further research is needed into the rural health issues potentially affecting hearing health care utilization and the unique needs of rural populations. Older adults in rural communities perceive a number of barriers to

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general health care access, including problems with transportation, limited health care supply, a lack of quality care, social isolation, and financial challenges (Goins et al., 2005; IOM, 2006c). There is also evidence that older adults in rural areas are more socially isolated than older adults living in urban areas, with the suggestion that infrastructure and health care providers should plan for rural older adults' needs and prevent isolation (Baernholdt et al., 2012). Given the potential association between hearing loss and social isolation in older adults (Mick et al., 2014), greater attention to the hearing health care needs of rural older adults may be an important consideration. Evidence of successful rural hearing health promotion programs from other countries suggests this may be a promising approach. For example, the development of a sensory support center in rural Scotland reduced social isolation and increased the functional independence of older adults (Smith et al., 2015) and the Farmsafe Australia project increased access to screening services in farming communities (Lower et al., 2010). Existing programs to address hearing conservation among farming communities, which have focused on young farmers (e.g., Ehlers and Graydon, 2011), might provide a bridge to increase rural community awareness on hearing health issues in the United States (see also Chapter 6). Tele-audiology programs at the VA and Alaska Federal Health Care Access Network have also been developed and implemented to begin to address rural health needs (Jacobs and Saunders, 2014) (see later section in this chapter for more information on tele-audiology).

Audiology Workforce Diversity

Racial and ethnic diversity within the hearing health care workforce is limited. Although not all audiologists are members of ASHA, member counts provide data that cover most of the audiology workforce. Racial data from a dues notice survey conducted in 2012 showed that of the audiologists certified by ASHA in audiology only, approximately 92 percent were white Caucasian and 3 percent were Hispanic/Latino (see Table 3-4; ASHA, 2016c). The most recent available data on gender are from the dues notice survey conducted in 2009, indicating a primarily female audiology workforce (84.6 percent of 11,867 respondents) (ASHA, 2016c).

These data are similar to demographic data from other health care professions. For example, Sánchez and colleagues (2015) note that even though the Latino population is the second-fastest growing nonwhite population in the United States, there has not been growth in the number of Latino physicians. Furthermore, nurses from minority backgrounds represent only 19 percent of the nursing workforce (American Association of Colleges of Nursing, 2015). At the same time, the United States is undergoing major demographic shifts that are projected to result in more than half of the

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TABLE 3-4
Profile of American Speech-Language-Hearing Association Member and Nonmember Certificate Holders in Audiology Only, by Race and Ethnicity

Race	Percentage (n = 9,270)
American Indian or Alaska Native	0.2%
Asian	3.3%
Black or African American	2.4%
Native Hawaiian or other Pacific Islander	0.1%
White	92.1%
Multiracial	1.8%
Ethnicity	**Percentage (n = 9,837)**
Hispanic or Latino	3.1%
Not Hispanic or Latino	96.9%

SOURCE: ASHA, 2016c. Printed with permission from ASHA.

country's population being from minority populations by 2044 (Colby and Ortman, 2014). It is not simply in the audiology workforce, then, that the match between health care professionals and the U.S. population is out of balance.

This shortage of health care professionals from minority communities has serious implications for health care access as well as health care outcomes. According to the Sullivan Commission report (2004), "studies suggest that increasing the diversity of the health workforce can improve patient access, patient satisfaction, and improve quality of life for all patients" (p. 15). More specifically, minority patients report better communication with their providers when the patient and the provider are from the same racial/ethnic group. Minority group patients tend to prefer physicians from their same racial/ethnic background and report higher levels of satisfaction when this occurs (Sullivan Commission, 2004).

Equally important to improving access to care is the promotion and support of increasing the number of providers in underserved communities. Zayas and McGuigan (2006) report that half of the medical school graduates expecting to practice in medically underserved areas are African American. A 2002 survey found that 45 percent of Hispanic/Latino dental school student seniors planned to provide dental care to underserved populations after graduation (Sullivan Commission, 2004) while another study found Latino physicians to be more likely to provide health care for Latino communities

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and for populations that are medically underserved (Sánchez et al., 2015). Given minority patients' preference for race-concordant health care professionals, increasing diversity in the hearing health care workforce has the potential to help reduce racial and ethnic hearing health care disparities.

This lack of diversity is unlikely to change in the near term due to the lack of diversity in the current audiology student population. Table 3-5 provides enrollment data for students in audiology graduate degree programs. In the 2013–2014 academic year, 69 out of 75 doctorate graduate degree programs in audiology responded to the Communication Sciences and Disorders Education Survey (CAPCSD and ASHA, 2015). According to the survey results, the clinical doctorate, entry-level programs had a total of 1,781 white Caucasian students (87.35 percent), 205 racial/ethnic minority students (noninternational, 10.05 percent), and 53 international students (2.6 percent). The group was also predominantly female (84.7 percent). The limited gender, racial, and ethnic diversity among recent graduates and enrolled students demonstrates that the audiology workforce will not mirror the gender and racial/ethnic diversity of the U.S. population with hearing loss for the foreseeable future. Recruitment and retention of diverse students to professional training programs in hearing health care would likely boost the diversity in the hearing health care workforce over time.

Increasing the diversity in the hearing health care clinical and research workforce has a number of benefits similar to increasing the diversity in other areas of health care, including increasing access to health services, improving equity (Cohen et al., 2002; IOM, 2003; Valantine and Collins, 2015), increasing patient satisfaction, and ensuring better patient communication with providers.

TABLE 3-5
Total Enrollment in Audiology Graduate Degree Programs for the Clinical and Research Doctorates by Gender and Race/Ethnicity, 2013–2014

Audiology Graduate Degree Program	Male	Female	White	Racial/Ethnic Minority (Non-International)	International
Clinical doctorate: entry-level	312 (15.3%)	1,727 (84.7%)	1,781 (87.35%)	205 (10.05%)	53 (2.6%)
Clinical doctorate: post-entry level	27 (28.42%)	68 (71.58%)	46 (48.42%)	5 (5.26%)	44 (46.32%)
Research doctorate	15 (23.44%)	49 (76.56%)	41 (64.06%)	6 (9.38%)	17 (26.56%)

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Linguistic diversity also affects audiologic care and management because language proficiency can affect performance on some clinical tests of speech recognition and outcomes (Reel et al., 2015; Warzybok et al., 2015). Data from ASHA's 2015 member counts indicated 726 ASHA-certified audiologists self-identified as bilingual service providers, as defined by native or near-native proficiency in a second language. Of these bilingual audiologists, 266 ASHA-certified audiologists were Spanish-language service providers. State-level data indicated that the most bilingual ASHA-certified audiologists living in the United States were located in California, Florida, New York, and Texas. In 6 states, there were 10 or fewer bilingual service providers (ASHA, 2016e). International efforts are under way to develop valid and reliable multilingual test materials (Akeroyd et al., 2015). Academic and clinical training in cultural competency is required within audiology training programs (ASHA, 2014, 2016i). Cultural competencies are part of the knowledge and skills for national certification in audiology from both ASHA and the American Board of Audiology (ASHA, 2004).

The workforce and student enrollment data suggest the need for training programs and professional organizations to develop strategies to recruit and retain minority and bilingual audiologists and other hearing health care professionals. Enhancing and sustaining diversity in the hearing health care workforce will likely require the efforts of multiple stakeholders. Valuing cultural sensitivity and diversity is within the strategic plans and core values of audiology professional organizations (AAA, 2016; ASHA, 2016j). Increasing diversity among the audiology workforce is a stated goal of ASHA's Envisioned Future 2025, both for gender and multicultural diversity. Funding to promote diversity in the hearing health research workforce is available through administrative supplements and individual training fellowships through the National Institute on Deafness and Other Communication Disorders (NIH, 2015; Valantine and Collins, 2015). However, there are no current, clear mechanisms targeted to increase the workforce diversity among audiologists or other hearing health care professionals. Incentive programs, such as tuition reimbursement used for those practicing in other areas of health care, might help diversify the hearing health care workforce. Strengthening cultural competency training and programs is another area that could help the hearing health care workforce fully address the issue of providing high-quality services to diverse and underserved populations (Awosogba et al., 2013; Shaya and Gbarayor, 2006).

Improve and Expand Use of Auditory Rehabilitation Programs

Although consumer organizations (e.g., the Hearing Loss Association of America and AARP) are actively engaged in advocating for the use of auditory rehabilitation and patient choice for hearing health care, reha-

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bilitation programs, such as those described earlier in this chapter, are not widely available (Hawkins, 2005; Sweetow and Palmer, 2005; Thorén et al., 2011). Furthermore, little is known about what proportion of people diagnosed with hearing loss participate in such programs, despite supportive expert opinion across the field. In their literature review, Sweetow and Palmer (2005) indicated that the use of rehabilitation services by audiologists decreased in the 20 years preceding their work due to a number of factors, including a lack of reimbursement and time constraints.

The available evidence supporting auditory rehabilitation programs is generally favorable (see the section on auditory rehabilitation earlier in this chapter) and suggests that these types of programs would likely provide some short-term benefits (Chisolm and Arnold, 2012). However, the evidence is neither robust nor definitive. Reviews of both auditory training and counseling-based, supportive rehabilitation programs describe variability across individuals in terms of outcomes and possible benefits (Chisolm and Arnold, 2012; Hawkins, 2005; Henshaw and Ferguson, 2013; Saunders et al., 2016; Sweetow and Palmer, 2005). This variability may be the result of individual differences (e.g., baseline performance, functional abilities, communication needs, age, severity of hearing loss, motivation, support). These differences require audiologists and health professionals to match individuals with specific interventions—both rehabilitation services and technologies—in order to optimize the outcomes (Abrams and Chisolm, 2013). The development of metrics and biomarkers that could predict which individuals would benefit most from which interventions would greatly simplify decisions about appropriate hearing health care options. In advising their patients, audiologists and health professionals also need to consider the timing of rehabilitation programs. Studies have concluded that the first few weeks to the first few months of hearing aid adoption represent the timeframe when usage patterns are established (Dillon, 2012; Laplante-Lévesque et al., 2014; Ng and Loke, 2015). Also, individuals with new hearing aids are typically encouraged to schedule follow-up appointments within the first 6 months or sooner, as needed. Therefore, this may be a timeframe during which individuals' information needs and receptiveness to rehabilitation efforts are heightened.

In the design phase of auditory rehabilitation programs, there are a number of foundational principles that could be used to promote successful uptake. For example, these programs should be designed to

- meet the needs and individual preferences of the person with hearing loss;
- be cost effective for both individuals and the care provider;
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- be interactive;
- provide sufficient feedback and reinforcement; and
- provide perceived value and positive outcomes to the user (Boothroyd, 2010; Henshaw et al., 2015; Laplante-Lévesque et al., 2010; Sweetow and Palmer, 2005; Sweetow and Sabes, 2006).

To promote wider acceptance and implementation of auditory rehabilitation programs, the efficacy and efficiency of the programs should be evaluated in a large-scale, long-term, and systematic way, using standardized outcome measures whenever possible in order to fully meet tests of scientific rigor. The evidence base needs to be bolstered and widely disseminated, and additional research efforts need to determine which individuals will derive the greatest benefit from these programs. Additionally, steps to expand the use of evidence-based auditory rehabilitation programs need to be taken, including the use of large-scale pilot programs. Where evidence-based programs are available, audiologists, health professionals, and advocacy organizations need to be aware of them and be encouraged to recommend them to their patients and constituents.

Develop and Evaluate Innovative Models of Hearing Health Care Delivery

As described earlier in this chapter, obtaining treatment for hearing loss in the United States generally follows a medical model of clinic-based care in which an individual visits a hearing health care professional for diagnostic evaluation, assessment, and care. While this model may be necessary for individuals with medical conditions requiring care by an otolaryngologist or for individuals with complex or more severe forms of hearing loss, this level of care may not always be required for all adults with hearing loss (AAA, 2006; Valente, 2006). For example, an individual with a longstanding age-related hearing loss that only moderately interferes with daily functioning may be reluctant to commit the resources and time needed to pursue this level of care given the multitude of steps required to obtain basic amplification (Cox et al., 2014; Donahue et al., 2010).

Alternative care models for other types of common and chronic medical conditions (e.g., presbyopia, diabetes, etc.) have rapidly expanded with the use of community health workers and retail clinics located in drugstores to complement the traditional medical model of care (Iglehart, 2015; Perry et al., 2014; Villaseñor and Krouse, 2016). Although these and other alternative models of care have not yet been widely used or investigated for hearing loss management specifically, these options may provide effective models for delivering more hearing health care to more people (see below and Chapter 5). In order to maximize the potential of these innovative

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models and ensure that they are implemented where appropriate and most effective, the models will need to be evaluated for possible risks to safety, quality, value, and cost effectiveness.

Community Health Workers

A community health worker has been defined as a public health worker who is a trusted member of the community or who has an unusually close understanding of the community served (APHA, 2016). They can implement programs for and conduct outreach to community members with the goal of promoting, maintaining, and improving individual and community health (BLS, 2016). Community health workers have been used in many other health care sectors to increase access to care, improve the use of health services, and enhance successful chronic disease prevention and management (Johnson et al., 2012; Perry and Zulliger, 2012; Rosenthal et al., 2010). They may be trained and supervised in the provision of basic services to the community and serve as liaisons between the health care system and the community.

With regard to hearing health care in global settings, community health workers have been taught skills in basic audiometry using automated or manual audiometers, which can use a widely accepted threshold-finding algorithm (the modified Hughson-Westlake bracketing procedure) to generate an audiogram that meets current calibration standards and is consistent with ASHA guidelines (Shaw, 2015). Community health workers have also dispensed basic hearing assistive technology that may be pre-programmed or "ready-to-wear" (WWH, 2016).

Community health workers have the potential to play a role in helping an individual and his or her family cope with hearing loss as a chronic condition, potentially by teaching them about hearing strategies and effective communication skills, maximizing the use of hearing aids by pairing them with other assistive products and with other communications and emergency alert systems (see Chapter 4), and understanding their rights through disability and other relevant policies and laws. Basic hearing assessments might be able to be performed at the community clinic or in the home. In order to serve as an effective tool for community health workers, audiometric equipment should be reasonably priced, portable, and easy to use; and it should be calibrated according to American National Standards Institute specifications and any relevant state requirements. Quality assurance, adequate supervision, and ongoing training would also be important considerations. More research will be needed on the development of potential roles for integrating community health workers into hearing health care teams.

The community health worker model is also consistent with the trend toward providing initial health care services closer to the patient's residence,

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rather than requiring the patient to engage the health care system in large, complex facilities, such as academic medical centers and full-service outpatient clinics and hospitals. There is evidence that community health workers can successfully facilitate access to health care for subpopulations and deliver health education in a culturally appropriate manner (Brownstein et al., 2007; Ingram et al., 2012; Postma et al., 2009; Staten et al., 2012). Community health workers could serve as a conduit and liaison to the hearing health care system and the health care system as a whole. Given the prevalence of hearing loss in the United States and the multiple follow-up visits that are often needed for comprehensive hearing health care, community health workers offer a potentially beneficial mode of extending hearing health care to a broader segment of the U.S. population, and additional research is needed to further explore this model. Chapter 5 discusses the potential costs associated with the use of community health workers as well as possible reimbursement challenges and opportunities of this model.

Mobile Health Applications

Mobile health, or mHealth (and now "connected health"), typically refers to the use of mobile and wireless technologies to improve the delivery of health care to patients and to improve health and behavioral outcomes and prevention. Together with biological sensors that can collect and store data, these technologies have the potential to add value to hearing health care delivery and hearing health outcomes (HIMSS, 2016; WHO, 2011).

In an effort to improve health care delivery, mHealth applications and intelligent communication systems have been developed to increase access for patients by providing links to health care providers for reviews of symptoms, remote application of diagnostic tools, and ongoing medical management and treatment. In addition to tools that provide remote access for patients to health care providers through smartphones and tablets, diagnostic tools have been developed for mobile devices and their high-quality built-in cameras, microphones, and loudspeakers (Weinstein et al., 2014). Given the need for delivering and recording sound when providing hearing health care, these advances in mobile technologies expand the suite of options for hearing health care to include mHealth. Thanks to their portability, ease of use, and potential to lower costs, mobile devices can serve critical roles for delivery of hearing health care to underserved populations, military conflict locations, rural and remote regions, and low- and middle-income areas of the United States (Källander et al., 2013; Osborn and Mulvaney, 2013; Pew Research Center, 2015). These technologies can be used in real time to (1) perform an otologic examination (as with an otoscope); (2) assess the magnitude of hearing loss; (3) determine an individual's ability to understand speech against various backgrounds (using a

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digits-in-noise or similar task); (4) perform a self-assessment of communication skills; (5) conduct self-paced speech-perception training or listening and communication training; and (6) engage with others in peer-support groups for patients and family members (Moren, 2014; Olson, 2015). Smartphone apps have recently become available that enable individuals to systematically adjust the gain and frequency response of their hearing aids during the hearing-aid selection process, with the assistance of their audiologist (Paglialonga et al., 2015). Evaluations of these various uses in improving hearing health care are critical.

Some applications are designed to be used without direct access to hearing health care providers and instead employ algorithms that evaluate images (such as audiograms or the results of video otoscopy), determine diagnoses, and recommend treatments or referral (Hussein et al., 2015). Applications are also available to determine if patients' hearing aids are in good working order, to allow audiologists to remotely set certain hearing aid features, and to enable individuals to adjust their own hearing aids as they move in and out of different environments (Picou, 2014). In the immediate future, self-fit or pre-programmed hearing aids will become more widely available, and these options could be fit with the assistance of a smartphone app and a remote connection to an audiologist (as needed) (Romano, 2014). However, just as each individual's hearing loss and hearing needs are unique, a self-fit or pre-programmed option may work well for some and not for others.

Mobile technologies and wearable devices are creating new opportunities for personal health monitoring, tracking, and management, which in turn should lead to improved health behaviors, outcomes, and prevention and also reduced health risks (Bastawrous and Armstrong, 2013; Hall et al., 2015). These devices make it possible to apply mobile technologies to personal or family activities related to health and wellness, which can include communication abilities. At the same time, they can monitor the indoor environment, such as levels of environmental noise. Some devices can serve as health assistive technologies, including for hearing and communication. The large amount of data collected and aggregated by devices creates potential options for health assessments and might be adapted to improve communication-related outcomes (Gay and Leijdekkers, 2015). Because technology advances quickly, the development of many more uses for mHealth in hearing health care is likely.

Research on the benefits, risks, and cost effectiveness of mHealth is lagging behind the use of mHealth technologies by consumers. Research questions for mHealth systems science concern the technologies' efficacy, or the extent to which the use of mobile technologies improve health and wellness outcomes, as well as the validity and reliability of mHealth technologies (Conroy et al., 2014; Knight et al., 2015; Payne et al., 2015; Stoyanov et

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al., 2015; Yang et al., 2015). Evidence of the effects of mobile technologies and mobile networks on access to hearing health care across demographic groups is also needed. It will also be of interest to determine how mHealth technologies can best be deployed to motivate people to engage in healthy behaviors related to hearing and communication and the impact of changing communication patterns between patients and providers. Other questions include (1) the effects on the hearing health care provider workforce; (2) the need for regulatory controls to ensure information privacy, confidentiality, and security of mHealth data; (3) the risks to user safety from health behavior and engineering perspectives; and (4) technical challenges, such as the need for interoperability among networks. Because research is already lagging behind consumer use, and because technology evolves quickly, it is critical that research into mHealth use for hearing care be given much more attention (Bastawrous and Armstrong, 2013).

Tele-Audiology

One of the earliest forms of "connected health" was telehealth, which is the exchange of health information across remote sites through various forms of telecommunication technologies, such as smartphones, live video conferencing, asynchronous (cloud-based) services for the "store-and-forward" communication of records, email, and other forms of wireless communication. These systems have been used in some form for decades, primarily to connect hospitals in large urban centers to rural areas where health care services may be limited (especially specialty services), with the goals of improving access, reducing cost, and increasing efficiency, while maintaining the quality of care. The use of telehealth technologies has grown rapidly in recent years due to the widespread availability of Wi-Fi and Internet access to support these services. Telehealth options are now available beyond hospitals, such as in private practice offices, assisted living centers, business centers, and patients' homes.

As telehealth has grown, tele-audiology services provided by audiologists have become more widely available in some areas, according to a professional association survey (ASHA, 2016a). Tele-audiology fills a specific need for people who live in rural areas, for those who do not have transportation or are not physically able to travel to obtain audiology services, and for those who move to other locations and wish to maintain a relationship with their hearing health care provider. Current tele-audiology technologies provide capabilities for audiometry, obtaining case histories and completing self-report questionnaires, Web-based support groups, professional-to-professional communication, hearing screening, auditory rehabilitation programs, video otoscopy, and the programming of hearing aids.

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One of the leading users of tele-audiology services is the VA, which serves a large number of patients who live outside urban areas and far from VA medical centers (West et al., 2010). Access to audiology services is provided by 455 VA clinical facilities and 132 sites with telehealth carts containing audiology equipment; more than 16,000 tele-audiology patient encounters were completed in fiscal year 2014 (Chandler, 2015). A pilot program launched in 2009 used community-based outpatient clinics as tele-audiology sites and focused on the remote programming of hearing aids. Starting from 10 pilot sites, the program has expanded to 71 sites across the country and has evolved to include remote audiometry with calibration capabilities. Tele-audiology outcomes in the VA are reported to be as good as or better than traditional face-to-face encounters (Beck, 2015). Among the innovative tele-audiology technologies that may increase access in the future are home hearing tests, the scanning and transmission of ear canal images, and the programming of hearing aids in the home through smartphones or tablet computers. The VA has demonstrated that tele-audiology can be a successful program (Gladden et al., 2015). In order to realize the full potential of tele-audiology services, a number of questions will need to be resolved, including how to ensure the accuracy, reliability, and quality of diagnostic evaluations; how to provide high-quality communications between patients and providers; how to confirm patients' understanding of the results; and how to promote patients' acceptance of technologies and auditory rehabilitation services. Questions also remain regarding the costs of the required technologies; cost effectiveness of telehealth and tele-audiology (see Chapter 5); maintenance of confidentiality; and data security. There may also be challenges connected to state licensure laws—e.g., if a hearing health care professional provides care via tele-audiology to a patient located in another state; possible effects on malpractice risk; and reimbursement regulations (see Chapter 5).

Retail Clinics

Among the newest innovations in health care delivery is the trend to provide simple services at lower cost using new technology, staff with less training (e.g., less expensive providers), and increased automation through the use of strict protocols, algorithms, and clinical practice guidelines. As has been the case with the remote services provided by mHealth applications and telehealth, in-person health care visits at sites other than traditional provider offices (such as retail clinics) have been growing in popularity. For example, there were an estimated 10.5 million visits at retail clinics in 2012 (Bachrach et al., 2015). These in-person visits at community locations provide many of the same benefits as remote services (mHealth and telehealth), including decreased overall costs, lower overhead, reduced

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patient out-of-pocket costs, improved access, increased efficiency, and reasonably short wait times (Salinsky, 2009; Thygeson et al., 2008). Furthermore, although retail clinics were originally viewed as a place to provide basic care for health concerns that were not likely to require follow-up care (e.g., sore throat, ear infection, urinary tract infection, flu vaccination), these clinics are evolving to also manage chronic conditions (e.g., diabetes) (Bachrach et al., 2015). Some evidence suggests that the quality of care in retail clinics is the same as, or better than, that provided in physician offices, urgent care clinics, and emergency departments while the per-episode costs are lower (Mehrotra et al., 2009). Customer satisfaction with retail clinics has been reported to be high. In one national online survey, nearly 80 percent of respondents who had been to a retail clinic rated their experience as being the same as or better than previous interactions with a traditional site of care (Smith et al., 2016). In the same survey, one quarter of respondents reported that they would be willing to use a retail clinic to manage a chronic condition (Smith et al., 2016). However, thus far, retail clinics appear to attract a younger population of patients who do not have existing relationships with primary care providers, which may increase overall utilization but may not improve access to underserved communities or older adults (Mehrotra, 2015).

Within the realm of hearing health care, retail clinics are beginning to explore opportunities to gain a share of the market and expand services for hearing loss. For example, in 2014, Walgreens (with 8,000 locations in the United States) merged with Alliance Boots (a large pharmacy chain based in the United Kingdom) to form Walgreens Boots Alliance. In the United Kingdom, Alliance Boots manages approximately 390 hearing care practices within its pharmacies (SEC, 2014). Since the companies joined forces, Walgreens launched an evaluation of a concept for offering hearing health care services and technologies within its pharmacies at four locations in the United States: Chicago, Dallas, Orlando, and Phoenix (Taylor, 2015). Connect Hearing (Sonova) is working with Walgreens to manage the hearing aid satellite clinics at these four locations, but no decision on future activities between the two companies beyond this limited time project has been announced. In addition to this pilot, Costco Wholesale has opened hearing aid centers in approximately 500 of its warehouses across the United States (see Chapter 5 for additional discussion of the Costco Wholesale model). It remains to be seen whether these clinics are successful in terms of health outcomes, consumer satisfaction, and improving accessibility and affordability. Chapter 5 discusses cost and reimbursement for care that is provided in retail settings.

Research on retail clinics is limited, and little is known about their effects on quality (a potential problem because of the limited availability of local supervision), their impact on long-term outcomes and follow-up

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care, or their effects on downstream costs (Iglehart, 2015). In order to integrate retail clinics into the hearing health care system and maximize their value for people who have hearing loss, the clinics will need supporting technology and infrastructure to provide basic levels of hearing health care. Care providers who work in retail clinics will need training and support to perform hearing tests, discuss treatment options with patients, and serve as a link to the health care system when referrals are needed for follow-up care.

Summary

The emergence of innovative models of hearing health care and hearing technologies (described in Chapter 4) necessitates research to investigate the relative risks and benefits of these new approaches in comparison to the traditional models of hearing health care delivery, which include hearing aids that are dispensed by hearing health care professionals. A 2009 IOM report that identified priorities for comparative effectiveness research highlighted the importance of investigating and understanding different hearing loss treatments as a priority (IOM, 2009). Since the release of that report, there has been scant new published research investigating these treatment options, particularly on broader and more critical patient-centered outcomes. While there have been several studies on tele-audiology (Blamey et al., 2015), there has been limited research on other hearing health care delivery models (e.g., community health workers, retail clinics) or on direct comparison of different technologies (e.g., over-the-counter devices, high- versus low-end hearing aids) (Cox et al., 2014). Comparative effectiveness research needs to focus on patient-centered outcomes, such as the benefit to real-world communicative function and health-related quality of life, rather than focus on traditional audiologic outcomes, such as hearing and speech tests that are performed in a sound-treated booth.

Examine the Medicare Requirement for Physician Referral for Diagnostic Hearing Testing

The pathway by which an individual enters the hearing health care system can depend on whether that person has insurance coverage that dictates the terms for reimbursement. Individuals who do not have hearing health care insurance coverage can enter the hearing health care system by seeing an audiologist without first obtaining a referral from a physician or non-physician medical practitioner and pay for all of the services out of pocket, i.e., without reimbursement. Being able to see an audiologist without first obtaining a referral is commonly referred to as "direct access." In contrast, if an individual has Medicare coverage, an audiologist-provided diagnostic

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hearing testing will be covered by Medicare only if the individual first obtains a referral from a physician or nonphysician medical practitioner (e.g., a physician assistant or a nurse practitioner).[11] In cases where a Medicare beneficiary expresses concern about his or her hearing to a primary care provider, the provider could choose to refer the patient to an audiologist for diagnostic hearing testing or to an otolaryngologist for an initial evaluation, and then a provider in that otolaryngology practice—likely an audiologist—in turn may conduct a diagnostic hearing test. In the case of either referral pathway, the Medicare beneficiary must go through at least one provider visit to obtain the referral before any hearing evaluation is performed by an audiologist that can be covered by Medicare. The nature of the hearing evaluation covered by Medicare is limited to tests needed "for the purpose of obtaining information necessary for the physicians' diagnostic medical evaluation or to determine the appropriate medical or surgical treatment of a hearing deficit or related medical problem" (CMS, 2008, p. 6). The referral pathway to access diagnostic hearing testing follows Medicare policy for all diagnostic testing (CMS, 2007). Audiologist-provided evaluations designed to assess an individual's functional or communicative abilities or auditory rehabilitation candidacy are not covered by Medicare. Nor is any care related to obtaining a hearing aid covered by Medicare because of the explicit exclusion in the Social Security Amendments of 1965.[12]

Other federally funded programs with hearing health care coverage provisions include the Federal Employees Health Benefit plans (plans approved through the Office of Personnel Management and offered by individual carriers), the Department of Defense Medical Health System, and the Veterans Health Administration. As of 2005, approximately 60 percent of the Federal Employees Health Benefits plans, which cover many federal employees and members of the U.S. Congress, provided coverage for hearing testing performed by an audiologist without requiring a referral from a physician or nonphysician medical practitioner; the coverage depends on the individual plan, similar to the case with insurers in the private sector (CMS, 2007). Coverage of audiologist-provided diagnostic testing for active duty military (provided through the Department of Defense Medical Health System) and for veterans (provided by the Veterans Health Administration) follows a similar model of not requiring a referral from a physician or nonphysician medical practitioner (CMS, 2007; Packer and Henselman, 2015). The Veterans Health Administration employs its own licensed audiologists who work in the same facilities as other health care providers, so this model is different from a community care model.

[11] Centers for Medicare & Medicaid Services, 42 C.F.R. § 410.32.

[12] Social Security Amendments of 1965, Public Law 89-97, 89th Cong., 1st sess. (July 30, 1965).

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For patients, there are advantages and disadvantages with both the referral pathway and the direct access pathway. The disadvantages of referral can include a lack of access to medical providers due to financial barriers, appointment wait times, or transportation difficulties. Hence, if medical referral is thought to be advisable, it should be balanced by a benefit to the consumer in the form of better, more coordinated primary and specialty health care. For those who have limited access to transportation or who rely on others to accompany them to provider visits, each trip to see a provider can present a burden. Patients generally develop hearing impairment slowly over time, so appointments are usually not needed urgently. However, the average wait time to see a family physician is approximately 19.5 days, and a shortfall in primary care physicians by 2020 has been projected—both of these factors may delay the time it takes to get evaluated and receive a diagnosis (HRSA, 2016a; Twiddy, 2014). In one recent study, 71 percent of members of the American Academy of Otolaryngology—Head and Neck Surgery reported being able to see a new patient in 2 weeks or less.[13] Studies have demonstrated that the overall ear disease prevalence in the population of adults with age-related hearing loss is low (Zapala et al., 2015) and that patient populations in health systems that do not require a referral do not have higher rates of missed disease (Zapala et al., 2010) (see Table 3-3).

Conversely, the current medical model in which Medicare coverage for hearing health care requires a referral follows the "medical home" model (NCSL, 2012), which ensures that those with hearing loss see a physician or nonphysician medical practitioner who can assess the possible relationship between the individual's general health and hearing loss. Given the negative health outcomes that can be associated with hearing loss (see Chapter 2), ensuring that a physician or nonphysician medical practitioner stays involved with and informed of a patient's hearing ability and any diagnosis may be important for overall health. The medical home model ensures that older adults with hearing loss receive coordinated care for their hearing loss, and also ensures that providers are aware of communication limitations with their patients to whom they must convey critically important health information (such as instructions for medications, etc.). Geriatric medicine is characteristically interdisciplinary, due in part to the interplay of reduced function in multiple physiological systems in older adults and the impact on sensory systems, including hearing and balance.

[13] Personal communication. Letter to the Committee on Accessible and Affordable Hearing Health Care for Adults, from James Denneny III, Executive Vice President/CEO, American Academy of Otolaryngology—Head and Neck Surgery. Received January 22, 2016. Available by request from the National Academies of Sciences, Engineering, and Medicine Public Access Records Office. For more information, email PARO@nas.edu.

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In addition to having an increased incidence of hearing loss, the Medicare population is more likely to have problems with dizziness and imbalance, and those who do have an increased incidence of falls (Agrawal et al., 2009). While inner ear vestibular disorders are thought to account for some of the cases involving dizziness that are presented to primary care providers, other causes include cardiovascular disease, systemic infection, psychiatric conditions, metabolic disturbances, and medications (for a review, see Sloane et al., 2001). The association of hearing loss with these conditions may indicate that the primary care provider should be an integral part of the initial episode of care related to any diagnosis of hearing loss, and thus direct access, which bypasses general medical providers, may not be in the patient's best interests.

The committee considered direct access versus requiring a referral with particular focus on how it relates to the committee's task of increasing access and affordability of hearing health care for adults. On one hand, the current Medicare policies requiring a referral may help ensure coordination and completeness of care for older adults who are Medicare beneficiaries and may help preserve a primary care provider as a central repository of all of an individual's health care information. On the other hand, providing a direct pathway to audiologists without requiring a referral might safely decrease the burden on Medicare beneficiaries while increasing accessibility to hearing health care, and communication between audiologists and primary care providers could accomplish the same team-based approach that the current Medicare referral requirement provides. Both pathways have their merits in terms of patient health and hearing health care access. Some committee members thought there were sufficient data to support recommending direct access without referral for Medicare beneficiaries. Other committee members were concerned about removing medical practitioner involvement and did not think there were sufficient data to understand how direct access would impact the effectiveness of the medical home for Medicare beneficiaries. Consequently, the committee could not come to a consensus on this issue. The committee thought that additional evidence might clarify these benefits and challenges for Medicare beneficiaries.

NEXT STEPS AND RECOMMENDATIONS

This chapter has covered a large number of critical issues regarding hearing health care services, and it has reviewed opportunities to improve these services, including needed areas of research. As new programs and delivery models are explored, it will be critical that research be conducted to support evidence-based practice. Ensuring that consumers are informed about their options and that they receive quality services that meet or exceed performance standards and also reach diverse and underserved

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populations will require coordinated efforts among federal, state, and local government agencies and a range of professional organizations, manufacturers and other private-sector businesses, health care providers, and advocacy organizations. The committee offers the following goals and recommendations for improving hearing health care services. In addition, in Chapter 5 the committee recommends demonstration projects and studies that tie health care service delivery to affordability.

Goal 2: ***Develop and Promote Measures to Assess and Improve Quality of Hearing Health Care Services***

Recommendation 2: The Centers for Medicare & Medicaid Services, the National Institutes of Health, the Department of Defense, the Department of Veterans Affairs, other relevant federal agencies, hearing health care professional associations and providers, advocacy organizations, health care quality improvement organizations, health insurance companies, and health systems should collaborate to

- **Align and promote best practices and core competencies across the continuum of hearing health care, and implement mechanisms to ensure widespread adherence; and**
- **Research, develop, and implement a set of quality metrics and measures to evaluate hearing health care services with the end goal of improving hearing- and communication-focused patient outcomes.**

Goal 3: ***Remove FDA Regulation for Medical Evaluation or Waiver to Purchase a Hearing Aid***

Recommendation 3: The Food and Drug Administration should remove the regulation that an adult seeking hearing aids be required to first have a medical evaluation or sign a waiver of that evaluation and should ensure consumers receive information about the medical conditions that could cause hearing loss through continued inclusion of that information in hearing aid user instructional brochures.

Goal 4: ***Empower Consumers and Patients in Their Use of Hearing Health Care***

Recommendation 4: Hearing health care professionals, professional associations, advocacy organizations, and relevant government agencies such as the Office for Civil Rights at the Department of Health and Human Services should ensure patients are aware of, and understand how to exercise, their rights of access to information about themselves under the Health Insurance Portability and Accountability Act Privacy

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Rule (45 C.F.R. Section 164.524), including their audiograms and hearing aid programming history.

Goal 5: *Improve Access to Hearing Health Care for Underserved and Vulnerable Populations*

Recommendation 5: The Health Resources & Services Administration, state health departments, advocacy organizations, and hearing health care professional schools and associations should

- **Collaborate and partner with health care providers to ensure hearing health care accessibility throughout rural and underserved areas using mechanisms such as telehealth, outreach clinics (including federally qualified community health centers), and community health workers;**
- **Support and promote programs, including incentives such as tuition assistance, to increase diversity in all sectors of the hearing health care workforce; and**
- **Promote the training of cultural competency in the hearing health care workforce and incentivize practice in underserved communities.**

Goal 6: *Promote Hearing Health Care in Wellness and Medical Visits*

Recommendation 6: Public health agencies (including the Centers for Disease Control and Prevention and state health departments), health care systems (including those of the Department of Defense and the Department of Veterans Affairs), health care professional schools and associations, advocacy organizations, health care providers, and individuals and their families should promote hearing health in regular medical and wellness visits (including the Medicare Annual Wellness Visit).

Specifically,

- Use patient visits to assess and discuss potential hearing difficulties that could affect doctor–patient communication and overall patient well-being, to encourage individuals and their family members and caregivers to discuss hearing concerns, to raise awareness among older adults about age-related hearing loss, and to encourage referral when appropriate; and
- Develop and disseminate core competencies, curricula, and continuing education opportunities focused on hearing health care, particularly for primary care providers.

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4

Hearing Technologies: Expanding Options

The hearing technology landscape is ever evolving and encompasses a wide range of products—from traditional hearing aids regulated as medical devices to consumer-technology products and hearing assistive technologies—with the overall goal of enabling the user to hear and communicate better in their homes (e.g., television), in public spaces (e.g., movies and lectures), and through phones or other communications products and systems. Both the access to and the affordability of these technologies are a concern in the United States and across the globe. Many people with hearing loss do not have hearing aids or other technologies. Of those who do have hearing aids, some choose not to use them. There are regulatory and policy challenges as well as research and design opportunities for improving hearing technologies so that they better meet the needs of individuals with hearing loss.

This chapter examines the broad range of hearing-related technologies. After a brief overview of the hearing technology landscape, including a discussion of the extent of use of these technologies and user satisfaction, the chapter examines studies on hearing aid efficacy and effectiveness (the nature and scope of the market is discussed in Chapter 5). The chapter then delves into the U.S. regulatory structure for hearing aids and other products that address hearing loss. The chapter closes with the committee's recommendations on next steps for improving the accessibility and availability of hearing health care technology. Because the committee was charged to focus on nonsurgical interventions, the chapter does not address cochlear implants or implantable bone conduction hearing aids in detail.

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OVERVIEW OF HEARING TECHNOLOGIES

The recently coined term *hearables* has been used to refer to a wide range of hearing- and ear-based technologies (Cannington, 2015; Hunn, 2015) that have been defined as "wearable technology for the ear" (Chandran, 2014; Hosford-Dunn, 2015). Hearable technologies include the devices and products relevant to hearing loss that are discussed in this report (see Box 4-1) as well as other products used via the ear, such as health-related technologies (e.g., monitors for heart rate and other health parameters) and the large variety of headphones, ear buds, and other music and streaming technologies. One estimate projects that the market for hearables will be more than $17 billion by 2020 (Hunn, 2015). Hearables can combine multiple functions and often feature innovations in style, color, and accessibility. The interest in audio technologies suggests a general public that has, and will increasingly have, personal familiarity with technologies that are for hearing or that are worn in the ear.

Hearing technology is undergoing rapid change as great advances in technologies and design features result in new products. Clayton Christensen used the term "disruptive innovation" to describe "a technology that brings a much more affordable product or service that is much simpler to use into a market. And so it allows a whole new population of consumers to afford to own and have the skill to use a product or service, whereas historically,

Box 4-1 TYPES OF HEARING-RELATED TECHNOLOGIES

Medical Devices for Hearing Loss
- Hearing aids
- Over-the-counter wearable hearing devices (proposed)

Consumer Electronics Not Intended for Hearing Loss
- Personal sound amplification products

Hearing Assistive Products and Technologies
- FM receiver systems
- Infrared receiver systems
- Hearing induction loop technologies
- Other assistive technologies

Communications Technologies
- Captioning
- Interoperability technologies
- Emergency information technologies

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the ability to access was limited to people who have a lot of money or a lot of skill" (Smith, 2007, p. w288). Examples of disruptive innovations include personal computers, cell phones, and retail medical clinics, all of which are products or services that have increased consumer options, generally at lower cost. To disrupt an industry, an innovative technology needs to be coupled with business-model innovation to harness the full potential of the technology (Christensen et al., 2009). Outdated regulations and reimbursement models have the potential to entrench older technologies, even as more cost-effective and more accessible technologies become available. Thus, innovations in hearing technology create a potential for disruptive change in the market for hearing devices, products, and services, but whether the market transitions may depend on additional regulatory, business, and reimbursement factors. This complex topic has been the subject of recent recommendations by the President's Council of Advisors on Science and Technology (PCAST) (Cassel et al., 2016; PCAST, 2015).

Hearing Aids

Hearing aids are medical devices defined by the Food and Drug Administration (FDA) as "any wearable instrument or device designed for, offered for the purpose of, or represented as aiding persons with or compensating for, impaired hearing."[1] As detailed below, FDA regulates hearing aids as Class I or Class II medical devices. Hearing aids generally have a number of components including a microphone, analog-to-digital converter, digital sound processor, output transducer, and battery. Although often compared to glasses (termed "spectacles" in FDA regulatory language), current hearing aids cannot correct or restore normal hearing acuity to the extent that glasses or contact lenses can correct vision loss or restore normal visual acuity for many people. The general goal of well-fit hearing aids is to improve the audibility of even soft speech, music, and other sounds while assuring that these same sounds and other already audible sounds do not become uncomfortably loud. Hearing aids can be customized to meet the needs of the individual (see Chapter 3) including customization of the frequencies and intensities of sound and other adjustable parameters in the processing of algorithms.

Technological efforts to address hearing loss have a long history. Early hearing trumpets and other "hearing aids" focused on increasing the volume and directionality of sound. With a series of advances in technology (carbon transmitters in the late 1800s, vacuum tubes in the early 1900s, transistors beginning in the 1920s and in more common use in the 1950s, microprocessors in the 1970s and 1980s, and digitalization of sound in the

[1] 21 C.F.R. 801.420.

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1980s and 1990s), the size of hearing aids has decreased, while the capabilities to provide clearer sound have greatly improved (Mills, 2011; Mudry and Dodele, 2000; Washington University School of Medicine, 2016). In addition, advances in signal processing and other technologies, improvements in battery capabilities, and the advent of wireless access have made it possible for hearing aids to include telecoils (for coupling with compatible electronic products; see further description later in the chapter), directional microphones, noise reduction circuitry, direct audio input and processing algorithms that are intended to minimize background noise and maximize conversational sound, and capabilities for wireless signal reception for interactions with televisions, phones, computers and tablets, and other communication and hearing assistive technologies. The extent to which these components (and other innovations) are included in specific hearing aid products varies across the range of basic to premium level aids. Upgrades and variations include the extent and nature of Bluetooth capability, the inclusion of a telecoil, the number of channels, automatic switching among programs, feedback reduction, and smartphone applications to program or personalize the device (*Consumer Reports*, 2015; HLAA, 2016; Mamo et al., 2016; McCormack and Fortnum, 2013). Research and design efforts continue to focus on improvements in various capabilities.

The different types of air conduction hearing aids are distinguished primarily by the location where the device is placed—behind the ear, in the ear, or in the ear canal—with the various types providing varying levels of visibility, ease of control, and features (*Consumer Reports*, 2015; NIDCD, 2013). The literature on the effectiveness of hearing aids and an overview of the regulatory landscape is described later in this chapter.

For most adults with mild to moderate sensorineural hearing loss, a common complaint is difficulty in understanding speech, especially in noisy environments. When measured using a speech-in-noise task (see Chapters 3 and 6), the results may indicate that a more advantageous signal-to-noise ratio is required to understand speech than for individuals with normal hearing. In some cases, given that the hearing aid is well fit and improves speech audibility in higher frequencies, the signal-to-noise ratio may be improved. However, under certain conditions, even well-fit hearing aids may not necessarily improve the signal-to-noise ratio to result in improved speech recognition in noise. For these individuals with mild to moderate hearing loss, hearing assistive technologies and/or auditory rehabilitation may provide additional benefit.

FDA has established regulatory requirements for hearing aids that include technical standards, quality system regulation (including good manufacturing practice requirements), requirements for mandatory labeling and user instructional brochures, and requirements for a pre-purchase medical evaluation (or documented waiver) (see Chapter 3 and below for further

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discussion of the medical waiver). These FDA regulations, along with a number of state regulations, have restricted the availability of hearing aids to being mainly dispensed through medical, audiology, or hearing instrument specialists. To date, FDA has not been receptive to proposals for over-the-counter (OTC) or direct-to-consumer hearing aids. This has led to the development of hearing-related technologies that are positioned as consumer electronics products rather than medical devices, including personal sound amplification products, or PSAPs (discussed below).

The immense demand for affordable and easy-to-deliver hearing health care in developing countries is resulting in innovations in the design of hearing aids and hearing assistive technologies aimed at increasing affordability and simplifying use. An estimated 360 million individuals in developing countries live with disabling hearing loss, and in 2004 the World Health Organization set out guidelines for hearing aids and services in an effort to support efforts to meet this demand (Olusanya et al., 2014; WHO, 2004). Although developing countries have a major need for low-cost hearing technologies, they often have a limited health care infrastructure with few audiologists and otolaryngologists. One avenue toward meeting the need would be the refinement of self-fitting hearing aids, which assess an individual's hearing and transfer the resulting data directly to the hearing aid, which sets itself appropriately, ideally without computers or other external requirements (Caposecco et al., 2011; Convery et al., 2011; Wong, 2011). Other avenues being explored include varying hearing assistive technologies and the use of solar power and other innovative power options (McPherson, 2011; Parving and Christensen, 2004). These and other innovations in hearing aid technology and fittings may also increase the options for underserved populations in the United States (Clark and de Swanepoel, 2014).

Access to hearing health care services may also improve with greater availability of hearing aids that have an open platform approach to programming. For the purposes of this report, an "open platform" for hearing aid programming refers to a programming platform that allows any hearing health care professional to adjust the device settings to meet a consumer's needs. "Open platform" does not refer to the proprietary software that confers general hearing aid functionality.

Currently, the settings on many hearing aids can only be adjusted by hearing health care professionals who have an agreement with a given manufacturer or distributor to sell that brand of hearing aid. Furthermore, many hearing health care professionals only sell one or a few different brands of hearing aids. A consumer who purchases a hearing aid from one hearing health care professional may find that the manufacturer or distributor has restricted access for adjusting the settings, and thus, the consumer may have to seek all additional programming services from the same distributor that originally sold him or her the product. In contrast, open platforms allow

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the hearing aid to be programmed by any provider, increasing the portability of care and the number of professionals from whom the individual can obtain care. This approach allows consumers who want to switch to a different hearing health care professional, who are traveling, or who move to a new location to have their hearing health care needs addressed by the professional of their choice. Additionally, technologies will continue to evolve and may enable individuals to make hearing aid adjustments for themselves directly or through a mobile app or other pathway rather than having to depend on a professional every time an adjustment is needed.

The committee urges the development of the standards needed for an open platform approach and the collaborative efforts by manufacturers, distributors, and hearing health care professionals to ensure implementation. The committee also urges greater efforts on the part of those who sell hearing aids to educate consumers about whether a given hearing aid's programming platform is open or closed. Additionally, consumer-friendly information on the programming parameters and other features of specific hearing aids should be furnished to consumers to allow easier comparisons between the devices (see also Chapter 6). These notifications should be provided prior to sale so that consumers can make informed purchasing decisions.

Extent of Hearing Aid Use

In the United States the prevalence of hearing aid use is significantly lower than the prevalence of hearing loss. In a report examining the results of the 1999–2006 National Health and Nutrition Examination Surveys (NHANES) (audiological testing was conducted from 1999 to 2004 in a sample of participants ages 50 to 69 years and in 2005 was conducted in all participants 70 years of age and older), it was estimated that hearing aids were worn by 3.8 million Americans, or 14.2 percent of those who had hearing loss (Chien and Lin, 2012) (see Table 4-1). An earlier report that was focused on NHANES participants ages 70 and older found a strong gradient of hearing aid use based on the severity of hearing loss, with 3 percent of those with a mild loss, 40 percent of those with a moderate loss, and 77 percent of those with a severe loss regularly wearing hearing aids (Lin et al., 2011). In a multivariable model, the severity of hearing loss, college education, and leisure noise exposure were positively associated with hearing aid use, but race/ethnicity, age, sex, and income were not significantly associated with the use of a hearing aid.

Bainbridge and Ramachandran analyzed NHANES data from 2005–2006 and 2009–2010 and found that among participants 70 years of age and older who were deemed to be hearing aid candidates (pure tone average [PTA] 0.5–2 kilohertz [kHz] > 35 decibel hearing level [dB HL] and who

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TABLE 4-1
Prevalence and Number of Individuals 50 Years or Older with Hearing Loss[a] Using Hearing Aids in the United States[b]

	Prevalence of Hearing Aid Use Among Adults with Hearing Loss[a] ≥ 25 dB, Percent (95% CI)[c]						
	Sex		Hearing Loss Severity[d]		Total		
Age, Years	Male	Female	Mild (> 25–40 dB)	Moderate or Greater > 40 dB	Overall Prevalence of Hearing Aid Use	Number with Hearing Aids, Millions	Number with hearing loss[a] ≥ 25 dB, millions
50–59	4.3 (0–9.5)	4.5 (0–13.5)	2.7 (0–6.6)	11.8 (0–27.5)	4.3 (0–8.8)	0.2	4.5
60–69	7.3 (2.5–12.1)	7.2 (1.4–13.0)	2.6 (0–5.2)	23.9 (10.6–37.2)	7.3 (3.6–10.9)	0.4	6.1
70–79	21.1 (14.5–27.6)	12.7 (6.0–19.5)	3.4 (0.3–6.5)	47.8 (37.0–58.6)	17.0 (12.4–21.6)	1.5	8.8
≥ 80	28.1 (20.3–35.9)	17.9 (11.2–24.7)	3.4 (0–7.7)	35.7 (28.7–42.7)	22.1 (18.5–25.8)	1.6	7.3
Estimated total number of individuals with hearing aids and with hearing loss, in millions						3.8[d]	26.7

[a]Hearing loss was defined as a speech-frequency pure tone average of hearing thresholds at 0.5-, 1-, 2-, and 4-kHz tones presented by air conduction in the better hearing ear of 25 dB or greater.

[b]Data were derived from the 1999–2006 National Health and Nutrition Examination Survey.

[c]All values represent percent prevalence unless otherwise noted.

[d]Numbers do not sum to group total because of rounding.

NOTE: CI = confidence interval; dB = decibel; kHz = kilohertz.

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reported moderate or worse hearing ability), just one-third used hearing aids (Bainbridge and Ramachandran, 2014). In this study, individuals with the highest incomes were more likely to use hearing aids than the poorest group, but these analyses did not adjust for education.

In the longitudinal Epidemiology of Hearing Loss Study, 14.6 percent of people with hearing loss were current hearing aid users, and 6 percent were former users (Popelka et al., 1998). Even among those participants who reported significant communication problems and handicap, only 33 percent reported currently using a hearing aid, while 32 percent of those with moderate to severe hearing loss reported current use. Factors associated with hearing aid use were older age, a greater severity of hearing loss, having a college education, poorer performance on word recognition tests, and self-reported hearing handicap and loss. Similar results of low hearing aid use were seen in a study of the adult children of participants in the Epidemiology of Hearing Loss Study, with only 4 percent of people with mild loss and 23 percent of participants with moderate-to-severe loss using hearing aids (Nash et al., 2013).

Although no race/ethnicity differences in hearing aid use have been seen in the NHANES data, this may be partly due to limited power, as the number of Hispanics/Latinos enrolled in the study was small. Data from the Hispanic Health and Nutrition Examination Survey showed that less than 10 percent of Hispanics/Latinos with hearing loss used hearing aids (Lee et al., 1991). Even among the participants with PTA > 40 dB HL, only 5 percent of men and 11 percent of women used hearing aids. A follow-up report from Lee and colleagues demonstrated that poorer Mexican Americans were nine times more likely to use hearing aids than other participants; the researchers speculated that the introduction of the Medicaid program may have contributed to the accessibility of hearing aids (Lee et al., 1996).

Hearing Aid User Satisfaction and Barriers to Use

To investigate the low use of hearing aids, studies have examined both the barriers to purchasing the devices and the barriers to use of the devices once purchased. The specific issues regarding cost as a barrier are discussed in Chapter 5.

As part of the longitudinal Epidemiology of Hearing Loss Study, Fischer and colleagues (2011) examined factors associated with acquiring hearing aids during 10 years of follow-up. Among participants with hearing loss in their better ear who were not using hearing aids, 36 percent started using them within 10 years. College graduates and people who reported greater hearing loss or judged their hearing as poor were more likely to become hearing aid users. When participants with hearing loss who had not acquired hearing aids were asked their reasons for not purchasing them, the

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most frequent responses included "did not need it," "cost," "inconvenient to wear," and "poor experience of others."

A review of studies examining the nonuse of hearing aids that were already purchased found that the primary reasons given for nonuse were problems with obtaining improved speech clarity and sound quality and challenges with the fit, comfort, and maintenance of the device (McCormack and Fortnum, 2013) (see Box 4-2). MarkeTrak, an ongoing survey by the Better Hearing Institute, the educational arm of the Hearing Industries Association, has found high levels of satisfaction with hearing aids, particularly with more recent models that have newer technologies, but it also notes challenges (Abrams and Kihm, 2015). In a 2004 MarkeTrak survey, two-thirds of respondents who acknowledged that they had a hearing loss but said that they had not adopted the use of hearing aids reported that their barriers to hearing aid adoption included perceptions of or experiences with problems in hearing aid performance (e.g., whistling, background noise), disappointing results (e.g., hearing not restored), and poor reliability (e.g., due to short battery life or humidity) (Kochkin, 2007).

Knudsen and colleagues (2010) reviewed 39 studies on the correlates of help-seeking behavior, uptake of hearing aids, use of hearing aids, and satisfaction with the devices. The researchers found that those individuals who self-reported that they experienced hearing-related activity limitations or participation restrictions prior to hearing aid fitting had greater satisfaction and higher use. The extent of hearing loss (in the moderate range) was generally associated with seeking help and acquiring a device but was not always associated with increased use or satisfaction.

Box 4-2 EXAMPLES OF REASONS IDENTIFIED FOR NONUSE OF HEARING AIDS AFTER PURCHASE

- Perceived as not effective, particularly in certain situations
- Did not meet expectations
- Challenges with fit, comfort, and use
- Side effects such as rashes or itching
- Stigma
- Challenges with care and maintenance (e.g., changing batteries)
- Ongoing cost of batteries, maintenance, and repair
- Appearance—cosmetic concerns
- Hear well enough without the hearing aid

SOURCE: McCormack and Fortnum, 2013.

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Ng and Loke (2015) reviewed 22 studies of older adults and noted a wide variety of audiologic determinants of hearing aid usage (largely self-reported), with the severity of hearing loss being a primary determinant, along with the type of hearing aid (greater use for those with more advanced signal processing features) and a greater tolerance for background noise. Nonaudiological determinants of the extent of hearing aid use included self-perception of a hearing problem, expectations of potential benefit, concerns of perceived stigma, and support from significant others or from group sessions.

One of the usability challenges for hearing aids that is reported particularly by older adults is that the small size of the devices can lead to difficulties with proper insertion, removal, and maintenance of hearing aids and changing their batteries. Limited vision and manual dexterity in older adults can exacerbate these problems (Clements, 2015; Erber, 2003). Furthermore, the hearing aids can be easy to misplace or lose.

The above studies indicate that sound quality, speech clarity, the amount of background noise, the ease and comfort of fit, battery reliability, and user expectations about the benefits and performance of hearing aids may be important factors affecting the use or nonuse of hearing aids. Although analogies have been drawn between hearing aids and eyeglasses, there are significant differences. Eyeglasses have corrective lenses and, when used, can generally correct visual acuity to the point that the user does not need any other assistive devices or strategies to see clearly. By contrast, hearing aids can improve the audibility of sound by amplification but are not able to restore normal hearing or fully improve communication abilities, especially in noise. Great strides have been made in hearing aids in the past 50 to 60 years, but issues regarding background noise and clarity of sound, among others, can limit benefits, particularly in certain situations and locations. Individuals who have hearing loss and use hearing aids can frequently benefit from hearing assistive technologies and from using strategies such as consideration of the location and proximity to (or away from) the source of the sound. Research efforts focused on hearing aid improvements continue to be needed, as are the development of performance standards for hearing aids and related products and the use of standardized terminology regarding device features to assist the consumer in directly comparing products and better understanding what can and cannot be expected from a given product (see also Chapter 6). Consistency across manufacturers in naming and describing the features of hearing aids and hearing assistive technologies will enable consumers to independently compare features and not rely solely on distributors and hearing health care professionals for that information.

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Personal Sound Amplification Products

The term "PSAPs" refers to a wide range of consumer products that increase the level of sound sensed by the user. FDA guidance documents specify that to avoid classification as a medical device, PSAPs cannot be marketed in the United States as products intended for individuals with hearing loss or to compensate for hearing loss (FDA, 2009a,b, 2013b). A 2009 FDA guidance document defines a PSAP as a "wearable electronic product that is not intended to compensate for impaired hearing, but rather is intended for non-hearing impaired consumers to amplify sounds in the environment for a number of reasons, such as for recreational activities" (FDA, 2009b). FDA's 2013 proposal for revised draft guidance offered some revisions and characterized PSAPs as products that

> are intended to amplify environmental sound for non-hearing impaired consumers. They are intended to accentuate sounds in specific listening environments, rather than for everyday use in multiple listening situations. They are not intended to compensate for hearing impairment or to address listening situations that are typically associated with and indicative of hearing loss. (FDA, 2013b, p. 5)

Some of these products have technical and performance characteristics quite similar to the hearing aids that FDA regulates. Determinations regarding whether a product is a "device" that FDA can regulate are based on the Federal Food, Drug, and Cosmetic Act (FDCA) definition of a device as "intended for use in the diagnosis of disease or other conditions, or in the cure, mitigation, treatment, or prevention of disease."[2] FDA does not regulate PSAPs as medical devices, although FDA can regulate them under the electronic product provisions of the FDCA. As with other consumer products, the Consumer Product Safety Commission has the authority to examine any safety concerns about PSAPs.

Few data are available on the extent and nature of PSAP use. Additionally, the term PSAP is often used to describe a wide variety of products, so it can be hard to understand or compare consumer surveys. An analysis of a MarkeTrak survey reported that approximately 5 percent of respondents who did not own a hearing aid indicated that they owned a PSAP (Kochkin, 2010b). Those who owned a PSAP reported lower levels of self-categorized hearing loss (mild) and had an annual income averaging approximately $10,000 less than those who owned a hearing aid. When asked what they would do if PSAPs were not available, almost half of the PSAP owners indicated that they would not purchase custom hearing aids (Kochkin, 2010b).

[2]Federal Food, Drug, and Cosmetic Act (FDCA), Public Law 75-717, 75th Cong. (1938) and amended. 21 U.S.C. § 321(h), 21 C.F.R. § 801.4.

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A 2014 online survey by the Consumer Electronics Association (now the Consumer Technology Association [CTA]) found that of 1,551 U.S. adults who had been diagnosed with hearing loss or self-reported that they had trouble with hearing, approximately 30 percent owned a hearing aid, 11 percent owned a television amplifier, 11 percent owned an amplified telephone, and 6 percent owned another sound amplification product (CEA, 2014). Of those individuals who owned a PSAP, 51 percent said they used it to help listen to television, and 10 percent reported using the product every day.

The population-based Blue Mountains Hearing Study in Australia surveyed the use of what it termed "assistive listening devices" and found that out of 2,956 respondents, 4.4 percent reported using such a device in the past year, with the primary uses being to enhance use of the television or telephone (Hartley et al., 2010). Of current hearing aid owners in the study, 25.6 percent reported that they had used an assistive device in the past year.

Studies of the effectiveness of PSAPs and hearing assistive technologies have primarily been conducted using small samples of older adults and have noted a general lack of knowledge about hearing assistive technologies, although some studies with users familiar with the technologies have indicated user satisfaction in improving sound quality and speech understanding (e.g., Aberdeen and Fereiro, 2014; Southall et al., 2006). More research is needed to develop the data necessary for improved capabilities and to provide the information needed for comparisons between products and product features by consumers and professionals.

Hearing Assistive Technologies

Individuals with hearing loss, particularly those with moderate to severe hearing loss, may use a variety of hearing assistive technologies in addition to hearing aids to connect to or receive information from other communication avenues (such as the phone or television) or from sound systems in classrooms, theaters, places of worship, or other public spaces or for emergency alerts (see Box 4-3). Driven by the needs of consumers and the requirements of antidiscrimination laws such as the Americans with Disabilities Act (ADA),[3] hearing assistive technologies span the range of products from those for personal and home use to systems available in public spaces and for larger audiences These services are often termed auxiliary aids and services in the ADA,[4] which requires that

[3] Americans with Disabilities Act of 1990, Public Law 101-336, 101st Cong. (July 26, 1990).

[4] Revisions to the ADA in 2010 included clarifying the scope of auxiliary aids and services to include providing a qualified note taker or interpreter, captioning (in multiple formats), assistive telecommunications products (e.g., telephone handset amplifiers, hearing aid–compatible telephones, text telephones, captioned telephones), videotext displays, and accessibility features in electronic documents (DOJ, 2014).

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Box 4-3 HEARING ASSISTIVE TECHNOLOGIES

- Face-to-face communication
  - Hardwired and wireless auditory technologies
  - Visual technologies (e.g., captioning)
- Reception of media (e.g., television, music)
  - Hardwired and wireless auditory technologies
  - Visual technologies (e.g., captioning)
- Telecommunications
  - Auditory
    - Amplified phones
    - Hardwired and wireless interfaces
  - Visual
    - Video conferencing (personal or group)
    - Captioning for teleconferences
- Alerts
  - Auditory
  - Visual (flashing lights, text)
  - Vibrotactile

> A public accommodation shall take those steps that may be necessary to ensure that no individual with a disability is excluded, denied services, segregated or otherwise treated differently than other individuals because of the absence of auxiliary aids and services, unless the public accommodation can demonstrate that taking those steps would fundamentally alter the nature of the goods, services, facilities, privileges, advantages, or accommodations being offered or would result in an undue burden, i.e., significant difficulty or expense.[5]

These types of products have also been termed "hearing assistance technologies."

Improving the availability and effectiveness of hearing assistive technologies is a priority for achieving better hearing and communication for individuals with hearing loss. Improvements in these technologies and connections need to be accompanied by efforts to raise public awareness on the range of options available and to provide user-friendly instructions for connectivity and use. These efforts could be undertaken by hearing health care professional associations, hearing device manufacturers, and government entities such as the Federal Communications Commission (FCC) and the National Institutes of Health. Additionally, training for hearing

[5] 28 C.F.R. § 36.303.

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health care professionals and for primary care providers and other health care professionals working with adults needs to emphasize the capabilities of hearing assistive technologies and best practices for instructing patients regarding their use and connectivity.

Hearing Induction Loop and Telecoil Technologies

Hearing induction loop technology allows the sound system in a room to connect wirelessly with an individual's hearing aid via the telecoil in the hearing aid or via a neck loop receiver and ear phones, thereby eliminating the background noise and improving clarity of sound. These systems work through the installation of hearing loop wiring around the perimeter of the room that connects to the room's sound system. The electromagnetic signals from the sound system are picked up by the telecoil in the hearing aid or cochlear implant or by the receiver.

Telecoils are available on most but not all types and models of hearing aids, but consumers do not always know that their hearing aid has this feature or that it can be added as an option[6] (HLAA, 2016). Only 34 percent of 1,995 respondents to a 2008 MarkeTrak survey indicated that they were aware that their hearing aid had a telecoil (Kochkin, 2010a). Telecoils also enhance the performance of wired and wireless telephones.

In a survey of audio loop users, approximately 70 percent indicated that the loop significantly improved sound quality and speech intelligibility (Kochkin, 2014). Respondents also noted that hearing induction looping empowers consumers because they can walk into a venue with an induction loop and turn on the telecoil sensor without the need to ask for assistance or ask for another piece of equipment (receiver); by being unobtrusive to use, the technology maintains a user's privacy. Furthermore, performance standards for induction loop technology provide the consumer with a technology that can be used across venues and manufacturers, whereas many other hearing technologies are proprietary. Some states have recognized the value of the telecoil to couple with an induction loop by mandating that consumers be informed about the telecoil when they purchase their hearing aids. Hearing induction loops have been installed in some public spaces, such as movie theaters, places of worship, and other large venues, but they can also be installed in private homes (Shaw, 2012) and vehicles (HearingLoop.org, 2015). Efforts are under way in some communities to expand the use of this technology (see Chapter 6).

[6]The Consumer's Guide to Hearing Aids notes that the majority of hearing aids have telecoils as a standard feature or as a feature that is available to be added (HLAA, 2016).

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FM and Infrared Technologies

FM (frequency-modulated) systems use radio signals to transmit sound directly from the speaker's microphone or other sound system. Some types of hearing aids can process the wireless FM transmissions. In other cases, a body-worn receiver is used that is connected to earphones or a neckloop is used that converts the transmission to an electromagnetic signal that can be picked up by the telecoil in the hearing aid (ASHA, 2016; Chisolm et al., 2007b; Kim and Kim, 2014). These systems are often used in classrooms and places of worship and can be used to transmit sound from radio, television, and other sources. Radio signals are able to penetrate walls, and mixed signals can result unless different frequencies are used. Studies on the effectiveness of FM systems in improving speech perception have primarily examined the use of this technology by children in classroom settings (e.g., Bertachini et al., 2015; Hawkins, 1984; Hawkins and Schum, 1985).

Infrared systems use infrared light waves to transmit to a personal receiver. As with the FM systems, the infrared system uses a receiver and headphones or a neckloop and hearing aid telecoil. The infrared systems have the advantage of containing the signal in the room (and thereby having less interference from other competing signals), but they have the disadvantage of potentially competing with natural light (Holmes et al., 2000; Kim and Kim, 2014).

Captioning

Captioning involves the transcription of discussions or programming into text on a screen and can be done on-site or remotely. Captioning is often done in real time for live events such as sports events or conferences, and it can be projected through television and other media, through a website, or directly onto a screen visible in the location of the event. Beginning in 1993, the ADA required all televisions 13 inches or larger to have closed captioning capabilities with text for the auditory portion of programs (Holmes et al., 2000). Captioned telephones are also available and can be used in conjunction with the Telecommunications Relay Service (see next section).

Interconnectivity—Wireless and Other Information and Communication Technologies

Individuals with hearing loss often face challenges involving the interoperability and compatibility of information and communications technologies (e.g., phones, television, or wireless networks) with hearing aids and other products. Beginning in the 1980s and 1990s a number of laws

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were passed in the United States that focused on ensuring that telephone and television and other electronic communications would be accessible to individuals with hearing loss and other Americans with disabilities (see Box 4-4).

Efforts by the U.S. Access Board (responsible for issuing standards and guidance relevant to the ADA) and other organizations and agencies include a focus on the issues of compatibility and interoperability between and among wireless communications products and systems and hearing technologies, including revised and common wireless standards (Access Board, 2015).

Mobile apps and smartphones have the potential to offer a variety of options for individuals with hearing loss (Mamo et al., 2016; Paglialonga et al., 2015). Smartphones can be used via Bluetooth to initially set up a

Box 4-4 EXAMPLES OF LEGISLATION TO MAKE COMMUNICATION ACCESSIBLE TO INDIVIDUALS WITH HEARING LOSS

Rehabilitation Act of 1973[a] extends vocational rehabilitation programs in the states, and the Section 508 amendment in 1998 requires federal agencies to ensure that their electronic and information technology is accessible to people with disabilities.

Hearing Aid Compatibility Act of 1988[b] requires that the Federal Communications Commission ensure that new telephones be compatible with hearing aids. Wireless phones were exempt from the requirements, but subsequent changes to the law have extended its provisions to cellular phones.

Technology-Related Assistance for Individuals with Disabilities Act of 1988[c] provides funding to states to develop statewide assistive technology solutions for individuals of all ages with disabilities.

Americans with Disabilities Act of 1990 (ADA)[d] requires that under certain conditions, businesses and public accommodations need to ensure that individuals with disabilities are not excluded from or denied services because of the absence of auxiliary aids. Captions are considered one type of auxiliary aid. Modifications to the ADA were made in 2008 (Public Law 110-325) and subsequently in ADA regulations.

Television Decoder Circuitry Act of 1990[e] requires that all televisions larger than 13 inches sold in the United States after July 1993 have a built-in decoder that enables viewers to watch closed-captioned programming.

Individuals with Disabilities Education Act of 1990[f] (Public Law 105-17) and the **Individuals with Disabilities Education Improvement Act of 2004**[g] (Public Law 108-446) ensure the availability of education services for children and youth with disabilities (ages birth through 21 years of age) and the incorporation of assistive technologies into these services.

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hearing aid or to personalize and program the device (Mamo et al., 2016). One analysis of mobile health applications for eight health conditions noted the paucity of mobile applications for hearing loss (Martinez-Perez et al., 2013). The apps related to hearing were primarily for the purpose of hearing checks or providing educational tools. Screening for hearing loss is also a potential use (Peer and Fagan, 2015) (see below for information on FDA guidance documents regarding mobile apps; see also Chapter 3).

Phones are required to meet American National Standards Institute (ANSI) standards specifying the level of volume and other sound parameters that must be attainable. The FCC requires that wireless phones meet the ANSI C63.19 standard regarding compatibility with hearing aids. Additionally, telephones are available that provide greater amplification, and other assistive technologies can also be used in conjunction with phone

Telecommunications Act of 1996[h] added Section 713 to the Communications Act, which requires the Federal Communications Commission to develop rules and implementation schedules for the closed captioning of television video programs, and Section 255, which requires telecommunications equipment manufacturers to strengthen efforts to improve accessibility.

Twenty-First Century Communications and Video Accessibility Act of 2010[i] provides protections to enable people with hearing loss and others with disabilities to access broadband, digital, and mobile innovations and includes a focus on emergency information technologies.

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[a]Rehabilitation Act of 1973, Public Law 93-112, 93rd Cong. (September 26, 1973) and amendments 29 U.S.C. § 794d.

[b]Hearing Aid Compatibility Act of 1988, Public Law 100-394, 100th Cong. (August 16, 1988). 47 U.S.C. § 610.

[c]Technology-Related Assistance for Individuals with Disabilities Act of 1988, Public Law 100-407, 100th Cong. (August 19, 1988).

[d]Americans with Disabilities Act of 1990, Public Law 101-336, 101st Cong. (July 26, 1990).

[e]Television Decoder Circuitry Act of 1990, Public Law 101-431, 101st Cong. (October 15, 1990).

[f]Individuals with Disabilities Education Act of 1997, Public Law 105-17, 105th Cong. (June 4, 1997).

[g]Individuals with Disabilities Education Improvement Act of 2004, Public Law 108-446, 108th Cong. (December 3, 2004).

[h]Telecommunications Act of 1996, Public Law 104-104, 104th Cong. (February 8, 1996).

[i]Twenty-First Century Communications and Video Accessibility Act of 2010, Public Law 111-260, 111th Cong., 2d sess. (October 8, 2010) and amendments, 124 Stat. 2795 (2010).

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calls. The FCC's Telecommunications Relay Service offers a variety of options to assist individuals who have hearing loss with placing and receiving phone calls (see Box 4-5). A recent FCC report to Congress highlighted several consumer-related issues including ensuring seamless connections between smartphones and hearing aids and providing more extensive consumer information online and in retail settings to help customers compare features of phones and other technologies (FCC, 2014). Recent FCC proposed rule making focuses on compatibility issues (FCC, 2015b).

Among the other technologies that offer potential for helping individuals with hearing loss is the expanded use of high-definition voice (also referred to as wide-band audio), which broadens the range of frequencies transmitted and the number of audio samples per call to allow less background noise and provide more easily distinguishable sounds (Chang, 2013).

A 2015 survey by the Rehabilitation Engineering Research Center on Telecommunications Access at Gallaudet University found that among 420 respondents with hearing loss (the majority self-reporting that they had severe or profound hearing loss) who regularly used telephones, the major needs reported for improved phone use were

Box 4-5 TELECOMMUNICATIONS RELAY SERVICE

The Telecommunications Relay Service is a public–private-sector collaboration that provides individuals with hearing or speech disabilities the capabilities to place and receive telephone calls with no additional cost to the user beyond standard telephone service charges. The Federal Communications Commission manages the program, which is run in collaboration with telecommunications companies and state-based programs.

The relay service works primarily through communications assistants who facilitate calls through several mechanisms. A person using a teletypewriter or other text input device can call the relay center (usually by dialing 711), provide the number he or she wants to call, and then the communications assistant provides the link converting text to voice and voice to text. An individual with hearing loss can also dial and speak directly to the called party and hear his or her voice. At the same time the individual can read text of the called party's voice to facilitate the caller's understanding. Captioned telephones are often preferred by people with residual hearing who use their own voices. Video relay that uses sign language interpreters is often preferred by people who communicate using sign language.

Title IV of the Americans with Disabilities Act required the telecommunications relay service to be available nationwide and to be as equivalent as possible to standard telephone services.

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- Better telephone sound quality;
- Improved telephone captions, which are more accurate, have shorter delays, or both;
- Better ways to test telephone products to find which work for a given individual;
- More affordable prices for accessories and other special telephone equipment;
- More or better information about telephone communication options for people with hearing loss;
- Better options for listening to voice mail;
- More or better information about hearing aid compatibility for cell phones;
- The ability to hear over the telephone using both of an individual's hearing devices at the same time;
- More training on strategies an individual can use to improve his or her telephone communication with people who are difficult to understand; and
- More attention to assessing an individual's telephone communication needs by the individual's audiologist or hearing instrument specialist.[7]

Emergency Communications

Ensuring accessibility of the nation's emergency communications systems requires that the systems have specific features for those with hearing loss. These systems have three key components: (1) 911 call processing and delivery through public safety answering points and call dispatch; (2) the Emergency Alert System (national and regional); and (3) radio and television station transmission of news and updates regarding emergency information, which are mandated to be provided both aurally and in a visual format (such as closed captioning or other methods) (FCC, 2015a). The FCC requires that 911 landline and wireless services be compatible with text telephone devices. Additionally, efforts are ongoing to update and expand the methods of emergency communications to include text-to-911 capabilities for individuals with hearing loss or other disabilities (FCC, 2015c). An increasing number of public safety answering points (local centers where 911 calls are processed) have the capability to receive text-

[7]Personal communication, *Voice Telecommunications Access Survey*, from Linda Kozma-Spytek, Senior Research Audiologist, Technology Access Program, Gallaudet University. Received February 19, 2016. Available by request from the National Academies of Sciences, Engineering, and Medicine Public Access Records Office. For more information, email PARO@nas.edu.

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to-911 (FCC, 2016). Weather emergency information can be provided to those who have hearing loss through connections to the National Oceanic and Atmospheric Administration Weather Radio system which can include providing text displays, alerting lights, or other mechanisms (NOAA, 2015). Smoke and carbon monoxide detectors are available with strobe lights, as are emergency devices that use vibrations to alert the user to emergency situations.

EFFECTIVENESS OF HEARING AIDS AND OTHER ASSISTIVE PRODUCTS

Recent research on the effectiveness of hearing aid use (and the use of other technologies, such as cochlear implants) has largely focused on the impact of that use on speech development and learning in children with hearing loss. Fewer peer-reviewed studies have examined the efficacy (performance under controlled conditions, usually in a clinical trial) and effectiveness (performance in real-world settings) of hearing aid use by adults, particularly comparing various types of hearing aids or comparing hearing aids with PSAPs or hearing assistive technologies. As noted in a 2001 review by Maki-Torkko and colleagues, "only a few studies on HA [hearing aid] outcomes meet strict scientific criteria and even fewer studies correlate rehabilitation outcome with the degree of HI [hearing impairment], disability or handicap" (Maki-Torkko et al., 2001, p. 8). As discussed above, studies have looked at the usage of hearing aids and owner's satisfaction and barriers to use. However, the outcome measures used to assess the efficacy and effectiveness of hearing aids (e.g., measures of speech recognition) vary widely, and a consensus is needed on standard outcome measures.

Studies of Efficacy and Effectiveness of Hearing Aids

Studies of the effectiveness of hearing aids have been primarily experimental studies that have examined the impact of specific technical aspects or components of the hearing aid device using small numbers of study participants, and many of these studies have been focused on technical rather than clinical or functional outcomes (Humes and Krull, 2012). These studies, which often compare different versions of a technology, have investigated such features as directional and omnidirectional microphones (e.g., Gnewikow et al., 2009; Hawkins and Yacullo, 1984; Keidser et al., 2013; Wu et al., 2013), multimemory and volume controls (e.g., Banerjee, 2011), noise reduction technologies (e.g., Oeding and Valente, 2013), and various types of circuits and compression options (e.g., Hawkins and Naidoo, 1993; Kokx-Ryan et al., 2015; Moore et al., 2001; Shanks et al., 2002). During the transition from analog to digital hearing aids over the past

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20 years, studies examining the technologies had varying results, due in part to variation in the outcomes assessed. Johnson and colleagues (2016) reviewed 10 studies of hearing aid use by adults with mild hearing loss and found positive benefits of amplification using a variety of measures. Taylor and colleagues (2001) reviewed one randomized controlled trial and seven randomized crossover trials and found no significant differences in user function and quality of life assessments between analog and digital devices when pooling the data.

Assessing the impact of hearing aids on quality of life is a challenge because of the multiple comorbidities in many participants and the gradual onset of hearing loss in many adults. A meta-analysis of studies examining the impact of hearing aids on quality of life found no effect when using general health-related quality of life measures but a medium to large effect when using hearing-specific questionnaires; however, the meta-analysis included only one randomized controlled trial (Chisolm et al., 2007a).

Only a few studies have used control groups or randomized methodologies. As noted by Van Vliet, "Peer-reviewed publications describing performance of various techniques and hearing aid circuits are available, but high-quality evidence about what works for patients in the form of randomized, blinded studies designed to answer critical questions about candidacy for hearing aids, hearing aid selection, fitting, and rehabilitation are very rare" (Van Vliet, 2005, p. 416). A clinical trial conducted by the Department of Veterans Affairs (VA) and the National Institute on Deafness and Other Communication Disorders (NIDCD) examined hearing aid benefits among 360 participants with sensorineural hearing loss (Larson et al., 2000; Noffsinger et al., 2002; Shanks et al., 2002). The participants were randomized in order to examine the results of using three different hearing aid circuits. At the time the study was conducted, these three circuits made up 70 percent of the U.S. hearing aid market. Each circuit was used for 3 months, six sequences of circuits were used, and the study was double blinded. The major outcomes examined were loudness, noise interference, and overall quality, and the outcome measures involved speech recognition tests, ratings of perceived sound quality, and self-assessed subjective assessments of benefit. When compared with unaided listening, the participants reported substantial benefit with hearing aids using all three circuits. Small differences were noted between the circuits on ratings of loudness and on the distortion of sounds.

A study by Yueh and colleagues (2001) randomly assigned 30 veterans with service-connected hearing loss (and eligible to receive a hearing aid through their veteran benefits) to receive either a programmable hearing aid with a directional microphone or a nonprogrammable aid. Hearing-related quality-of-life measures were compared among those two groups and also with 30 veterans with non-service-connected hearing loss who

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either did not have a hearing aid or who received a hearing assistive technology product. The greatest improvements in hearing-related quality of life were noted by those using the programmable hearing aids, followed by those who received the nonprogrammable aid and then the hearing assistive product, and the lowest scores were for those with no hearing technologies. Similarly, Humes and colleagues (2009) randomly assigned groups of older adults with hearing loss to four types of hearing aids (varying by single- versus multichannel technology and omnidirectional versus bidirectional microphones) and found improvements in speech recognition in all groups with little difference seen between the technologies.

A more recent study conducted by Cox and colleagues (2014) examined the results of laboratory tests and journal entries of speech understanding for 25 participants with bilateral mild to moderate sensorineural hearing loss who used four types of hearing aids (two basic and two premium level) in a randomized crossover trial. The hearing aid fittings were conducted following a best-practice five-step approach that included programming of the hearing aids using the manufacturer's proprietary algorithm and matching real-ear performance to national prescription goals. Participants ranged from new to experienced hearing aid users (mean age of 70.4 years). Each type of hearing aid was used for 1 month, with participants engaged at the end of each month in laboratory speech understanding tests and responding to a set of standardized questionnaires; the participants also recorded journal entries of their experiences with the hearing aids throughout the month. The study found benefits associated with all four types of hearing aids, with experienced users noting greater benefits than new users. No statistically significant differences were found in speech understanding between those using the premium and the basic hearing aids. The researchers also conducted a single-blinded, repeated, crossover trial in which 45 participants used hearing aids with premium and basic features (participants were blinded to the features) and responded to a variety of quality-of-life and hearing assessments and interviews (Cox et al., 2016). On average, the participants did not note any significant differences between the hearing aids with premium features and those with basic features when assessing their use in daily life. These studies are at the forefront of efforts to provide independent comparative data on the effectiveness of hearing technologies. Additional studies are needed that use larger sample sizes across age ranges and control for prior experience with hearing aids to examine hearing characteristics and use of the broad range of products and devices in laboratory and real-world hearing environments.

Studies of the use of hearing aids have found no clear evidence that hearing aid users become acclimatized to hearing aids or have positive changes in hearing performance over time (Humes and Wilson, 2003; Humes et al., 2002; Turner et al., 1996). While it might be expected that

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hearing aid users would become more familiar with amplification and would note improvements in understanding amplified speech, the results of studies examining this expectation have not been consistent; however, the numbers of individuals studied has been limited. Further efforts and innovative approaches to understanding and optimizing the benefit of sustained use of hearing aids are needed.

Comparisons of Hearing Aids and Other Products

The evidence base of comparative studies among various types of devices and products is also scant. Studies that have included "non-hearing aid products" have described them in varying ways, making it difficult to distinguish a study examining what in the United States would be considered a PSAP from hearing assistive technologies or from low-cost hearing aids (which in some countries are sold as OTC).

Callaway and Punch (2008) examined the electroacoustic characteristics of 11 types of "OTC hearing aids," although it was not clear which were marketed as hearing aids and sold through mail order or the Internet and which were PSAPs. Eight of the products (termed "low-range" by the authors) were sold for less than $100 and three were in the mid-range group ($100 to $500). The study conducted analyses of gain and output for three hearing loss patterns and found that the low-range products primarily worked for hearing loss at low frequencies and were "electroacoustically inadequate to meet the needs of the hearing impaired" (p. 14), while the mid-range products could meet most or all of the National Acoustic Laboratories parameters. In 2000, Cheng and McPherson reported on a comparison conducted in Hong Kong of 10 OTC hearing aids costing less than $250 each (U.S.). Hearing aids can be purchased OTC in Hong Kong, and some of the products sold there may be more similar to PSAPs or to basic hearing aids. The study found that most of these products performed within the ANSI standards for hearing aids, with several being outside of the equivalent input noise and total harmonic distortion levels, and that most were more appropriate for helping people with low-frequency hearing loss than the high-frequency loss often experienced by older adults (Cheng and McPherson, 2000). An update of this study examined 10 OTC products and found similar results, with little change in electroacoustic characteristics or performance in the intervening decade (Chan and McPherson, 2015).

A study examining the acoustic performance of several more recent direct-to-consumer amplifying products (the authors describe these products as a "newer generation of hearing devices that comprise a higher price point [i.e., cost $200–$400]" found variations in parameters including frequency-specific gain, signal-to-noise ratio, and listening comfort

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and found that a number met the targeted performance levels (Mamo et al., 2016).

Research Needs

Research on hearing technologies is funded and conducted largely by the private-sector companies that produce hearing aids and hearing assistive technologies. It is estimated that the private sector annually invests $600 million in research and development aimed at improving hearing aids and developing new features, products, and systems (HIA, 2015).

Federal agencies with a focus on research on adult hearing loss include NIDCD, the National Institute on Aging, the VA, and the Department of Defense (e.g., DoD Hearing Center of Excellence, 2016; NIDCD, 2015; VA, 2015). Another avenue for funding university-based research on devices and technologies relevant to hearing loss is through the Rehabilitation Engineering Research Centers (RERCs) (ACL, 2015). These centers are charged with conducting studies of technology, systems, and devices across the range of disabilities. Relevant centers working on hearing include the RERCs on hearing enhancement, on universal telecommunications access, and on wireless technologies (Galludet University, 2013; University of Wisconsin–Madison and Galludet University, 2016; Wireless RERC, 2016). RERCs are supported by the National Institute on Disability, Independent Living, and Rehabilitation Research (formerly the National Institute on Disability and Rehabilitation Research) now located in the Department of Health and Human Services.

Efforts are needed across the academic, private, government, and nonprofit sectors to provide the research, outcome measures, and standards needed to improve hearing health care. Research and standards needs identified by the committee relevant to this chapter include

- Effectiveness and comparative-effectiveness studies of hearing technologies using consumer-relevant parameters across the varying levels of severity of hearing loss;
- Continued innovative research and design of hearing aids and hearing assistive technologies with a focus on improving hearing clarity, facilitating ease of use (particularly for older adults), and compatibility with the other assistive and communications technologies;
- The development of minimum performance standards for examining the effectiveness of hearing devices in real-world situations;
- Consensus criteria for defining an individual with hearing loss as a candidate for a hearing aid or other hearing device; and
- Product labeling comprehension studies.

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REGULATORY STRUCTURE AND STANDARDS

Hearing aids, hearing aid compatibility, and to some extent PSAPs are subject to federal regulation in the United States by FDA, the FCC, and Federal Trade Commission (FTC). Hearing aids are also subject to regulation under state regulatory laws, including licensing laws. This section provides an overview of these regulatory laws and describes their impacts on accessibility to hearing health care for adults.

Food and Drug Administration

FDA regulates hearing aids as medical devices under the FDCA. A "device" is defined in the statute as an article or instrument intended for use in the diagnosis of disease or other conditions; intended for use in the cure, mitigation, treatment, or prevention of disease; or intended to affect a structure or any function of the body.[8]

Overview of FDA Regulation of Medical Devices

Under the FDCA, medical devices are regulated under a risk-based framework with three classes of devices:

- Class I devices are considered the lowest risk and are subject to general controls, but they are not required to undergo premarket review by FDA (with some limited exceptions). Although usually exempt from 510(k) requirements, a new device in Class I can lose that 510(k) exemption if it has a different intended use or a "different fundamental technology" than the other devices in that product classification.[9] Examples of Class I medical devices include dental floss, medical gloves, and tongue depressors.
- Class II devices are moderate risk and are subject to general controls, special controls, and premarket review by FDA (with some exceptions where the device is exempted from premarket review). Examples of Class II medical devices include powered wheelchairs and some pregnancy test kits.
- Class III devices are the highest risk, such as implantable devices or life-supporting or life-sustaining devices. Class III devices are subject to general controls and also require premarket approval by FDA prior to marketing. Examples of Class III medical devices

[8] FDCA § 201(h), 21 U.S.C. § 321(h).
[9] See, e.g., 21 C.F.R. § 874.9 (limitations on exemption).

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include replacement heart valves, cochlear implants, and implantable defibrillators.

"General controls" include the registration of the manufacturer's device establishment, listing of the devices in commerce, quality system regulations including design controls and specific requirements for good manufacturing practices (unless exempted), adverse event reporting, labeling, and other requirements.[10] Design controls apply to Class II and Class III devices but not to Class I devices unless the devices are automated with computer software (or otherwise specified in the regulation).[11] "Special controls" include guidance documents, guidelines, performance standards, post-market surveillance, and other controls to provide reasonable assurance of the safety and effectiveness of the Class II device.[12] FDA has three premarket pathways (see Box 4-6).

FDA regulates the labels and labeling of all devices under its jurisdiction. Labeling is information that "accompanies" the device, which can be more than just physical accompaniment. The statute requires that labels and labeling be truthful, accurate, and not misleading. The labeling of a medical device must include adequate directions for use and adequate warnings to protect users.

When FDA authorizes a device for marketing, the device can be limited to use by or on the order of a physician or other health professional (prescription use) or authorized for OTC purchase and use by consumers (OTC use).

FDA also has the authority to impose restrictions on the sale, distribution, or use of a device—making it a "restricted device." Such restrictions can be imposed as a condition of approval in a premarket approval (PMA) order[13] or by promulgating a regulation for devices that undergo 510(k) review or that are exempt from 510(k) review.[14] FDA is authorized to regulate the advertising of restricted medical devices.[15]

Current FDA Regulation of Hearing Aids as Medical Devices

FDA has classified hearing aids under several different classification regulations, based on the intended use and risk of the different technologies. As defined in FDA regulations, a hearing aid is a "wearable sound-

[10]FDCA § 513(a)(1)(A), 21 U.S.C. § 360c(a)(1)(A).
[11]21 C.F.R. § 820.30(a).
[12]FDCA § 513(a)(1)(B), 21 U.S.C. § 360c(a)(1)(B).
[13]FDCA § 515(d)(1)(B)(ii), 21 U.S.C. § 360e(d)(1)(B)(ii).
[14]FDCA § 520(e), 21 U.S.C. § 360j(e) and FDCA § 502(q)&(r), 21 U.S.C. § 352(q)&(r).
[15]FDCA § 502(q)&(r), 21 U.S.C. § 352(q)&(r). The Federal Trade Commission otherwise regulates the advertising of medical devices.

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Box 4-6 FOOD AND DRUG ADMINISTRATION (FDA) PREMARKET PATHWAYS

510(k) pathway: The 510(k) notification pathway[a] can be used for devices that demonstrate "substantial equivalence" to a predicate device.[b] The new device must have the same "intended use" as the predicate device and either the same technological characteristics as the predicate device or different technological characteristics but information submitted in the 510(k) demonstrates that the new device does not raise different questions of safety and effectiveness than the predicate device. The statute indicates a 90-day review for 510(k) notifications, but in practice the FDA review typically takes 6 months to 1 year or more. If FDA finds that a device is "not substantially equivalent" to a predicate device, the new device is automatically classified as Class III.

De novo pathway: If FDA determines that a new device does not have a predicate device—for example, there is no prior device with the same intended use—and that the new device presents low or moderate risk, FDA can use the "de novo" pathway to reclassify the device from the automatic Class III classification to either Class II or Class I.[c] The petitioner must provide information describing the device and supporting the proposed classification, including proposed special controls that would provide reasonable assurance of the safety and effectiveness of the device.

Premarket approval pathway: This pathway is used for Class III devices, including devices found "not substantially equivalent," implantable devices, and other high-risk devices.[d] A premarket approval application must include labeling, manufacturing information, information to show the device meets any applicable performance standards, preclinical information (bench testing and animal studies, as appropriate), and clinical data that demonstrate the device is safe and effective for the intended use and patient population specified in the labeling.[e]

[a]FDCA § 510(k), 21 U.S.C. § 360(k).
[b]FDCA § 513(i), 21 U.S.C. § 360c(i).
[c]FDCA § 513(f)(2), 21 U.S.C. § 360c(f)(2).
[d]FDCA § 513(a)(1)(C), 21 U.S.C. § 360c(a)(1)(C).
[e]FDCA § 515(c), 21 U.S.C. § 360e(c).

amplifying device that is intended to compensate for impaired hearing."[16] Air conduction hearing aids amplify and deliver sounds to the external ear canal via air conduction. Bone conduction hearing aids involve an implant that is placed behind the ear, and amplified and processed sound is conducted via the skull bone to the cochlea. An air-conduction hearing aid is a Class I device that is exempt from premarket review but which remains subject to quality system regulation (including good manufacturing practices) and other FDA requirements. As with other Class I devices, a specific

[16]21 C.F.R. § 874.3300.

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air-conduction hearing aid can lose its 510(k) exemption if it has a different "intended use" or a "different fundamental technology" than other devices in that product classification.[17] A bone-conduction hearing aid is a Class II device, subject to 510(k) notification requirements. FDA has recognized consensus standards that are applicable to both of these classes of hearing aids, including ANSI/Acoustical Society of America (ASA) standards (FDA, 2013a).

FDA has classified wireless air-conduction hearing aids as Class II with special controls.[18] The applicable special controls are testing to validate electromagnetic compatibility; design and performance data to validate wireless technology functions; and labeling that specifies "appropriate instructions, warnings, and information relating to [electromagnetic compatibility] and wireless technology and human exposure to non-ionizing radiation." Wireless air-conduction hearing aids are exempt from 510(k) notification requirements.

A transcutaneous air conduction hearing aid system is a "wearable sound-amplifying device intended to compensate for hearing loss without occluding the ear canal."[19] The system involves of an air-conduction hearing aid attached to tube system that is surgically fitted between the back of the outer ear and outer ear canal. It is Class II, requires a 510(k) notification, and is subject to the special controls specified in an FDA guidance document for this device type (FDA, 2002).

FDA also regulates as devices various testing equipment and accessories. For example, a "hearing aid calibrator and analysis system" is a Class II device, defined as an "electronic reference device intended to calibrate and assess the electroacoustic frequency and sound intensity characteristics emanating from a hearing aid."[20]

Cochlear implants and other implantable hearing devices are in Class III and require FDA granting of a PMA prior to marketing. These devices require surgery for implantation and are therefore not part of the charge to the committee and the discussion in this report.

In 1977, FDA issued regulations that made hearing aids "restricted devices" subject to various restrictions on sale, distribution, and use specified in the regulations.[21] These regulations define "hearing aid" as "any wearable instrument or device designed for, offered for the purpose of, or represented as aiding persons with or compensating for, impaired hearing."[22] These regulations also set forth labeling requirements for hearing aids,

[17] 21 C.F.R. § 874.9.
[18] 21 C.F.R. § 874.3305.
[19] 21 C.F.R. § 874.3950.
[20] 21 C.F.R. § 874.3310.
[21] 21 C.F.R. §§ 801.420 & 801.421.
[22] 21 C.F.R. § 801.420(a).

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including the requirement for a user instructional brochure, which must be provided to the prospective user by the dispenser of the hearing aid. The brochure must include a "Warning to Hearing Aid Dispensers" that informs dispensers that they should advise prospective users to consult a physician whenever they find the prospective user to have certain medical conditions. The user instructional brochure must also include an "Important Notice for Prospective Hearing Aid Users" that users should have a medical evaluation by a licensed physician before purchasing a hearing aid (see discussion in Chapter 3). That notice also includes the following statement:

> Federal law restricts the sale of hearing aids to those individuals who have obtained a medical evaluation from a licensed physician. Federal law permits a fully informed adult to sign a waiver statement declining the medical evaluation for religious or personal beliefs that preclude consultation with a physician. The exercise of such a waiver is not in your best health interest and its use is strongly discouraged.

A hearing aid dispenser cannot sell a hearing aid unless the prospective user provides a written statement signed by a licensed physician stating that the hearing loss has been evaluated and the person is a candidate for a hearing aid or, alternatively, the prospective user signs and presents a waiver of the medical evaluation. The prospective user must be given the opportunity to review the user instructional brochure for the hearing aid prior to signing the waiver of medical examination (see Chapter 3).

FDA has permitted the marketing of disposable hearing aids.[23] In addition, FDA has not objected to Internet sales of Class I hearing aids where a mechanism is provided to ensure compliance with the regulations (e.g., FDA, 2005). Often the purchaser is asked to electronically read the waiver form and is given the option to accept the terms of the waiver online.

Over the years, hearing technology companies have petitioned FDA to amend its regulations to eliminate the medical evaluation requirement and to allow the OTC sale of hearing aids (e.g., Etymotic Research, 2003; GudHear, 2003). FDA has denied those petitions. One petitioner argued that OTC hearing aid safety could be ensured by restricting peak OSPL-90 (output sound pressure level with 90 dB SPL input) to 115 dB SPL (sound pressure level) or less in order to prevent hearing damage or tinnitus and by requiring that eartips pass standard tests for allergic reactions and real-world testing for ear canal safety (Etymotic Research, 2003, p. 3). Another petitioner stated that labeling could provide adequate information to educate potential users about hearing loss and when to consult a hearing health care professional. As an example, the petitioner recommended providing

[23] E.g., FDA-cleared 510(k) notifications K081136 and K021867.

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the following information to a prospective hearing aid purchaser in person, by website, or otherwise (GudHear, 2003, p. 4):

- A hearing aid will not restore normal hearing and will not prevent progressive hearing loss, and will not improve the underlying causes of organic hearing loss.
- Some hearing loss is caused by conditions that can be medically corrected. The following signs indicate the need for a medical evaluation by a licensed physician, preferably a physician who specializes in diseases of the ear:

1. Congenital or traumatic deformity of the ear
2. Pain or discomfort in the ear
3. History of active drainage from the ear within the past 90 days
4. History of sudden or rapidly progressing hearing loss
5. Unilateral hearing loss or a difference in hearing between ears in the past 90 days
6. Excessive earwax
7. Foreign body in the ear canal
8. Acute or chronic dizziness

The medical conditions identified above correspond to the "red flag" medical conditions that must be identified in the warning statement to hearing aid dispensers in the user instructional brochure required by 21 C.F.R. § 801.420(c)(2) (for more discussion of the "red flag" medical conditions, see Chapter 3).

FDA denied the petitions requesting an OTC hearing aid classification, citing concerns that a medical evaluation is necessary to ensure that the "red flag" ear conditions would not be "undiagnosed and unevaluated" and to avoid delays in diagnosis and management of medically treatable conditions that cause hearing loss (FDA, 2004a,b).

Current FDA Regulation of PSAPs as Nondevice Articles or Instruments

As noted above, FDA's regulations define a "hearing aid" as any wearable instrument that is designed, offered, or represented "as aiding persons with or compensating for impaired hearing." This definition flows from the statutory definition of a medical "device" as intended for use in the cure, mitigation, or treatment of a disease, or intended to affect a structure or function of the body.

Given the technological advances since FDA promulgated the hearing aid regulations in 1977, the interest of consumers in taking more control over their own health and wellness, and FDA's refusal to create an OTC

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hearing aid category, some manufacturers have been interested in selling products that enhance hearing without complying with the restrictions on sale, distribution, and use imposed under FDA's hearing aid regulations. As a result, some manufacturers began to market hearing aid devices directly to consumers, sometimes by seeking to comply with the federal restrictions in 21 C.F.R. §§ 801.420 and 801.421 and sometimes not. Some manufacturers sought to market technologies with labeling and advertising claims that the products could help people to hear better, but without calling the products "hearing aids" (FDA, 2009a).

FDA eventually issued a guidance document to address this new category of products that FDA called personal sound amplification products, or PSAPs. As one manufacturer explained, "It is important to realize that the only reason most PSAP manufacturers—including the Petitioner's company—developed PSAPs was to provide a low-cost alternative to hearing aids for those who could not afford hearing aids or did not want to be burdened by FDA regulatory requirements" (Etymotic Research, 2014, p. 15).

FDA issued a guidance document in 2009 to recognize the category of nondevice products called PSAPs that would be distinguished from the medical device "hearing aid" (FDA, 2009b). As defined in that guidance document, a PSAP would be "intended to amplify environmental sound for non-hearing impaired consumers. They are not intended to compensate for hearing impairment." PSAPs would be permitted for uses including "listening to lectures with a distant speaker, and listening to soft sounds that would be difficult for normal hearing individuals to hear (e.g., distant conversations, performances)." That guidance document stated that PSAPs would not be medical "devices" because they were not intended to cure, mitigate, or treat a disease and did not alter the structure or function of the body and thus were not within the statutory definition of "device" in the FDCA.

In 2013, FDA issued a draft guidance document for comment that was intended to supersede the 2009 PSAP guidance document (FDA, 2013b). This draft guidance document retains the same description of uses that would be considered appropriate for a PSAP, but it also includes lists of uses that FDA considers "listening situations that are typically associated with and indicative of hearing loss" and thus within the "hearing aid" device classification. FDA's 2013 draft guidance states:

> Examples of listening situations that are typically associated with and indicative of hearing loss include: difficulty listening to another person nearby, difficulty understanding conversations in crowded rooms, difficulty understanding movie dialogue in a theater, difficulty listening to lectures in an otherwise quiet room, difficulty hearing the phone or doorbell ring, or difficulty listening situations in which environmental noise might inter-

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> fere with speech intelligibility. Products making these or similar claims should not be considered PSAPs. In addition, products that are sold as an "over the counter" alternative or substitute for a hearing aid should not be considered PSAPs.

The 2013 draft guidance document has been viewed as more limiting than the 2009 guidance document, in that statements such as that above appear to be further restricting the types of products, claimed uses, and performance claims that would be appropriate for the PSAP product category. Nevertheless, FDA clearly stated in both the 2009 and 2013 documents that the agency's view was that PSAPs were not intended to be used by individuals with hearing loss.

As nondevice products, PSAPs would not be subject to FDA regulatory controls applicable to medical devices. Thus, there would be no FDA control of the design, manufacturing, or labeling of PSAPs (other than to ensure the labeling did not cause the product to be a hearing aid). Nor would PSAPs be subject to the product performance standards that FDA has recognized as applicable to hearing aids (e.g., ANSI voluntary standards recognized by FDA as applicable to hearing aids).[24] Moreover, the FDA regulations imposing the restrictions on sale, distribution, and use—including requirements pertaining to medical evaluations, hearing aid dispensing, and the user instructional brochure—would not apply to PSAPs.

FDA did advise, in both the 2009 guidance and the 2013 draft guidance documents, that PSAPs are electronic products that emit sonic vibrations and thus are subject to the electronic product provisions of the FDCA that apply to both nondevice products and medical devices.[25] Manufacturers of PSAPs are required to report defects (including product failure to perform to design specifications and causing certain types of injury)[26] and adverse events relating to injurious or potentially injurious exposure of a person to electronic product radiation (including sonic, infrasonic, or ultrasonic waves).[27] PSAP manufacturers are also subject to requirements for repurchase, repair, or replacement of products that have a defect or that fail to comply with an applicable federal standard.[28] These regulations for electronic products are far more limited than the medical device regulatory requirements.

At the time it was issued, FDA established a regulatory docket for the public to submit comments on the 2013 PSAP draft guidance. In January 2016, in response to a PCAST report recommending OTC hearing aids

[24] As noted elsewhere, the Consumer Technology Association has undertaken a project to draft voluntary standards that would apply to PSAPs.

[25] FDCA §§ 531-542, 21 U.S.C. §§ 360hh-360ss; 21 C.F.R. § 1000.15(d).

[26] 21 C.F.R. Part 1003.

[27] 21 C.F.R. §§ 1000.3 & 1002.20.

[28] 21 C.F.R. Part 1004.

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(PCAST, 2015) and this ongoing Academies study, the agency reopened the comment period on the draft guidance (FDA, 2016a). FDA asked the public to address the following issues:

1. The degree to which current FDA requirements are a barrier to hearing aid accessibility, affordability, and use;
2. The appropriateness of creating a category of "basic" hearing aids with labeling for OTC sale; and
3. Whether the benefits of OTC hearing aids would outweigh the risks of foregoing the requirement of medical evaluation.

Concurrently with reopening the comment period on the PSAP draft guidance, FDA also announced a public workshop (held in April 2016) to discuss the current quality system and good manufacturing practices requirements that apply to hearing aids (FDA, 2016b). FDA indicated that it would consider proposals for an alternative model for quality verification and quality standards developed by standards development organizations and key stakeholders.

FDA Regulatory Policy for Mobile Apps and General Wellness Products

The proliferation of mobile apps and consumer-oriented products intended for health and medical uses has challenged FDA with regard to where to draw the line between devices and nondevices. Some of the mobile apps under development might be useful in providing hearing assistance or enabling hearing assistive technologies (see Chapter 3). Some mobile apps might be represented as PSAPs. FDA has issued two guidance documents, one on mobile apps and the other on general wellness products (FDA, 2015a,b). As with PSAPs, FDA has tried to distinguish "medical device" products and uses from nondevice products. FDA has also described generic types of products that might be medical devices but that FDA would not affirmatively regulate in its exercise of enforcement discretion.

FDA has long held the view that software can be a medical device when it meets the statutory definition of "device." This includes software that controls a medical device, software that is an accessory to a device, and freestanding software that performs a device function. FDA's guidance document on mobile medical apps states that a mobile app meets the definition of device when it is intended either to be used as an accessory to a regulated medical device or to transform a mobile platform into a regulated medical device (FDA, 2015b). For example, the guidance states that a mobile app that functions as a stethoscope would be a mobile medical app subject to device regulation. By analogy, a mobile app that functions as a hearing aid would be a device.

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Also relevant to hearing health, FDA's guidance document states that apps intended for use as audiometers are mobile medical apps:

> Mobile apps that use tools within the mobile platform (e.g., speaker) to produce controlled levels of test tones and signals intended for use in conducting diagnostic hearing evaluations and assisting in the diagnosis of possible otologic disorders (i.e., an audiometer). Mobile apps that use a microphone or speaker within a mobile platform to serve as an audiometer to allow healthcare providers to determine hearing loss at different frequencies. (FDA, 2015b)

On the other hand, mobile apps that provide a checklist of symptoms to advise a consumer on when to see a physician, general educational tools, or tools that help a consumer communicate with a health care professional would not be medical apps.

To increase the availability to consumers of health-related technologies, FDA's draft guidance document on general wellness products describes categories of low-risk products that would not be subject to regulation as medical devices (FDA, 2015a). A general wellness product is described as having "(1) an intended use that relates to maintaining or encouraging a general state of health or healthy activity or (2) an intended use claim that associates the role of healthy lifestyle with helping to reduce the risk or impact of certain chronic diseases or conditions" (FDA, 2015a, p. 3). The former category includes products for weight management, improving mental acuity, and other such claimed effects where there is no reference to a disease, disorder, or medical condition. An intervention or technology that may pose a risk to user safety (such as radiation exposure) or that raises novel questions of usability is not considered to be low risk.

Both the mobile apps guidance and the general wellness guidance indicate that rapid advances in health-related technologies are driving consumer demand and that industry is responding by developing a broad array of products. FDA, in turn, has sought to respond to these products with a risk-based approach to the enforcement of its medical device regulations.

The committee provides details later in this chapter on its recommendation to FDA to establish a new category of OTC wearable hearing devices.

State Laws Relating to Hearing Aids and Hearing Aid Dispensing

Types of State Laws Affecting Hearing Aids and Dispensing

Numerous states have enacted laws that affect sales of "hearing aids" as defined in the state law. These state laws typically define a "hearing aid" as a wearable instrument or device intended for the purpose of "aiding

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or compensating for impaired human hearing," for improving the hearing of a "hearing-impaired person," or "aiding or improving defective human hearing."[29]

State laws require the licensing of persons who sell, rent, lease, dispense, or otherwise provide a hearing aid to a consumer. Some state laws require an evaluation or measurement of hearing prior to selling a hearing aid. Some state laws prohibit the sale or distribution of hearing aids through the mail or via the Internet, while other state laws permit such sale or distribution under specified conditions.

States also typically have unfair trade practice laws and consumer protection laws that apply to the promotion and sales of products, which could include hearing aids as well as PSAPs. Other state laws of general applicability might also be relevant, but they are beyond the scope of this review.

Relationship Between FDA and State Regulatory Requirements

There is a complicated relationship between FDA regulations and state laws as they apply to medical devices, and this relationship is particularly relevant to the regulation of hearing aids. Section 521(a) of the FDCA contains an "express preemption" provision applicable to medical devices. Under that provision, no state or local government

> may establish or continue in effect any requirement with respect to a medical device intended for human use having the force and effect of law (whether established by statute, ordinance, regulation, or court decision), which is different from, or in addition to, any requirement applicable to such device under any provision of the act [FDCA] and which relates to the safety or effectiveness of the device or to any other matter included in a requirement applicable to the device under the act [FDCA].

In essence, an FDA requirement applicable to a device that relates to either the safety and effectiveness of the device or a specific requirement for the device established under the FDCA preempts any state or local requirement that is not consistent with the FDA requirement.

State or local requirements are preempted only when FDA has established specific regulations or there are other specific requirements applicable to a particular device under the FDCA. Under FDA's regulations, some state or local requirements affect devices but are not preempted by section 521(a) because they are not "requirements applicable to a device." These include laws of general applicability to device and nondevice products (e.g., unfair

[29] E.g., California Business and Professions Code § 2538.10(d); Florida Statutes Chapter 484.041(5); Georgia Code Annotated § 43-20-3(5); Michigan Compiled Laws § 339.1301(a).

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trade practices) and licensing laws that relate to the practice of medicine or related professions or occupations that administer, dispense, or sell devices.

"Restricted device" regulations issued under section 520(e) may impose restrictions on the sale, distribution, or use of a device beyond those prescribed in state or local requirements. If there is a conflict between such restrictions and state or local requirements, FDA's federal regulations prevail. This would include the restrictions imposed on hearing aid labeling and sales.

Section 521(b) of the FDCA contains a provision whereby FDA may allow the imposition of a state requirement that is different from, or in addition to, any requirement applicable under the act to the device (and which is thereby preempted) by promulgating an FDA regulation exempting the state or local requirement from preemption. FDA's regulations in 21 C.F.R. Part 808 list numerous state requirements that FDA has exempted from preemption, and many of these apply to state requirements applicable to hearing aids and the dispensing of hearing aids.

FDA has treated state licensing laws and terms-of-sale laws as state requirements that are *not* expressly preempted by section 521(a). In contrast, FDA considers that state disclosure and recordkeeping laws, state laws requiring an audiological evaluation before the sale of a hearing aid to a minor, and state laws that are substantially identical to federal requirements *would be* preempted by section 521(a). Nevertheless, FDA has decided affirmatively to exempt these laws from federal preemption through the rule-making exemption procedure.[30]

A manufacturer seeking to market an OTC hearing aid or other innovative hearing assistive technology product thus faces at least four principal hurdles:

1. Federal regulations impose "restricted use" requirements on hearing aid dispensers regarding warnings and information that they must disclose to and obtain from consumers prior to a sale, as well as other conditions on the sale of hearing aids;[31]
2. Federal regulations *exempt* from federal preemption any state laws that (i) require hearing aid dispensers to disclose certain additional information related to the safety and efficacy of hearing aids or that provide consumers with advice at the time of sale, or both; and (ii) impose additional recordkeeping requirements on dispensers;[32]

[30] See 21 C.F.R. § 808.20 et seq. (describing the exemption procedure); 21 C.F.R. § 808.53 et seq. (listing the exemptions applicable to all states and identifying the specific hearing aid laws of 19 states and the District of Columbia that have been exempted from preemption).

[31] FDCA § 520(e); 21 C.F.R. §§ 801.420-801.421.

[32] 21 C.F.R. Part 808; 45 Fed. Reg. 67326 (1980).

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3. Federal regulations *exempt* from federal preemption state requirements that are "equal to, or substantially identical to, requirements imposed by or under" the FDCA;[33] and
4. FDA has by regulation and in statements in the Federal Register interpreted the FDCA as *not expressly preempting* (i) state laws related to the licensing, registration, and certification of hearing aid dispensers; and (ii) state regulations that require hearing aid dispensers to disclose at the time of sale certain information related to the terms of sale (does not include information related to the safety or effectiveness of hearing aids).[34]

In sum, under FDA's current regulations relating to preemption and exemptions from preemption for state laws relating to hearing aids and dispensing, manufacturers would need to consider various state laws and determine whether innovative technologies and marketing approaches would contravene either federal or state regulatory requirements. These state law requirements impose barriers to improving the accessibility and affordability of hearing aids and hearing technologies, in addition to any FDA-related barriers.

Federal Trade Commission

The FTC enforces laws that prohibit fraudulent, unfair, and deceptive trade practices.[35] FTC regulations prohibit the use of misleading sales and advertising practices, including giving inaccurate information about hearing loss, hearing aid performance, refund policies, or warranty coverage.

The FTC website advises consumers that the purchase agreement for a hearing aid should include information regarding the trial period for the product, the warranty, the total price, and what is available during service or repair (e.g., a loaner hearing aid) (FTC, 2016). The FTC also advises consumers about the FDA requirements applicable to hearing aids.

The FTC also provides advice relating to PSAPs. For example, the FTC website states: "Sound Advice: If your hearing is impaired, don't use a PSAP as a substitute for a hearing aid. That may delay the diagnosis of a potentially treatable condition, and cause more damage to your hearing" (FTC, 2016).

Thus, FDA, FTC, and states could bring enforcement with respect to misleading promotional practices for hearing aids and PSAPs.

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[33] 21 C.F.R. § 808.1(d)(2).

[34] 21 C.F.R. § 808.1(d)(3); 42 Fed. Reg. 9285, 9293 (1977); 45 Fed. Reg. 67326, 67331(1980).

[35] Federal Trade Commission Act, 15 U.S.C. §§ 41-58 as amended.

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Federal Communications Commission

The FCC is responsible for enforcing several laws intended to enable Americans with hearing loss to have greater access to wire-line and wireless communications services and emerging communications technologies. These laws include the Hearing Aid Compatibility Act of 1988[36] and the Twenty-First Century Communications and Video Accessibility Act of 2010 (CVAA),[37] which expanded accessibility laws to newer technologies, including digital, broadband, and mobile innovations (see Box 4-4).

The Hearing Aid Compatibility Act required the FCC to ensure that all wire-line telephones manufactured or imported for use in the United States and all "essential" telephones such as public phones, hospital and nursing home phones, emergency phones, and workplace phones are hearing aid compatible.[38] Cell phones (which were not common in 1988) were exempted, but the statute authorized the FCC to limit or eliminate that exemption.

In 2003, with the widespread availability of wireless phones, the FCC required manufacturers of wireless phones to make available a certain number or percentage of models that are hearing aid compatible.[39] The FCC established rules for hearing aid compatibility of digital wireless phones and to wire-line and wireless communications services through a wide array of phones, including voice-over-Internet protocol telephones and wireless handsets that use advanced mobile technologies.

FCC rules require that phones subject to the Hearing Aid Compatibility Act produce a magnetic field of sufficient strength and quality to permit coupling with hearing aids that contain telecoils. The telecoil picks up the voice signal from an electromagnetic signal from the telephone, enabling users of telecoil-equipped hearing aids to communicate over the telephone without feedback and without the amplification of unwanted background noise. FCC rules also establish technical parameters to ensure that telephones are compatible with hearing aids.[40]

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[36] Hearing Aid Compatibility Act of 1988, Public Law 100-394, 100th Cong. (August 16, 1988). 47 U.S.C. § 610.

[37] Twenty-First Century Communications and Video Accessibility Act of 2010, Public Law 111-260, 111th Cong., 2d sess. (October 8, 2010) and amendments, 124 Stat. 2795 (2010) (as codified in various sections of 47 U.S.C.).

[38] 47 U.S.C. § 610(b).

[39] The FCC issued a Notice of Proposed Rulemaking in November 2015 to require that all wireless handsets, not just a certain percentage of models, be hearing aid compatible in accordance with a staged plan for implementation. Fourth Report and Order, and Notice of Proposed Rulemaking, FCC 15-155 (November 19, 2015).

[40] ANSI standard C63.19 sets forth the standard for compatibility of digital wireless phones with hearing aids. A digital wireless handset is considered hearing aid compatible for inductive coupling if it meets a T3 (or U3T) rating under the ANSI standard. The ANSI standard also provides a methodology for rating hearing aids from M1 to M4, with M1 being the least immune to radio-frequency interference (including stray signals from the wireless phone) and M4 being the most immune.

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FCC rules also generally require that telephones allow the volume to be increased to accommodate individuals with hearing loss, whether or not they use hearing aids. Telephones allowing high volume levels must automatically reset to a lower volume each time the handset is returned to an on-hook condition (unless a waiver is granted in certain conditions).

Telephone manufacturers and wireless service providers are required to provide certain types of information to consumers in their product labeling and packaging for hearing aid–compatible products, and on their websites. Manufacturers and wireless carriers must also file annual reports with the FCC that list their hearing aid–compatible products.

Enacted in 2010, the CVAA updates the FCC requirements to address modern communications. Title I of the statute addresses telecommunications access issues to make advanced communications products and services fully accessible to people with disabilities. These services include voice-over-Internet protocol services and electronic messaging. For example, smartphones are required to be usable by people with hearing aids as well as by individuals who are blind or have vision impairments. Title II addresses video programming to make it easier for people with disabilities to view video programming on television and the Internet. For example, programs shown on television with captioning are required to include the captioning when they are distributed on the Internet. The statute also requires that people with disabilities have access to emergency information, including next-generation 911 services and emergency information on the television.

The FCC recently proposed to amend the hearing aid compatibility rules for wire-line handsets. The proposal would incorporate revised industry standards relating to volume control and set a standard for volume control for wireless handsets intended to ensure more effective acoustic coupling between handsets and hearing aids or cochlear implants.[41]

In November 2015, the FCC adopted new rules to expand hearing aid compatibility requirements to technologies such as Wi-Fi calling and Voice over Long-Term Evolution.[42] To avoid regulatory requirements lagging behind technological advances, these new rules also require that future technologies automatically comply with hearing aid compatibility rules.

One question that arises is whether the FCC regulations would govern compatibility with PSAPs, which are not considered "hearing aid" devices as defined by FDA. The answer to this question might depend on which rules are at issue. The FCC accessibility rules require noninterference with hearing technologies—defined to include hearing aids, cochlear implants, and hearing assistive technologies—to the lowest possible level that allows

[41] Notice of Proposed Rulemaking, FCC 15-144, adopted October 23, 2015.

[42] Fourth Report and Order, and Notice of Proposed Rulemaking, FCC 15-155, adopted November 19, 2015.

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a user to utilize the product.[43] In contrast, hearing aid coupling is defined as applicable to "effective wireless coupling to hearing aids."[44] The hearing aid compatibility rules assume that the ANSI standard applicable to hearing aids would apply in addition to the ANSI standard for handsets to achieve compatibility, which would appear to exclude the possibility of PSAPs not complying with that standard.[45]

Americans with Disabilities Act

The ADA includes requirements for nationwide telecommunications relay services and telephone access to local emergency services (911 call centers). Section 508 of the Rehabilitation Act of 1973 included provisions relating to accessibility to telecommunications technologies that are acquired and provided by the federal government.

Litigation under the ADA has been used to try to expand accessibility to communications technology. For example, there are court decisions with inconsistent outcomes as to whether a website for an entity that does not have a physical location open to the public is subject to ADA requirements relating to public accommodations.[46] The Department of Justice has not issued regulations regarding applicability to websites, but it has suggested that the ADA would obligate public accommodations to make the websites that they use to provide their goods and services accessible to and usable by individuals with disabilities.[47]

These statutes, enforced by private litigants as well as the Department of Justice, might also encourage the development of advanced communications technologies that are accessible and usable by individuals with hearing loss.

Voluntary Standards

Voluntary standards are being developed for PSAPs through the CTA. CTA is accredited through ANSI to develop standards and other technical documents for the consumer electronics industry. CTA voluntary standards committees engage industry, academia, consumers, and other constituencies in the development of performance criteria, measurement protocols, and other specifications. In 2015, CTA committee R6WG20 was finalizing a set of minimum performance metrics for PSAPs and a glossary of PSAP-related terms (Belt, 2015). Discussions are under way regarding the potential for

[43] 47 C.F.R. § 6.3(a)(2)(viii).
[44] 47 C.F.R. § 6.3(a)(2)(ix).
[45] 47 C.F.R. § 20.19(b).
[46] See discussion in the federal district court's opinion in National Federation of the Blind v. Scribd Inc., Case No. 2:14-cv-162 (D. Vt., March 19, 2015).
[47] 80 Fed. Reg. 35044 (June 18, 2015).

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a logo program or other mechanism to identify products that meet the performance standards to aid consumers in comparing PSAPs (Belt, 2015).

As noted above, FDA has recognized consensus standards that are applicable to hearing aids, including ANSI/ASA standards. These standards are intended to ensure the quality and performance of these devices. The standards address issues such as specifications of hearing aid characteristics, signal processing, the computation of loudness and speech intelligibility, measuring the intelligibility of speech over communications systems, and measuring performance characteristics under simulated real-world working conditions.

NEXT STEPS AND RECOMMENDATIONS

The broad spectrum of types and severity of hearing loss necessitates a wide range of hearing technologies to meet each individual's needs with options that adhere to safety requirements and are effective in improving hearing and communication in the complex environments of daily life. Interoperability with other technologies including cell phones, televisions, and emergency alert systems is critical.

Develop and Clarify Hearing Device Options

FDA's hearing aid regulations along with state laws relating to hearing aid sales and dispensing place obstacles in the way of new technologies that could make hearing assistance more easily available and accessible for adults who could benefit from such assistance in connection with mild to moderate hearing loss. As noted throughout this report, innovation in technologies relevant to hearing loss are occurring that can provide affordable, effective, safe, and usable technologies to address the unmet need for hearing health care. The committee carefully examined the regulatory and policy challenges and opportunities for expanding innovative technologies and thus provides a range of options for individuals with hearing loss.

FDA sought to carve out PSAPs as a category of nondevice products that could be more easily marketed. But FDA has defined PSAPs as being intended only for a user population of persons without hearing loss, while hearing aids are intended to compensate for hearing loss. Thus, PSAP manufacturers and distributors are not supposed to be offering their products for the purpose of compensating for hearing loss. This legal and regulatory distinction between hearing aids and PSAPs might not be readily apparent to users, and it might not be fully respected by PSAP sellers who explicitly or implicitly offer their products to compensate for hearing loss.

By taking this approach of removing PSAPs from device regulation, FDA has left PSAPs largely unregulated, without the design control requirements, performance standards, technical standards, or labeling

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requirements that apply to devices. The FTC would still apply its regulations prohibiting fraudulent, unfair, and deceptive trade practices, but that is a post-market enforcement that might put consumers at risk.

An approach that could better protect consumers and offer options for more informed consumer decision making would be for FDA to create a category of "OTC wearable hearing devices" intended for mild to moderate hearing loss. In order to ensure their safety and effectiveness, these devices could be subject to ANSI and other technical standards applicable to hearing aid performance. They would be exempted from premarket review if the technology was fundamentally the same as Class I air-conduction hearing aids, or else they would be subject to 510(k) notification if the technology was similar to the Class II hearing aid devices. These OTC wearable hearing devices would be subject to labeling requirements tailored to OTC selection, purchase, and use.

This regulatory approach would be similar to the FDA's regulatory approach of creating separate device classification regulations for "prescription eyeglasses" and "magnifying spectacles."[48] Magnifying spectacles are "convex lenses intended to be worn by a patient who has impaired vision to enlarge images." In contrast, prescription spectacle lenses "provide refractive corrections in accordance with a prescription for the patient." Similarly, a category of OTC wearable hearing devices could provide a simpler technological approach to improving hearing (e.g., amplification) than would a more complicated technology. (The parallel drawn with eyeglass regulation is specific to the regulatory approach and is not meant to draw parallels between the use and performance of the devices.) FDA has moved a variety of monitoring and therapeutic technologies to OTC status (such as noninvasive blood pressure monitoring systems, stethoscopes, burn dressings, medications) to enable consumers and patients to take more control of their own health and medical conditions.

In implementing an OTC wearable hearing device category, FDA should preempt state laws that could pose an obstacle to implementation. For example, FDA should preempt any state laws or regulations that would purport to prohibit OTC sale and distribution of these hearing devices, or purport to require dispensing, fitting, or evaluation by a licensed audiologist, hearing instrument specialist, or other professional occupation prior to purchase of these OTC wearable hearing devices. Various approaches to preemption could be considered by FDA. For example, preemption might be accomplished by making the OTC wearable hearing devices a new category of "restricted devices" (apart from the current regulations in 21 C.F.R. §§ 801.420 and 801.421) such that the FDA regulations would be requirements specifically applicable to the safety and

[48] 21 C.F.R. §§ 886.5840, 886.5844.

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effectiveness of this category of OTC wearable hearing device. In addition, the "OTC wearable hearing devices" would not be called "hearing aids," with the intention of avoiding application of state laws that already refer to and govern "hearing aids."

An alternative option that the committee considered was to retain the category of PSAP as a nondevice product that would be permitted to include claims to compensate for "normal" hearing loss as a result of aging. In essence, age-related hearing loss would not be considered a "disease," and thus the products would not be considered as within the statutory definition of "device." To keep PSAPs outside the device definition, FDA would also have to conclude that PSAPs are not intended to affect a structure or function of the body. This approach would not preempt state laws, however, and many state laws define "hearing aids" as instruments compensating for hearing loss and subject them to dispensing requirements. If the PSAPs claim to compensate for hearing loss, they might be swept into these state laws. Furthermore, this approach would not establish a framework for regulating the quality of PSAPs, the performance claims made for them, or the adequacy of labeling information provided to users—all of which are important considerations.

As medical devices, the OTC wearable hearing devices would be subject to regulatory requirements such as establishment registration (including payment of an annual user fee by the manufacturer), device listing, good manufacturing practices, labeling, and reporting. Compliance with FDA requirements would add to the costs of manufacturing and distribution of these devices. Nonetheless, compliance with these requirements would also provide safety and effectiveness benefits for users. FDA could apply the types of consensus standards that would be applicable to the performance of the OTC wearable hearing devices and also tailor or exempt certain regulatory requirements, such as specific quality system regulations, good manufacturing practices, or reporting requirements, as appropriate to the OTC wearable hearing devices.

Consumer-focused information (e.g., consumer education programs, user instructional brochures, package inserts, as well as specific labeling) will be important for OTC wearable hearing devices. Some OTC devices could be accompanied by software or apps for self-fitting and adjustment of the devices. The sales of OTC wearable hearing devices are anticipated to be similar to other OTC product sales with many reputable products having warranties and return policies. FTC requirements would continue to apply to protect consumers from fraudulent practices. The committee's recommendations regarding the OTC wearable hearing device category are generally consistent with the PCAST recommendation regarding the need for OTC devices (PCAST, 2015) but differ in certain respects and are more specific.

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The committee recognizes the need for an FDA guidance document regarding PSAPs to clarify that PSAPs are for specific purposes not related to hearing loss in contrast to hearing aids and OTC wearable hearing devices that are aimed at addressing hearing loss. The committee believes that this guidance could be accomplished by retaining the 2009 PSAP guidance or through revisions to the 2013 document including recognition that PSAPs are for specific hearing situations not related to hearing loss. As noted above, this distinction would be important to maintain in order to ensure that consumers with hearing loss receive the benefits relating to quality, performance, compatibility, and labeling envisioned under the OTC wearable hearing device category.

The committee notes that these changes would result in a wider range of options for adults with hearing loss, particularly mild to moderate hearing loss (see Table 4-2) and would clarify the purpose of PSAPs (see Table 4-3).

Goal 7: ***Implement a New FDA Device Category for Over-the-Counter Wearable Hearing Devices***

Recommendation 7: The Food and Drug Administration should establish a new category of over-the-counter (OTC) wearable hearing devices. This device classification would be separate from "hearing aids." OTC wearable hearing devices would be defined as wearable, OTC devices that can assist adults with mild to moderate hearing loss.

These devices would

- Explicitly be defined by FDA as intended for OTC sale;
- Be able to be marketed as devices that may assist with hearing loss and be sold as OTC, by mail, or online; and would include mobile apps and associated wearable technologies intended to function as an OTC wearable hearing device for mild to moderate hearing loss;
- Be subject to regulatory requirements that would explicitly preempt current state laws and regulations for hearing aids and dispensing and preempt potential future state laws and regulations seeking to limit OTC access;
- Be exempt from 510(k) premarket review to the extent that the technology is not fundamentally different from air conduction hearing aids;
- Include thorough consumer labeling, including information on
  - frequency gain characteristics,
  - adequate directions for use,
  - communication challenges for which it may be helpful to seek professional consultation, and

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TABLE 4-2
Proposed Range of Hearing-Related Devices and Products for Individuals with Hearing Loss

Devices and Products	Description	Federal Regulations, Standards, or Oversight	Availability
Hearing aids	Medical devices that meet FDA definitions and regulations; used across the range of hearing loss needs	• FDA Class I or Class II devices • Some exempt from premarket review by FDA • Restricted devices subject to FDA requirements in 21 C.F.R. 801.420 & 801.421 • Relevant ANSI standards and others • FCC oversight as relevant regarding compatibility and interoperability • FTC oversight as relevant regarding advertising	• Dispenser (audiologist, hearing instrument specialist) • Online (in some cases) • State law licensing requirements for hearing aids and dispensing • Remove regulatory requirement for medical evaluation or waiver
OTC "wearable hearing devices" (proposed new category of device)	Medical devices available OTC that focus on addressing mild to moderate hearing loss in adults and meet FDA safety and labeling requirements	• FDA Class 1 or Class II devices • Exempt from premarket review (unless fundamentally new technology) • Labeling requirements appropriate to self-selection; warnings regarding when to consult physician or audiologist • Relevant ANSI standards and others • FCC oversight as relevant regarding compatibility and interoperability • FTC oversight as relevant regarding advertising	• OTC • Online • State laws applicable to "hearing aids" and dispensing license would not apply • Apply federal preemption to assure availability over the counter
Other hearing assistive technologies	Consumer products that connect the user to other technologies and communication systems (e.g., phone, computer, hearing induction loop) or that provide the user with other hearing-related opportunities (e.g., self-testing, mobile apps)	• CPSC oversight • FCC and FTC regulations as applicable	• OTC • Online

NOTE: ANSI = American National Standards Institute; CPSC = Consumer Product Safety Commission; FCC = Federal Communications Commission; FDA = Food and Drug Administration; FTC = Federal Trade Commission; OTC = over the counter.

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TABLE 4-3
Consumer Products for Amplifying Sound

Products	Description	Federal Regulations, Standards, or Oversight	Availability
PSAPs	Consumer products that amplify sound and that cannot be labeled, claimed, or advertised for hearing loss; do not meet the OTC hearing device requirements	• CTA standards are being developed • FDA regulation under electronic product provisions of the FDCA applicable to non-medical-device products • FDA guidance to assure non-medical-device status • CPSC oversight • FTC oversight regarding advertising	• OTC • Online

NOTE: CPSC = Consumer Product Safety Commission; CTA = Consumer Technology Association; FDA = Food and Drug Administration; FDCA = Federal Food, Drug, and Cosmetic Act; FTC = Federal Trade Commission; OTC = over the counter; PSAP = personal sound amplification product.

  - medical situations, symptoms, or signs for which to consult with a physician;
- Meet minimum safety requirements and standards, including but not limited to
  - safe maximal sound output (e.g., upper limit for dB SPL [decibel of sound pressure level] peak output) at levels to be determined in conjunction with national experts in hearing conservation,
  - criteria for eartips (e.g., maximum depth for insertion into the ear canal),
  - amplification via air conduction only (wireless technology for programming and connectivity should be permitted), and
  - American National Standards Institute or other voluntary standards for audio characteristics and performance as determined by FDA, as appropriate for this category;
- Be subject to quality system regulation (QSR) requirements, but be considered for exemption from certain QSR requirements as determined by FDA to be appropriate for this category; and
- Have the option to include accessory tests for self-assessment of mild to moderate hearing loss for purposes of selecting and fitting an OTC hearing device.

To further clarify the types of hearing technologies and their oversight and regulation:

- FDA should retain a guidance document on personal sound amplification products (PSAPs) that describes PSAPs as products that

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are not to be offered or promoted to address hearing loss and are subject to the electronic product provisions of the Federal Food, Drug, and Cosmetic Act through its 2009 PSAP guidance document or a revision of its 2013 PSAP draft guidance document. The PSAP guidance document would establish the distinction between PSAPs for normal hearing and the OTC wearable hearing device category for hearing loss.

- The Consumer Product Safety Commission and the Federal Trade Commission should exercise their respective authorities in the regulation of consumer products marketed as PSAPs.

Improve Transparency, Compatibility, and Interoperability of Hearing Technologies and Telecommunications Systems

Individuals with hearing loss frequently use hearing aids with telecoils or other hearing assistive technologies to couple with many other electronic communications products. These individuals benefit from compatibility between and among products and from interoperable systems such as emergency communication system connections, text-to-911, and captioning of alerts. Performance standards and policies can ensure the needed interoperability among products so that the products can easily and seamlessly connect and provide optimum sound transmission and performance (see also Chapter 6). For example, the standards relevant to hearing aid telecoils and hearing induction loop technology ensure that consumers can use the telecoil available across many brands of hearing aids to effectively connect to induction loop systems from a number of different manufacturers that are available in a variety of public spaces.[49] Similar efforts are needed to standardize the interfaces and connection points of hearing aids, hearing assistive technologies, and OTC wearable hearing devices with other types of technologies and communications systems.

As discussed earlier in the chapter, an open platform for programming hearing aid settings could also increase accessibility to the devices and related services. The committee encourages standards development related to open platforms. An open platform approach would provide consumers with greater portability in their hearing health care including increasing the options for choosing their hearing health care professional. Consumers should

[49] The interoperability between telecoils in hearing aids and hearing induction loop technology is possible due to national and international standards that can be used by both technologies (e.g., International Electrotechnical Commission's standard, IEC 60118-4 [IEC, 2014]). It is the committee's understanding that efforts are under way to examine referencing the recently updated hearing induction loop standards in the International Building Code and the International Code Council/American National Standards Institute standard A117.1 regarding accessible buildings (Kirkwood, 2013).

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be notified prior to sale regarding the portability of hearing aid programming. Greater public awareness and user-friendly instructions about the availability, portability, connectivity, and use of hearing aids and hearing assistive technologies, as well as comparable details on product features, are needed to enable informed decision making.

Goal 8: *Improve the Compatibility and Interoperability of Hearing Technologies with Communications Systems and the Transparency of Hearing Aid Programming*

Recommendation 8: The Federal Communications Commission, the Federal Trade Commission, the Food and Drug Administration, the National Institutes of Health, and other relevant federal agencies; the American National Standards Institute and other standards-setting organizations; manufacturers; and industry, professional, and consumer advocacy organizations should

- **develop standards that ensure that hearing aids and over-the-counter (OTC) wearable hearing devices are compatible and interoperable with other technologies and communications systems;**
- **increase public awareness and consumer-friendly information on the availability, connectivity, and use of hearing aids and hearing assistive technologies; and**
- **develop and implement standards for an open platform approach for hearing aid programming that allows any hearing health care professional (or, as evolving technology allows, the device owner) to program the device settings, and require point-of-sale information about the programming features and programming portability of hearing aids in order to enable more informed purchasing decisions.**

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5

Improving Affordability of Services and Technologies

For many people cost can be a key factor in making health care decisions; for some people cost can be the driving factor in such decisions, including whether to forego the care entirely. Among respondents to the 2014 Survey of Household Economics and Decision Making who had a household income of less than $40,000, 45 percent reported going without some form of medical treatment in the preceding 12 months (Federal Reserve, 2015). The cost of hearing health care includes the cost of services and technologies, and these costs may be incurred multiple times over a period of many years in order to maintain and replace hearing aids and other technologies, to continue to monitor hearing status, and to retain the benefits from auditory rehabilitation and other services. In an ideal world, high-quality hearing health care would be easily and immediately accessible, and the costs would be fully covered. Opportunities for note-worthy improvement in affordability do exist throughout the U.S. hearing health care system. Lessons learned from individual health care systems and other health care models in the United States and internationally can shed light on appropriate paths forward to improve the affordability of hearing health care in the United States.

CONSUMER COSTS FOR HEARING HEALTH CARE

A key challenge to understanding the costs associated with hearing health care and how to make that care more affordable is the need to make accurate price comparisons (comparing technologies with similar technologies or services with equivalent services). As discussed in Chapters 3 and

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4, there are several types of hearing health care professionals, services, and technologies from which an individual may benefit. The variety of options and the interest in meeting the unique needs and specific preferences of each individual make it all the more important that consumers be able to make informed decisions about what their personal expenses for hearing health care will be. The committee recognized this challenge throughout its deliberations, and it urges changes to ensure that the public is able to accurately interpret and easily compare the costs for hearing technologies and services in order to make more informed decisions. It was with this concern in mind that the committee considered how to improve not only the affordability of the hearing health care system but also transparency in pricing. Where data were available, this chapter contains references to the prices of hearing health care. Every effort was made to include information about what hearing health care was included—or not included—in a given price.

Professional Services

When consumers are provided with the prices for hearing health care services, they are often presented as a set price for each type of hearing aid they are considering (basic to advanced). It may or may not be obvious that the price includes not only the price of the device (primarily hearing aids, but sometimes other assistive products as well) but also the price for professional fees for services, which may include all or some of the following: a comprehensive assessment of hearing loss and hearing aid candidacy, a functional communication assessment, hearing aid fitting and programming, and other associated services such as routine maintenance for a defined period of time and accessories (see Chapter 3). This is commonly referred to as a "bundled" pricing model. This package price may also include an unlimited number of visits to the dispenser for programming adjustments until the consumer is satisfied and has adjusted to the hearing aids or other technologies. Visits for auditory rehabilitation services may also be included. These services are often needed to achieve optimal fit and maximal benefit from the device and for the individual to learn strategies to maximize communication abilities. An alternative model, unbundled or itemized billing, lists the price of each test, device, and service individually. Results from a 2012 billing practices survey of audiologists showed that 67 percent of respondents used a bundled pricing model;[1] in a 2015 survey

[1]Personal communication. Letter to staff for the Committee on Accessible and Affordable Hearing Health Care for Adults, from Kim Cavitt, President, Academy of Doctors of Audiology; Judith Page, President, American Speech-Language-Hearing Association; and Larry Eng, President, American Academy of Audiology. Received August 27, 2015. Available by request from the National Academies of Sciences, Engineering, and Medicine Public Access Records Office. For more information, email PARO@nas.edu.

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of hearing instrument specialists, approximately 52 percent responded that they used a bundled model.[2] Thus, the majority of hearing health care financial transactions are conducted using a bundled price; moreover, the consumer may not be aware that this price includes devices and professional services and may incorrectly attribute the price solely to the device. A subsequent section of this chapter focuses on transparency in billing.

Nature and Scope of the Hearing Technology Market

The market for hearing aids is often expensive and generally not transparent. The hearing aid industry has been characterized as having "considerable vertical integration, with manufacturers controlling the design, development, manufacturing, and distribution of their products, nearly to the point of sale" (Seelman and Werner, 2014, p. 401). Audiologists and hearing instrument specialists may sell one or several brands of hearing aids but may not sell the full range of products due to the associated costs for programming and other reasons. Additionally, the average hearing health care professional may sell only about 20 hearing aids per month, limiting access to volume discounts (Strom, 2014b), or sell only one brand of hearing aid. These marketing and sales strategies can restrict competition and the associated benefits that competition provides for consumers.

The average retail price for a pair of hearing aids in 2013 was $4,700 (bundled price which includes professional services) (range: $3,300–$6,000) (Strom, 2014b). According to an industry estimate, 2.9 million hearing aids were dispensed in the United States during 2013, with approximately 20 percent dispensed by the Department of Veterans Affairs (VA) (Strom, 2014a). This number was estimated to be an increase of 4.8 percent over the previous year (Strom, 2014b). Globally, hearing aid sales were estimated to be 10.8 million in 2012, with total sales of $5.4 billion on the wholesale market. Of these, 45 percent were sold in Europe, 29 percent in North America, and 26 percent in other regions (Kirkwood, 2013).

A 2013 survey of hearing health care professionals (179 responding from 42 states) found the total weighted average price to the consumer to be $1,657 per economy-level hearing aid, $2,196 for a mid-level hearing aid, and $2,898 for a premium-level hearing aid, resulting in an average price of $2,363 per hearing aid of any level (it was not specified whether services were included in these prices) (Strom, 2014b). The respondents

[2] Personal communication. Letter to the Committee on Accessible and Affordable Hearing Health Care for Adults, from Kathleen Mennillo, Executive Director, International Hearing Society. Received January 15, 2016. Available by request from the National Academies of Sciences, Engineering, and Medicine Public Access Records Office. For more information, email PARO@nas.edu.

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indicated that 37 percent of hearing aids dispensed were in the premium level, 44 percent in the mid-level, and 19 percent in the economy level. Respondents reported that 84 percent of fittings were for binaural hearing aids—the consumer purchasing two devices—with some providers offering discounts on the second hearing aid (Strom, 2014b). The pricing of "high end" hearing aids so that they are much more expensive than "basic" hearing aids implies a substantial benefit to the consumer for using high-end devices; however, few studies have been conducted to examine the benefit to consumers, particularly regarding effectiveness in real-world listening environments (see Chapter 4). A study by Cox and colleagues (2014) found little functional benefit to justify the price disparity between these two levels of hearing aids, which can be as much as several thousand dollars. Additional consumer price data for hearing aids are presented in Table 5-1.

The VA procures hearing aids for its beneficiaries directly from hearing aid manufacturers as part of large-volume contracts. According to one report published in early 2014, the VA paid an average of $369 per hearing aid, while one vendor's retail price for a similar hearing aid in the open market was $1,400–$2,200 (VA Office of the Inspector General, 2014). The VA's negotiation power may be due to their bulk purchasing of large numbers of hearing aids. As noted earlier, the VA's hearing aid purchases made up approximately 20 percent of the U.S. hearing aid market in 2013 (Strom, 2014a); in fiscal year 2014, the VA issued nearly 800,000 hearing aids (Chandler, 2015). In addition to the effects of bulk purchasing on hearing aid prices, another key difference between the price paid by the VA and the price paid by the public lies in paying for professional services associated with the hearing aid purchase. As discussed above, the retail price for the general public is often bundled to include the prices for both the hearing aid(s) and the professional services. The VA, on the other hand, negotiates a price that is only for the hearing aid itself, with fitting and rehabilitative services provided by audiologists and other providers employed by or partnered with the VA; the expenses for these professional services are not part of the price the VA pays to manufacturers for hearing aids. The VA report referenced above did not specify whether additional services were included in the vendor's open market price of $1,400–$2,200. The VA purchasing system provides a glimpse into what may be wholesale or bulk-purchasing prices and demonstrates the potential for and feasibility of lower priced hearing aids.

As discussed in Chapter 4, technologies are rapidly changing and lower cost technologies (e.g., over-the-counter wearable hearing devices) are being explored that could potentially meet the demands of many adult consumers with mild to moderate hearing loss. Currently, there are consumer electronic products termed personal sound amplification products (PSAPs; see Chapter 4) that range in cost from less than $50 to more than $500 (see

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TABLE 5-1
Examples of Retail Prices for Hearing Aids and PSAPs

Retail Price	Reference
$1,800 per aid (2004)[a]	Donahue et al., 2010
$1,601 per aid (2008)[b]	Kochkin, 2009
Range of $1,182 to $2,876 per aid[b]	Kirkwood, 2009
Range of $1,000 to $6,000 per pair[b]	*Consumer Reports*, 2015
Average price $1,986 (2007)[b] Prices include professional services such as evaluation, selection, fitting, training, and care: Behind-the-ear: $1,149 to $2,672[a] Completely in the canal: $1,364 to $2,860[a] In the canal: $1,309 to $2,744[a] In the ear: $1,204 to $2,686[a] (not specified if price is per aid or per pair of hearing aids)	Johnson, 2008
$299 per aid via direct mail[b]	Kochkin, 2014
$1,500 per aid with custom fitting, although exact services included were not specified (survey included individuals receiving hearing aids through the Department of Veterans Affairs)	Kochkin, 2014
Average retail price per aid (2013): $1,657 for economy level[b] $2,196 for mid-level[b] $2,898 for premium level[b] $2,363 average price[b] (total weighted average of five brands and types of aids)	Strom, 2014b
Examples of range of economy level prices per aid in retail stores: $399.00 to $499.99	Costco Wholesale, 2016b; Walmart, 2016
Less than $50 for PSAP[b]	Kochkin, 2010
$25 to $500 for a PSAP[b]	*Consumer Reports*, 2015

NOTES: Many of these prices are from studies funded by the hearing aid industry. Prices reported as per aid (i.e., for one ear) or per pair (i.e., for two ears) depending on the unit used in the referenced source.

[a]Price includes professional services and technologies.

[b]Not specified what price includes in terms of services.

Table 5-1) and may overlap in some or many of the technological features that hearing aids have. Food and Drug Administration guidelines note that these products cannot be marketed for the intended purpose of addressing hearing loss. Product standards are being developed for PSAPs that may facilitate comparisons for consumers (see Chapter 4).

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TYPES OF COVERAGE AVAILABLE FOR TECHNOLOGIES AND SERVICES IN THE UNITED STATES

Medicare

Original Medicare

Services Original Medicare (also known as Medicare Part A and Part B) covers costs associated with hospital stays and outpatient services and supplies considered medically necessary to diagnose and treat a disease or condition. As part of the Patient Protection and Affordable Care Act (ACA), Medicare beneficiaries are eligible for an Initial Preventive Physical Exam when they turn 65 years old (CMS, 2015b) and an Annual Wellness Visit every year thereafter (CMS, 2015a) performed by a physician or other qualified health care provider. These visits can include screening for hearing impairment at no additional cost to the beneficiary (Koh and Sebelius, 2010). Medicare also covers hearing testing only if it is ordered by a physician or nonphysician medical practitioner for the purpose of diagnosing a hearing or balance disorder (CMS, 2016e). Audiologists can be reimbursed for conducting this testing if ordered by a physician or nonphysician medical practitioner (see Chapter 3). However, beyond this hearing test, Medicare does not pay for any other services provided by audiologists to beneficiaries, such as counseling about hearing test results, conducting a functional communication assessment, management planning, or auditory rehabilitation, even though these services are within the scope of practice of audiologists.

Medicare does cover rehabilitation services related to hearing when the services are provided by a speech-language pathologist, however (ASHA, 2016a). Services provided by a speech-language pathologist generally include evaluation and treatment to regain and strengthen speech and language skills, including cognitive and swallowing skills. In the case of patients with hearing loss (but not balance disorders), evaluation for and treatment with auditory rehabilitation can be performed by a speech-language pathologist and be covered by Medicare. Medicare payment for these services provided by a speech-language pathologist must be billed using a general speech-language pathology Current Procedural Terminology (CPT®) code, not a code that is specifically for rehabilitating these particular functions. Extending Medicare coverage of auditory rehabilitation to provide reimbursement to audiologists, whom many consumers and patients are already seeking out for other elements of hearing health care, would make this treatment more affordable for Medicare beneficiaries.

Technologies As stipulated in the Social Security Amendments of 1965, Medicare does not provide coverage for hearing aids. Section 1862(a)(7)

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of the Act states, "Notwithstanding any other provision of this title, no payment may be made under part A or part B for any expenses incurred for items or services . . . where such expenses are for . . . hearing aids or examinations therefor." This policy is codified in the regulation at 42 C.F.R. 411.15(d), which states that hearing aids or examination for the purpose of prescribing, fitting, or changing hearing aids are excluded from Medicare coverage. The question of whether Medicare should cover hearing aids has been raised (Whitson and Lin, 2014); however, some hearing health care and hearing industry professional associations discourage this measure for many reasons, including the projected loss of revenue from private and out-of-pocket payers (Wallhagen, 2014).

Medicare Reimbursement in Other Health Care Fields

Evaluating options for expanding Medicare coverage of hearing health care can build on other areas of health care where coverage is already provided.

Habilitative and rehabilitative services by occupational therapists, physical therapists, and speech-language pathologists Medicare provides coverage for evaluation and treatment related to habilitative and rehabilitative services and related technologies including for physical therapy, occupational therapy, and speech-language pathology. These services may be provided as outpatient, inpatient, in-home when the person is homebound, or in a skilled nursing facility. There is an annual therapy cap limit to reimbursement (see Table 5-2), which means that Medicare may not always cover all rehabilitation services needed by an individual beneficiary before the therapy limit is reached.

Prostheses Medicare covers programming and follow-up after cochlear implantation. This is based on the classification of a cochlear implant as a prosthetic device and the surgical placement as a medical necessity. Medicare defines a prosthetic device as one that replaces a body part or function. Prosthetic devices covered by Medicare include cochlear implants, corrective eyeglasses or contact lenses provided after a cataract operation (coverage is 80 percent), breast prostheses, and ostomy bags (CMS, 2016g).

Medicare Advantage

Medicare Advantage (also known as Medicare Part C) is a program that allows those eligible for Original Medicare to opt out of Medicare itself and choose their own private insurance plan. For each beneficiary who opts out of original Medicare and opts into a Medicare Advantage program, the

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TABLE 5-2
Reimbursement for Outpatient Auditory Rehabilitation and Other Related Therapies Under Medicare Part B

	Audiologist	Occupational Therapist	Physical Therapist	Speech-Language Pathologist
Type of Therapy	Auditory Rehabilitation	Occupational Therapy	Physical Therapy	Speech-Language Pathology
Reimbursed?	No[a]	Yes	Yes	Yes
Therapy cap limit per patient in calendar year 2016 (deductible may apply)	Not applicable	$1,960	$1,960 (maximum allowed shared with speech-language pathology)	$1,960 (maximum allowed shared with physical therapy)

[a]See above discussion about speech-language pathology reimbursement for auditory rehabilitation.

SOURCE: CMS, 2016f.

federal government diverts the money it would have paid into Medicare to that enrollee's Medicare Advantage plan; depending on the plan, the beneficiary may have to pay an additional premium. Medicare Advantage allows the beneficiary to choose a plan that offers specific benefits that meet his or her needs. Some Medicare Advantage plans include coverage for hearing health care services and technologies, or they may offer the option to purchase extra coverage for hearing health care. As such, Medicare Advantage plans can serve as a source of hearing health care coverage for Medicare beneficiaries. Medicare Advantage plans are becoming increasingly popular, with approximately 31 percent of Medicare beneficiaries enrolled in a Medicare Advantage plan in 2015, a number that has increased steadily since 2004 (Kaiser Family Foundation, 2015).

Medicaid

Medicaid Coverage for Adults

As of early 2015, only 28 states covered hearing aid purchases for adult Medicaid beneficiaries, and the extent of coverage varied widely between states, with it being very limited in some states (HLAA, 2015). Many states that provide Medicaid coverage for hearing aids for adult beneficiaries require that an individual obtain a medical exam and an audiological evalu-

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ation to determine if a hearing aid is appropriate. Many states also have an established minimum hearing loss requirement for an individual to be eligible for hearing aids. Some states only cover certain types of hearing aids, and many have a limit on the number of hearing aids and accessories, such as batteries, that beneficiaries can receive within a given period of time. Some states set an annual cap on payments. Even when a state offers Medicaid coverage for hearing health care, finding a provider who will accept Medicaid can present another hurdle to overcome.

The Early and Periodic Screening, Diagnostic, and Treatment Program

The Early and Periodic Screening, Diagnostic, and Treatment (EPSDT) program is the child health component of Medicaid in which services are provided for children until they turn age 21 years (CMS, 2016a). As part of this program, each state must provide minimum hearing health care services to Medicaid beneficiaries under age 21 years, such as diagnosis and treatment, including hearing aids. When young adults covered by EPSDT turn 21 years old, they transition to the adult Medicaid program, if eligible, and receive the Medicaid hearing health care benefits provided by the state in which they reside. Thus, young adults may receive hearing health care benefits through the EPSDT program and then lose the benefits on their 21st birthday if their state Medicaid program does not provide hearing health care benefits to adults, which can make the transition to adulthood more challenging. It is important to note that states are not required to extend their EPSDT program to those who are covered by their Children's Health Insurance Program, which supports uninsured children and young adults up to 19 years of age if their families have an income that is too high for them to qualify for Medicaid.

Affordable Care Act

The ACA established state-level health benefit exchanges that provide access to a marketplace of affordable health insurance coverage for people who were previously uninsured and did not qualify for Medicaid. The ACA also offers states the option to expand their Medicaid programs to cover more people—anyone whose family income is up to 138 percent of the federal poverty line (CMS, 2016d).

While the ACA has improved access to medical services for many people, it has not substantially improved access to affordable hearing health care for adults. Under the ACA, individual state marketplace health insurance plans and expanded Medicaid programs are required to cover 10 "essential health benefits," including "rehabilitative and habilitative services and devices (services and devices to help people with injuries, disabilities,

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or chronic conditions gain or recover mental and physical skills)" (CMS, 2016b). The specific interpretation of what constitutes the benefit varies by state. Many states have chosen benchmark insurance plans that do not include hearing health care services or hearing aids for adults; if the benchmark plan does not include hearing health care coverage, then the expanded Medicaid program (if the state chose to expand) and the plans offered in that state's marketplace are not required to offer hearing health care coverage. Out of 50 states and the District of Columbia, only 7 states (Arizona, Hawaii, Nevada, New York, Rhode Island, Texas, and Wisconsin) have chosen benchmark plans that offer hearing aid coverage for adults, with the amount of the benefit and coverage for hearing aid–related services varying by state (CMS, 2016c). Other states have chosen benchmark plans that include hearing aid coverage for children defined in a variety of ways ranging from newborns to individuals under age 24 years.

Employer-Sponsored and Private Health Insurance

Third-party payment for hearing health care is limited; only a small number of private insurance companies cover hearing health care for adults (Andrews, 2012; *Consumer Reports*, 2015). Employer-based coverage for hearing health care tends to be modest at best. Of those insurance plans that provide some coverage of hearing health care, some cover diagnostic and evaluation services, while others cover part or all of the costs for hearing aids, and some employers offer their employees the option to purchase hearing health care insurance similar to optional dental or vision insurance (ASHA, 2016b).

Many adult Americans under the age of 65 years (i.e., the age to qualify for Medicare) are covered by employer-sponsored health plans, which are regulated under the federal Employee Retirement Income Security Act of 1974[3] (ERISA). There are two distinct types of ERISA plans: (1) those in which employers purchase health insurance coverage for their employees from a private health insurer or health maintenance organization (HMO), with the latter parties bearing the "insurance risk" of plan insolvency; and (2) employer "self-funded" plans in which the employer in effect "self-insures" the health care costs for its employees and bears the insurance risk itself but possibly engages an insurer to assist with claims administration or other non-risk-bearing functions for an agreed-upon fee. This distinction is important because it affects the degree to which state legislators and regulators can impose requirements—such as that employers must offer hearing health care insurance—on employer-sponsored health plans. States can

[3]Employee Retirement Income Security Act of 1974, Public Law 93-406, 93rd Cong. (September 2, 1974).

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legislate benefits mandates that apply to commercially sold health insurance or HMO plans, and these mandates will affect employer-sponsored plans to the extent that employers purchase such policies for their employees. However, because of a legal doctrine known as "ERISA preemption," states cannot impose benefits mandates on ERISA self-funded plans. Thus, employers that offer self-funded health plans are not subject to state-imposed benefits mandates. Large employers may elect to use self-funded plans because their large workforces may be diversified enough to make the insurance risk financially manageable.

As of 2014, only three states—Arkansas, New Hampshire, and Rhode Island—mandated that health insurance plans include coverage for hearing aids (with some specifically stating that related services were included) for adults (ASHA, 2016c). In addition, self-insured plans are exempt, meaning that large companies that have their own insurance programs and that may hire thousands of employees do not have to provide coverage to their employees even if they are in a state with mandated coverage.

Employees who have access to a flexible spending arrangement, regardless of hearing health care insurance coverage, can contribute pretax income (up to a prespecified amount, the maximum being $2,550 in 2015) to their flexible spending arrangement to cover the costs of hearing aids, hearing exams, and other audiological services—in addition to all other medical costs—during the year (IRS, 2016). With this type of arrangement, the employee bears some risk because he or she must use the funds during the calendar year, and if the employee does not incur medical expenditures during the year, he or she will lose the funds (although some employers give their employees a grace period of up to 2.5 months into the following year to use the money in the account or they may allow their employees to carry over up to $500 per year to use in the following year).

Some Federal Employee Health Benefits plans—which cover many federal employees and members of the U.S. Congress—other fee-for-services plans, and HMO plans provide coverage for hearing aids and other services for adults (HLAA, 2008). The comprehensiveness of the benefits depends on the individual plan.

TRICARE, which provides health care for members of the military, military retirees, and their families, covers hearing aids and hearing aid services for beneficiaries with hearing loss that meets specific parameters (TRICARE, 2015). Military retirees may be able to access VA services for hearing health care (see next section on benefits for veterans) or access the Retiree-At-Cost Hearing Aid Program, which is available at certain military hospitals and clinics (MAA, 2016; TRICARE, 2015).

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Benefits for Veterans

Audiology is one of the highest demand services in the VA; hearing loss and tinnitus are the two most prevalent causes of service-connected disability for U.S. military veterans (Chandler, 2015; VA Office of the Inspector General, 2014). These conditions affect veterans of all ages and may not be apparent until years after military service has ended. The VA provides diagnostic audiology services for all veterans enrolled in the VA's health care system, and hearing aids are provided at little or no cost to veterans who have a predefined minimum hearing loss that is determined to be the result of active military service (Beck, 2015) (38 C.F.R. 3.385). In some cases, veterans can receive hearing aids if their hearing loss is not directly related to their military service (38 C.F.R. § 17.149).

The VA's audiology services include the assessment, evaluation, treatment, and management of hearing loss and tinnitus; the fitting and programming of hearing aids and hearing assistive technologies and rehabilitation with cochlear implants and other bioelectric auditory implants; hearing screening and prevention services; and auditory rehabilitation services to optimize residual hearing.

Vocational Rehabilitation Programs

The Rehabilitation Act of 1973[4] authorizes and funds state vocational rehabilitation programs to assist individuals with a physical or mental disability that is a barrier to gaining part- or full-time employment or engaging in post-secondary education. Furthermore, it must be determined that vocational rehabilitation will help the individual with gaining employment or post-secondary education. Eligible individuals work with a counselor to create an Individualized Plan for Employment.

The program provides services, such as counseling, and devices to assist eligible individuals of all ages with disabilities. In 2014 the Workforce Innovation and Opportunity Act[5] amended the Rehabilitation Act of 1973 to require that all state vocational rehabilitation agencies dedicate at least 15 percent of their federal funds to services for young adults transitioning from secondary education to post-secondary education or employment. Efforts to aid young adults include summer programs for students with hearing loss transitioning to college (see Chapter 6).

For individuals with hearing loss or deafness, vocational rehabilitation services can include the provision of hearing aids and other hearing health

[4] Rehabilitation Act of 1973, Public Law 93-112, 93rd Cong. (September 26, 1973).

[5] Workforce Innovation and Opportunity Act, Public Law 113-128, 113th Cong. (July 22, 2014).

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care services if needed for obtaining employment. Vocational rehabilitation services are administered by state programs with funding primarily through the Department of Education's Rehabilitation Services Administration (RSA, 2016). State vocational rehabilitation agencies can and do differ in the way they operate, including how they operate when they have insufficient funds to support all eligible individuals. During these times, by law a state vocational rehabilitation agency determines priority for clients by a process called Order of Selection for Services. Under this process, individuals determined to have the most significant functional limitations are given the highest priority for benefits, while others who are determined to have less severe disabilities may be placed on a waiting list to receive services. The determination of which functional limitations should be given the highest priority is left to the state. Order of Selection for Services may reduce access to vocational rehabilitation services for people with hearing loss as they may not be seen as having as significant a functional limitation as other individuals (University of Arkansas Rehabilitation Research and Training Center, 2008).

One of the challenges identified by state vocational rehabilitation agency staff is raising awareness in the general public, particularly among individuals with hearing loss, that vocational rehabilitation programs exist and may be able to provide them with needed hearing technologies and services.[6] Opportunities to disseminate this information more widely include collaborations among state and local disability agencies and through hearing health care professionals, as well as through advocacy organizations.

LESSONS LEARNED FROM HEARING HEALTH CARE BENEFITS PROVIDED IN OTHER COUNTRIES

Several countries with comparable development and resources to the United States provide some form of public hearing health care funding, which offers a number of funding models from which the U.S. hearing health care system can learn (see Table 5-3). The extent of coverage for technologies and services varies widely, including the extent to which maintenance, batteries, and repair are covered. Wait times to see a professional for the purpose of accessing hearing health care can be several months in some public health systems, which may lead some individuals with hearing loss to choose self-pay options to avoid long wait times.

In some countries that subsidize the cost of hearing aids or provide them free of charge, use of the devices is greater than in the United States (see Chapter 4), but market survey data indicate that the rates of use are still

[6] Personal communication, B. Bell, Alabama Department of Rehabilitation Services, February 16, 2016.

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TABLE 5-3
Examples of Countries with Publicly Funded Hearing Health Care for Adults

	Australia	Denmark	Finland	Germany	Switzerland	United Kingdom
Who is eligible for public coverage?	Adults with a pension, disability, veteran, or under age 26 years	All	All	All	Working adults with disability insurance or retired adults	All
Public coverage for basic hearing aid and related services	100%	100%	100%	Fixed subsidy	Fixed subsidy; covers ~75% for retirees	100%
Public coverage for batteries, repair, maintenance	Yearly fee	Batteries: covered Repair and maintenance: covered	Batteries: usually not covered Repair and maintenance: usually covered	Batteries: not covered Repair: usually covered	Batteries: subsidized Repair: subsidized	Batteries: covered Repair and maintenance: covered
Wait times to receive care	Public: 4–8 weeks Private: minimal	Public: 10–84 weeks Private: none	Public: 8–24 weeks Private: shorter wait time	None	None	Public: ~18 weeks Private: minimal
Uptake of hearing aids by those with hearing loss	39%	47.8% (50.0% of people 18+ years)	< 15%	34.9% (35.0% of people 18+ years)	41.4% (41.9% of people 18+ years)	42.4% (42.7% of people 18+ years)

SOURCES: Anovum, 2016a,b,c,d; Australian Government Office of Hearing Services, 2016a,b; Bisgaard, 2009; Egbert et al., 2012; Hear-it.org, 2016a,b,c,d,e; National Health Service, 2015.

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low even in these countries (see Table 5-3). Population-based epidemiological studies of hearing loss have similar findings: In the Age, Gene/Environment Susceptibility–Reykjavik study (Iceland), hearing aids were found to be used by 21.9 percent of the participants with hearing loss (Fisher et al., 2015). Use was strongly related to the severity of hearing loss and ranged from less than 10 percent usage among those with mild loss to more than 90 percent of those with severe hearing loss (≥ 65 decibel hearing level). In addition to the severity of hearing loss, another, independent predictor of whether an individual used a hearing aid was self-reported hearing loss.

A similar effect was seen in the Blue Mountains Hearing Study (Australia), where the cost of hearing aids was subsidized for older adults with limited means. The 5-year incidence of hearing aid use was 18 percent and 48 percent, respectively, among participants with mild and moderate/severe bilateral hearing loss, was 6 percent among those with unilateral hearing loss, and was 23 percent overall. This was slightly higher than the 15 percent utilization rate reported in the Epidemiology of Hearing Loss Study (Wisconsin, USA) (Fischer et al., 2011; Gopinath et al., 2011). As in the study by Fischer and colleagues (2011), self-reported hearing loss was an independent predictor of the incidence of hearing aid use (Gopinath et al., 2011). Uptake rates in non-U.S. countries that provide subsidized or free hearing health care indicate that the cost of hearing aids is one of a complex combination of factors that contribute to an individual's decision of whether to seek help for hearing loss and is not necessarily the sole reason that some of those who could benefit from hearing aids do not get them (see Chapter 4 for other contributing factors).

INNOVATIVE APPROACHES TO IMPROVING AFFORDABILITY

Improving Transparency in Hearing Health Care Billing Practices

Over the past several years, questions have been raised about the use of a bundled model for hearing health care billing (described earlier in this chapter). First, there is a lack of transparency for the consumer regarding the itemized costs of professional services and technologies. Fees for services are included in the purchase price of the device, which raises the (apparent) cost of hearing aids to the consumer. Second, in the bundled model, prices include a package of services that the individual consumer may or may not use. In the bundled model, prices for services are generally set by computing the average number of appointments across a large number of patients for a specific time period (typically within the manufacturer's warranty period for the hearing aid or other technology or for a certain number of months after fitting). This calculation estimates the fee for providing services and running the business for the average patient in the practice, and this fee is

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then added to the retail price of the hearing aids. Third, bundled models may include services that are advertised as "free," such as hearing tests to determine candidacy for hearing aids and follow-up appointments. The advertised "free" hearing test may not include a comprehensive audiologic evaluation and functional communication assessment (see Chapter 3 for detailed description) but rather a screening-type evaluation, with a comprehensive exam included in the bundled cost presented to the consumer (if this exam is not covered by the consumer's insurance or Medicare as being a medically necessary evaluation). Thus, in a bundled billing system, individuals may be paying for services that they do not need (or may need but do not use), while not paying for or receiving additional services that they do need.

There is some evidence that improved transparency in health care services pricing can lead to substantial reductions in the prices paid by consumers (Reinhardt, 2014). For example, employers with self-funded health plans have used reference pricing to reduce health care costs; if an employee chooses a health care provider that charges more than a given price limit (i.e., the reference price), the employee then pays the difference in price for obtaining the device or service. Reference pricing has proven effective in lowering the price of orthopedic surgery, imaging, and laboratory tests (Robinson and MacPherson, 2012), and it proved to be an effective mechanism for lowering health care expenditures per capita for hearing aids in Germany (Baumler et al., 2008; Schreyogg et al., 2009).

Transparency in hearing health care billing could help to differentiate the cost of the technologies from professional fees for hearing tests, professional services to fit the device, and services to provide follow-up care as needed. This type of "fee-for-service" model is familiar to patients in other areas of health care where they are accustomed to paying for visits to health care professionals, including those providing a combination of devices and services, such as in the cases of physical therapy and dental care, or the separate costs associated with a procedure versus professional services, such as often occurs when billed for visiting a primary care provider and receiving a vaccination or laboratory test.

Separating out the price of the technologies from the price of associated professional services educates the consumer about the retail prices of hearing aids and facilitates a direct comparison of similar devices across manufacturers. A better understanding of the retail prices of hearing aids also makes it easier to make an educated evaluation of the added costs of special features and technologies, such as directional microphones, noise reduction, and multiple programs. In addition, transparent pricing allows consumers to distinguish among the many components of hearing health care services, and it can promote informed decision making by allowing individuals to make informed comparisons and choose the care appropriate and afford-

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able for them. Itemized and transparent lists of prices for technologies and professional services may help consumers understand all of the facets of services that may be helpful in addressing their hearing loss, including assessing the individual's functional communication abilities and the need for intervention, selecting and fitting of the hearing aid or other technologies as needed, auditory rehabilitation services to enhance communication, and ongoing care and support. Price transparency for hearing aids and hearing assistive technologies, professional services, and follow-up care is particularly relevant under new health insurance and health care financing models that are increasing consumer exposure to health care costs (HFMA, 2014).

With transparent pricing options available, consumers can choose to itemize and pay using a "fee-for-service" model. Alternatively, consumers may opt to pay for a separate "service plan" over a fixed period of time, but this package can be billed separately from the fees for pre-fit evaluations and the cost of the devices. Because in an unbundled model individuals are paying only for the services they need and use, unbundling has the potential to reduce the total cost of services for the individual. To further enhance transparency, individuals purchasing technologies should be notified by the seller that additional visits for more services may be necessary and whether the cost of any of those visits is included in the initial purchase price. This model may also lessen the need for a large upfront investment by the consumer because the fees are collected as services are used, which occurs over an extended period of time.

Increased transparency and itemized billing may also be of benefit to consumers who use a direct-to-consumer model of delivery (e.g., online ordering), who are traveling and may want assistance with their hearing aids, or who may want to seek assistance in learning how to use the devices to their full potential, to acquire needed accessories, or to obtain assistance with ongoing maintenance and repairs. Itemized billing provides a means for dispensers to establish a unique fee schedule for these services to provide care for individuals who already own their devices but still require assistance, thus reaching more people and increasing the likelihood that those who have hearing technologies will have opportunities to learn how to get maximal benefit from those technologies. It also provides the means for individuals who purchased technologies from one dispenser to obtain service from another dispenser should the individual move, become dissatisfied with the original dispenser, or have some other reason for wanting to see a different dispenser (see Chapters 3 and 4). Although increasing transparency in pricing can help consumers make more informed decisions, some consumers and their family members still might not know exactly what services they need and will require additional help. Consumer education that accounts for an individual's health literacy level will be needed to complement transparent pricing and itemized billing (see Chapter 6).

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Alternative Care Delivery Systems

As described in Chapter 3, a number of alternative and innovative systems for delivering hearing health care exist and continue to be tested. For example, telehealth models of care have been tested as ways to expand access to various types of health care services, including audiology, and can be particularly useful for patients living in rural areas (see Chapter 3). The use of community health workers is also being tested as a potentially cost-effective mechanism for expanding access, and it may be especially beneficial in bridging access gaps caused by health professional shortages and in providing culturally sensitive care in underserved communities. Additionally, retail clinics are being used to improve access and reduce the growing demands on primary care providers. These alternative approaches to care delivery have the potential to increase access, reduce disparities, promote efficiency and value, and reduce costs for consumers, insurers, and health care as a whole. This section will focus on the potential costs and reimbursement factors related to the provision of care under these models, as Chapter 3 already described these innovative models and considered how they could affect access to care while reducing disparities.

Community Health Workers

The World Health Organization—which supports the use of community health workers in low-income countries as a cost-effective approach to greatly expanding access, maximizing finite resources, and improving health outcomes—describes how community health worker programs can be integrated into larger health care systems (Global Health Workforce Alliance and WHO, 2010; McCord et al., 2013). As noted by McCord and colleagues (2013), the resulting close connections between the community health worker programs and the health care system can lead to such benefits as timely referrals, sufficient supervision, and evidence-based information and processes. Although the specific costs associated with community health worker programs (e.g., HIV and tuberculosis screening, nutrition, pneumonia care) in low-income countries are not relevant to this discussion (McCord et al., 2013), the types of operating costs for a community health worker–delivered program for hearing-related services are likely to be similar. For example, costs might include training, salary, and benefits for the community health workers; equipment for basic screening and education; consultation time for community health workers with health care professionals (e.g., audiologists); and other overhead costs (e.g., transportation, community engagement and outreach).

In the United States, information on the costs and cost effectiveness of community health worker–provided services is limited. A systematic review

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of evidence related to community health worker programs concluded that the available evidence was insufficient to assess and compare the cost effectiveness of the services provided (Viswanathan et al., 2010). Of the 53 studies identified for the review, only six featured data relevant to the cost or cost effectiveness of community health worker programs. The studies—which included interventions related to children's health, cancer screening, and the management of chronic health conditions (e.g., asthma and mental health)—found a large range of annual costs per patient ($52–$6,200) depending, in large part, on the intensity and follow-up requirements of the program (Viswanathan et al., 2010).

Using community health workers to extend access to hearing health care services is still in the very early phases of testing and implementation. In terms of cost, researchers affiliated with the Access HEARS program[7] in Baltimore, Maryland, have reported affordable preliminary outcomes, with the complete cost of the service provided plus the hearing product averaging approximately $200 per person served (Leaderman, 2015). If proven effective, this approach to basic care and treatment options could offer a significant reduction in costs for individuals with mild hearing loss when compared to the much higher cost (discussed earlier in this chapter) that might be required for clinical hearing health care services, which may be a barrier for some individuals. In Arizona, a partnership between academia, a local community, and a private, nonprofit Federally Qualified Health Center serving a mostly rural, low-income population employs Promotoras de Salud (i.e., community health workers) to deliver a hearing health education program in Spanish (Colina et al., 2016). Researchers from the University of Arizona are currently conducting a randomized controlled trial to evaluate the efficacy of this community health worker program to expand access to culturally and linguistically relevant hearing health care education and support. It is important to note that within each of the above-cited examples under research and development, mechanisms for referral and access to clinical care are embedded within the program. There is an ethical responsibility to provide underserved populations with equitable access to quality health care from well-trained professionals. Community health worker programs present novel ways to facilitate this access and make pathways to care more efficient. Currently, coverage and reimbursement for community health worker–provided services through

[7]The Access HEARS program (http://accesshears.com) was launched from the Johns Hopkins University and initially funded through a grant from the AARP Foundation. The program recently completed the proof-of-concept trial and hopes to achieve sustainability through fund raising and employ two full-time community health workers (Leaderman, 2015).

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Medicare, Medicaid, and other insurers are limited. However, the ACA has expanded reimbursement and funding opportunities for community health worker–provided services. For example, the ACA authorized the Centers for Disease Control and Prevention (CDC) to administer grants for various types of evidence-based interventions, including efforts to "educate, guide, and provide outreach in community settings regarding health problems prevalent in medically underserved communities," (CDC, 2015, pp. 4–5), which may represent an opportunity for hearing health care. The legislation also led to an amendment to the Centers for Medicare & Medicaid Services' rules regarding who may be paid for preventive services under the Medicaid program; although this ruling was not directly relevant to audiology, it may open a door for other types of services to be added in the future. Effective October 2013, nonlicensed care providers, including community health workers, may be eligible to receive payment under Medicaid, as long as these services are recommended by a licensed health professional (CDC, 2015; CMS, 2013). States are also establishing a more defined place for community health workers within the health care system through Medicaid. A policy brief from the CDC describes how individual states are authorizing Medicaid reimbursement for community health workers that goes beyond preventive services to integrate community health workers into team-based approaches to health care (CDC, 2015), which could lead to improved access and outcomes for individuals in underserved communities. Leveraging existing models of community health worker–provided services across the United States may provide opportunities for the hearing health care field.

Telehealth and Tele-Audiology

The use of telehealth has been promoted as a mechanism to expand access, improve care continuity and coordination, ensure quality, and increase value and efficiency (AMA, 2016; Klink et al., 2015). Telehealth can also save patients time and money on travel and transportation. For example, the Alaska Federal Health Care Access Network, which provides telehealth services in a state where approximately one-third of the population lives in a rural area, estimated a savings of $8.5 million in travel costs for Medicaid beneficiaries in 2012 (AHRQ, 2013; U.S. Census Bureau, 2012). However, the overall potential for costs saving and the cost effectiveness of telehealth is less certain and will depend on the type of care being provided, the health professionals providing the care, and the types of equipment and other resources needed to provide the care. A systematic review of literature concluded that telehealth services appear to be no more cost effective than conventional health care delivery mechanisms (Mistry, 2012). Despite these

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findings, telehealth, like retail clinics (described below), holds the potential to reduce expenditures on more expensive forms of care (e.g., emergency department visits), which would result in a net savings for payers and the health care system.

Inconsistencies and limitations related to reimbursement regulations have been cited as barriers to the wider adoption of telehealth (e.g., AMA, 2016; Klink et al., 2015). For example, Medicare coverage of telehealth services is currently limited to beneficiaries who live in rural areas; a defined set of services provided by specific providers;[8] and live, synchronous interactions between the patient and provider (CMS, 2015c). Legislation has been introduced in Congress to update Medicare's coverage of telehealth services: the Medicare Telehealth Parity Acts of 2014 and 2015 (H.R. 5380 and H.R. 2948), if enacted, would have expanded coverage beyond rural areas; included reimbursement for audiologists, speech-language pathologists, and other types of health professionals; and allowed remote patient monitoring for some chronic health conditions (Lacktman, 2015).

Many states have also enacted laws which provide for reimbursement through Medicaid and private insurances (Bachrach et al., 2015). Almost every state allows some form of reimbursement for telehealth services through Medicaid (48 total), and almost half have parity laws covering private insurances (24 total). However, the legal frameworks in many states set limits on the provisions of telehealth. For example, nine states have reimbursement restrictions related to distance or population density (e.g., distance between patient and provider, use in rural areas), and four states forbid the use of cell phone videos for the purposes of telehealth. Additionally, many states limit reimbursement to only cover live, synchronous interactions, prohibiting the use of remote patient monitoring, store-and-forward interactions, or transfer of saved images (Thomas and Capistrant, 2015). In its most recent gap analysis, the American Telemedicine Association, an advocacy organization that supports the broad implementation of telehealth in the United States, ranked Alaska as the most telehealth-friendly state in numerous categories (e.g., Medicaid reimbursement, the use of eligible technologies) (Thomas and Capistrant, 2015).

With regard to hearing health care in the United States, the use of telehealth services is currently limited due, in part, to reimbursement restrictions. As noted above, Medicare regulations do not include audiologists and speech-language pathologists as eligible providers of telehealth services (AAA, 2016; CMS, 2015c). However, Medicaid programs in some states do allow reimbursement for audiology services that can realistically be provided remotely. For example, earmold impressions cannot be taken

[8] I.e., physicians, physician assistants, specific types of nurses, registered dieticians and nutritionists, and clinical psychologists and sociologists.

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remotely, but teleprogramming of hearing aids could be covered in some states (AAA, 2016; ASHA, 2012). Beyond expanding access to care and reducing travel costs for patients, other possible cost savings associated with tele-audiology remain unclear. Given the uncertainties about time requirements, administrative and technical costs and requirements, and reimbursement coverage and rates, some hearing health care professionals may be reluctant to offer telehealth to their patients. Further investigation and policy changes will be required to ensure the widespread adoption of tele-audiology services that satisfy the needs and preferences of both patients and providers.

Retail Clinics

The number of retail clinics in the United States has increased by more than 9-fold in the past 10 years (from 200 in 2006 to more than 1,800), and estimates suggest that the number of visits to these clinics increased between 4- and 7-fold during roughly the same timeframe (Bachrach et al., 2015; Mehrotra and Lave, 2012). As described in Chapter 3 and in previous reports from the Institute of Medicine, these clinics offer a convenient and efficient alternative to some primary care services, which may also result in savings to patients, payers, and the health care system as a whole (IOM, 2010, 2011). For example, a 2010 study by Weinick and colleagues (2010) estimated that approximately 13 to 27 percent of emergency department visits could be managed safely and effectively in retail and urgent care clinics, representing a possible overall savings of approximately $4.4 billion dollars per year. However, questions remain about whether the increased availability of retail clinics in the last decade is reducing unnecessary emergency department visits or driving an increased utilization of health care services overall and thus increasing cost (Mehrotra, 2015).

In setting costs for patients, the retail clinic model uses a transparent, fixed pricing scheme in which prices for services are readily available or clearly posted in stores and online. The costs for most services range from $30 to $75, representing a significant savings to patients and insurers when compared with the cost of a visit to a physician's office or an emergency department (IOM, 2010; Mehrotra, 2015). For example, the cost of care in physicians' offices or emergency departments for the three most commonly treated conditions in retail clinics (i.e., otitis media, pharyngitis, and urinary tract infections) ranges from approximately $160 to more than $550, whereas care for those conditions in a retail clinic cost approximately $100[9] (IOM, 2010; Mehrotra, 2015; Mehrotra et al., 2009). Although

[9]These estimates include the cost of the consultation with the health care professional(s), pharmacy/prescription services, and laboratory expenses (Mehrotra et al., 2009).

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most retail clinics accept health care insurance—Medicare, Medicaid, and private insurance—and some insurance companies encourage the use of retail clinics by reducing or waiving copay fees, approximately 35 percent of patients choose to pay for services out of pocket (IOM, 2010; Rudavsky et al., 2009). The lower costs for these services can be attributed to the use of less costly health care professionals (e.g., nurse practitioners, physician assistants); efficient models of care that implement clearly defined care protocols, algorithms, and clinical practice guidelines; and new technology.

The services offered through retail clinics are evolving to include management for some chronic health conditions, and more retail clinics are being integrated into health care systems as a way of ensuring timely referrals, improving care coordination, and possibly lowering costs for payers (Bachrach et al., 2015), further opening the possibility of including hearing health care services. Just as community health workers can be trained to administer basic audiometry services and technologies in underserved communities, so too can health care professionals in retail clinics, as is currently being considered by the partnership between the Walgreens Boots Alliance and Connect Hearing (Sonova) (see Chapter 3). Costco Wholesale warehouses offer another retail example with approximately 500 hearing aid centers located in Costco Wholesale warehouses across the United States. These hearing aid centers offer hearing tests and sell hearing aids from four of the six largest hearing aid manufacturers at prices lower than average retail prices (from $499.99 per hearing aid) (Costco Wholesale, 2016b; Kirkwood, 2014; Stock, 2013) (see Table 5-1). Costco Hearing Aid Centers also provide free follow-up care and assistance with cleaning (Costco Wholesale, 2016a). Although this model offers more affordable options to those who have a Costco membership, there are concerns about the lack of training some Costco Hearing Aid Center employees have (e.g., Kasewurm, 2014). In conjunction with companies that operate retail clinics, researchers, health care professionals, health care systems, and regulators, the hearing health care field needs to determine which services and treatments can be provided in retail clinic settings and still ensure high-quality, cost-effective care that is integrated with other hearing health care professionals and services.

NEXT STEPS AND RECOMMENDATIONS

In the hearing health care system that serves adults, nearly all costs are out of pocket and the costs are relatively high. The vast majority of employers do not provide hearing health care insurance. Few state Medicaid programs offer hearing health care benefits without strict limitations. Vocational rehabilitation programs offer a tremendous benefit for those with hearing loss who are seeking employment, but wait times can be long, and

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those with hearing loss who are seeking assistance can be skipped over in order to help those who have disabilities considered to be more prohibitive for gaining employment. Given the high number of Americans who have hearing loss and the high cost of hearing health care, changes to the cost of hearing health care are needed.

Goal 9: *Improve Affordability of Hearing Health Care*

Recommendation 9: The Centers for Medicare & Medicaid Services (CMS), other relevant federal agencies, state Medicaid agencies, health insurance companies, employers, hearing health care providers, and vocational rehabilitation service agencies should improve hearing health care affordability for consumers by taking the following actions:

- **Hearing health care professionals should improve transparency in their fee structure by clearly itemizing the prices of technologies and related professional services to enable consumers to make more informed decisions;**
- **CMS should evaluate options, including possible statutory or regulatory changes, in order to provide coverage so that treating hearing loss (e.g., assessment, services, and technologies, including hearing aids) is affordable for Medicare beneficiaries;**
- **CMS should examine pathways for enhancing access to assessment for and delivery of auditory rehabilitation services for Medicare beneficiaries, including reimbursement to audiologists for these services;**
- **State Medicaid agencies should evaluate options for providing coverage for treating hearing loss (e.g., assessment, services, and hearing aids and hearing assistive technologies as needed) for adult beneficiaries;**
- **Vocational rehabilitation agencies should raise public awareness about their services that enable adults to participate in the workforce, and they should collaborate with other programs in their respective state to raise this awareness;**
- **Hearing health care professionals and professional associations should increase their awareness and understanding of vocational rehabilitation programs and refer as appropriate; and**
- **Employers, private health insurance plans, and Medicare Advantage plans should evaluate options for providing their beneficiaries with affordable hearing health care insurance coverage.**

Goal 10: *Evaluate and Implement Innovative Models of Hearing Health Care to Improve Access, Quality, and Affordability*

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Recommendation 10: The Centers for Medicare & Medicaid Services, the Patient-Centered Outcomes Research Institute, the Agency for Healthcare Research and Quality, the National Institutes of Health, the Centers for Disease Control and Prevention, the Health Resources & Services Administration, the Department of Defense, the Department of Veterans Affairs, researchers, and health care systems should prioritize and fund demonstration projects and studies, including randomized controlled trials, to improve the evidence base for current and innovative payment and delivery models for treating hearing loss.

Specifically,

- Innovative models to be evaluated should include, but not be limited to, community health workers, telehealth, mobile health, retail clinics, and self-administered hearing health care. These projects and studies should include outcomes that are patient centered and assess value, comparative effectiveness, and cost effectiveness.
- Demonstration projects should evaluate the health impact of beneficiary direct access to audiologist-based hearing-related diagnostic services, specifically to clarify impact on hearing health care accessibility, safety, and the effectiveness of the medical home. This excludes direct access to audiologic testing for assessment of vestibular and balance disorders and dizziness, which require physician referral. Successful outcomes would provide evidence of effective communication and coordination of care with primary care providers within a model of integrated health care, and evidence of appropriate identification and referral for evaluation of medical conditions related to hearing loss and otologic disease.
- Models that are found to be most effective should be widely implemented.

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6

Engaging a Wider Community: Awareness, Education, and Support

Hearing plays a vital role in how individuals experience, interact with, and relate to the people and environment around them. Hearing is sometimes referred to as the "social sense" because of its function in developing and maintaining intimate relationships and social connections with family, friends, coworkers, and acquaintances. As described in Chapter 1, the social-ecological model depicts the complex network that encompasses the interplay among individuals and their families, the social networks and relationships in their lives, the organizations and institutions that provide services and support to the individuals, the communities in which the individuals work and live, and society at large. Supporting individuals with hearing loss requires adaptable solutions that span society—not just solutions geared toward individuals with hearing loss or solutions within the context of a medical model that revolves around the delivery of care and services in a health care setting. Components at all levels of the social-ecological model can contribute to hearing health and overall well-being.

This chapter focuses on education, support, and awareness for individuals with hearing loss, their families, their communities, and society as a whole. Attitudes and beliefs about hearing loss and the use of hearing health care services and technologies are explored from the perspectives of individuals and family members, employers and coworkers, and the general public, including the media. The chapter provides insights on the role of health literacy, the Internet, community-based support, and the built environment, such as public and private spaces that can be designed or altered to enhance acoustics and accessibility, and it also describes how these fac-

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tors can empower individuals with hearing loss. The chapter also examines the role of the community, organizations, and the public in supporting individuals with hearing loss and considers whether attitudes about hearing loss have improved with the increasing use of technology, specifically mobile technologies. Finally, the chapter highlights areas of focus for next steps as well as research priorities that are essential for optimizing support and access for individuals with hearing loss.

Although the knowledge, attitudes, education initiatives, and community support associated with other health conditions, such as HIV/AIDS, epilepsy, cancer, and substance use and mental health, have been well studied and are thoroughly described in published, peer-reviewed literature and in previous Institute of Medicine (IOM) reports (e.g., IOM, 2006, 2012; IOM and NRC, 2005), the literature about hearing loss is considerably more limited and is often based on relatively small samples (frequently less than 100 individuals) and anecdotal evidence. In conducting its literature searches and reviews for this chapter, when possible the committee focused on articles that were relatively recent—less than 15 years old—because of the natural evolution in attitudes and beliefs that are often associated with advances in technology, changes in education, and shifts in societal norms.

INDIVIDUALS AND FAMILIES

Living with hearing loss or having a loved one with hearing loss, especially when the loss is severe or untreated, has the potential to affect many aspects of everyday life and can be associated with a diminished quality of life (see Chapter 2). Hearing loss has been associated with serious health comorbidities such as depression, anxiety, low self-esteem and insecurity, social isolation, stress, mental fatigue, cognitive decline and dementia, reduced mobility, falls, and mortality (see Chapter 2). As described in earlier chapters, both the severity of hearing loss and the impact that hearing loss has on individuals' lives vary. These variations combined with numerous individual-specific factors (e.g., environment, available support, attitudes, preferences, or socioeconomic status) create unique circumstances for each person with hearing loss. Recognizing these individual circumstances and empowering individuals and their families to take action and to become familiar with the full range of options for managing hearing loss is fundamental to maximizing quality of life and ensuring that individuals with hearing loss and members of their families have every opportunity to thrive. Individual empowerment should be built on a foundation of awareness, education, and support, where individuals and families play a central role within a constellation of other entities across the social-ecological model (see Chapter 1), including health care providers, employers, advocacy or-

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ganizations, communities, and the public—all of which can contribute to empowerment.

Attitudes and Beliefs

People with hearing loss may perceive and experience a range of feelings and emotions about hearing loss, seeking care, and using such technologies as hearing aids. Negative attitudes and beliefs about hearing loss can originate both internally—arising from the beliefs and attitudes of the individual experiencing the hearing loss—and externally—produced by the beliefs and attitudes held by various social connections, including family members, friends, health care professionals, employers and coworkers, the general public, and the media. When considering how hearing loss may affect self-perception and social identity, many individuals cite fears of feeling or being perceived as old, frail, less capable, vulnerable, uninteresting, unattractive, or less desirable or as having a disability or cognitive impairment (Habanec and Kelly-Campbell, 2015; Kochkin, 2007b; Munro et al., 2013; Southall et al., 2010; Wallhagen, 2010). Because of these perceptions, people may hide their hearing loss or deny that it affects their lives, may opt not to seek treatment, or may choose not to use hearing aids after they have been purchased.

Similar to many other health conditions, attitudes and beliefs about hearing loss are directly linked to behavior (Glanz et al., 2008; van den Brink et al., 1996). Studies of older adults have demonstrated that hearing loss is often accepted as a natural part of aging that does not require intervention and that individuals often believe that hearing aids are not effective or that they only marginally benefit the user (Kochkin, 2000; McCormack and Fortnum, 2013; Ng and Loke, 2015; Oberg et al., 2012; van den Brink et al., 1996). As discussed in Chapter 4, there are numerous reasons why individuals choose not to adopt or use hearing aids or choose not to seek hearing health care. One notable factor is attitude. In a market survey, Kochkin (2007b) found that attitudes and stigma played a sizable role in decisions about hearing aid adoption. Two-thirds of survey respondents reported negative attitudes that resulted from problems with hearing aid performance, and almost half chose not to use a hearing aid due to some form of perceived stigma; respondents specifically noted embarrassment, pride, and fear of being viewed by others as old or frail or as having a physical or mental disability (Kochkin, 2007b).

In a longitudinal study of experienced and reinforced stigma among older adults with hearing loss and their communication partners,[1] Wallhagen (2010) developed a model of the interaction between three primary areas

[1] A communication partner can be a spouse, partner, family member, or friend who frequently converses with the individual who has hearing loss.

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of experienced stigma—self-perception, ageism, and vanity—and reinforced stigma (see Figure 6-1). The specific attitudes and beliefs that are described converge and affect decisions about whether to be evaluated for hearing loss, to seek treatment, and to use hearing aids and hearing assistive technologies. These types of beliefs, misperceptions, and stigmas, in combination with other barriers described earlier in the report (e.g., affordability, accessibility), can directly hinder action and timely access to the kinds of high-quality care and community-based services that can help greatly to optimize quality of life and overall well-being.

The attitudes and beliefs of spouses, partners, family members, and friends are also highly influential in decision making and can either help to overcome or reinforce the perceived stigma associated with hearing loss and the use of hearing aids and other technologies. Positive attitudes and beliefs of partners and family members, along with greater levels of family support, have been associated with seeking help for hearing loss, the successful adoption and use of hearing aids, and increased self-efficacy in the use of hearing aids (Dawes et al., 2014; Hickson et al., 2014; Meyer and Hickson, 2012; Meyer et al., 2014; Ng and Loke, 2015). In fact, Hickson and colleagues (2014) concluded that the strongest indicator of positive outcomes for hearing aid use was having the support of family, friends, and significant others. Conversely, negative attitudes of family members—such as perceptions of old age, disability, and poor aesthetics—contribute to delays in disclosing

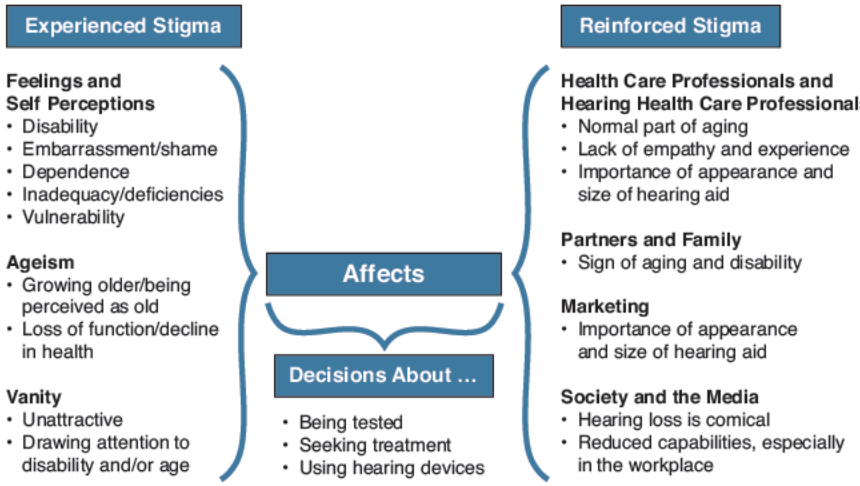

FIGURE 6-1 The interrelationship between experienced and reinforced stigma and how stigma can affect decision making for people with hearing loss.
SOURCE: Adapted from Wallhagen, 2010. Reprinted with permission of Oxford University Press.

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hearing loss, seeking help, and using hearing aids (Kochkin, 2007b; Meyer and Hickson, 2012; van den Brink et al., 1996; Wallhagen, 2010). The attitudes and support of others, especially loved ones, do matter and can have a meaningful effect on the attitudes and beliefs of the individual with hearing loss, which in turn can promote action.

Although experienced and perceived stigma can prompt delays in disclosing hearing loss and seeking assessment and treatment (Clements, 2015; Southall et al., 2010; Wallhagen, 2010) (see Figure 6-1), not everyone manages stigma and negative attitudes in the same way. Some individuals tend to have more positive attitudes and to be more resilient and are able to overcome the effects of stigma by pursuing positive opportunities, learning new skills to manage the hearing loss, and seeking out interactions with others who have hearing loss (Shih, 2004; Southall et al., 2010; Wallhagen, 2010). Some individuals look within their social circles for support or focus on the possible benefits that treatment can offer. Studies demonstrate that, among other factors, people with more positive attitudes and expectations are more likely to be empowered to take action and experience success with treatment options such as hearing aids and communication programs (Laplante-Lévesque et al., 2012b; Ng and Loke, 2015; van den Brink et al., 1996). This ability for some to thrive in spite of perceived stigma presents an opportunity for educating others and fostering resilience among individuals with hearing loss. Resilience and educational interventions, for both individuals with hearing loss and their families, should be studied in greater depth in order to develop and evaluate techniques and adaptable programs that can encourage resilience and enable individuals to overcome barriers and take action in communities across the country.

Health Literacy and Understanding Hearing Loss

Health literacy is defined as "the degree to which individuals have the capacity to obtain, process, and understand basic health information and services needed to make appropriate health decisions" (Ratzan and Parker, 2000, p. vi). It was elevated to a national public health priority following the 2000 release of the goals and objectives for the Healthy People 2010 initiative and the release of the IOM report *Health Literacy: A Prescription to End Confusion* in 2004 (HHS, 2000; IOM, 2004). Adults more than 65 years old; racially and ethnically diverse populations, especially Hispanic adults; people with lower socioeconomic status (i.e., lower levels of education and income); and people with disabilities all tend to have lower levels of health literacy, as do more men when compared with women (Kutner et al., 2006; NCHS, 2012). In recent years, health literacy researchers have uncovered various serious consequences of low health literacy, such as poor health outcomes and overall health status, declines in physical function

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among older adults, decreased access to and use of health care services, and increased health disparities among racially and ethnically diverse populations (e.g., Bennett et al., 2009; Berkman et al., 2011; Smith et al., 2015b). The IOM's 2004 report concluded that increasing health literacy is a shared responsibility, "based on the interaction of individuals' skills with health contexts, the health-care system, the education system, and broad social and cultural factors at home, at work, and in the community" (IOM, 2004, p. 35).

Despite the national focus on increasing health literacy, few studies have examined the role of health literacy on hearing health care or the impact it may have on the uptake of and adherence to various treatments. Nair and Cienkowski (2010) identified a clear mismatch between the literacy levels of individuals with hearing loss and the language that audiologists used during consultations and also the language used in written hearing aid user instructional brochures produced by manufacturers and given to individuals purchasing hearing aids, as mandated by the Food and Drug Administration (FDA). Caposecco and colleagues (2014) conducted a review of 36 hearing aid user instructional brochures and determined that 25 of them (69 percent) were not suitable for older adults because of the terminology, technical vocabulary, and jargon used. The authors also identified deficiencies with the scope of the content and the layout/typography. Another recent review of a modified hearing aid user instructional brochure, which was developed using best practices in health literacy (e.g., the use of graphics, lower-level vocabulary, and increased font size), found that people who were given the modified brochure performed better on a test of hearing aid management and were able to complete more hearing aid operation tasks without assistance than those who were given the manufacturer's brochure (Caposecco et al., 2016). In addition to the FDA-mandated provision of user instructional brochures, some manufacturers and hearing health care professionals provide customized information on specific hearing aids and other technologies in order to better guide and educate consumers. However, the written information provided during consultations may vary widely in content, depth, and health literacy scores.

Atcherson and colleagues (2013) found that audiologists may not be aware of the extent of low levels of literacy and health literacy in the United States and that they may also be unaware of the discrepancies between literacy rates and the written materials that are often presented to patients (e.g., consent forms, privacy forms). The American Academy of Audiology's *Standards of Practice* calls for audiologists to develop and use language and written materials that are at appropriate heath literacy levels (AAA, 2012). When communicating with individuals with hearing loss and their families, there are numerous other communication factors that audiologists and other health care professionals need to be aware of if they are to ensure

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effective communication and comprehension. For example, self-efficacy and the comprehension of hearing terminology and hearing aid jargon may increase over time with experience. Therefore, an individual diagnosed with hearing loss or using a hearing aid for the first time may require a more simplified explanation than an individual who has been managing hearing loss and using hearing aids for many years.

An individual's hearing loss in and of itself may create unique communication challenges for patients, regardless of the health care setting. The possibility that some individuals with hearing loss may not accurately hear some explanations and instructions may compound underlying barriers related to health literacy, further complicating the individual's ability to understand and process information provided during hearing assessments and consultations, as well as during other interactions with the health care system (see Chapter 3). Furthermore, possible language barriers need to be considered when consulting with patients and their families. Appropriate and comprehensible communication, both written and verbal, is crucial to further empower people with hearing loss, increasing the likelihood of successful self-management of hearing loss and uptake of appropriate treatments.

Improving Consumer Measures

In considering how to improve health literacy and understanding about hearing loss for individuals and their families, the committee suggests that researchers explore the possibility of developing an easy-to-understand measure of hearing and hearing loss for patients. There is currently no simple, consumer-friendly measure in wide use, and the results of standard hearing evaluations, in the form of audiograms and other measures of hearing and communication, may be too complicated for some individuals with hearing loss to understand or retain. Although audiometric results are complex, the committee recognizes the importance of the pure-tone thresholds recorded on an audiogram as an important, basic measure of hearing acuity and urges efforts to determine ways to better convey this important information. One such example of a counseling tool in audiology is the familiar sounds audiogram, although there is potential for further simplification into a tracking metric.

Physicians and researchers have identified and developed numerous measures to assess, quantify, and improve health. Table 6-1 provides examples of commonly used health measures and indicators. Although some consumers may not fully understand the underlying principles and physiological mechanisms of these measures, the measures provide individuals with a discrete number, usually associated with a range of outcomes (e.g., normal, at risk, high), that can be used to better understand risk factors and

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TABLE 6-1
Examples of Health Measures That Are Available for Individuals to Easily Track and Monitor Changes in Their Health Status

Measure/Test	Testing Methods and Use
A1C	A1C levels are determined through a blood test and offer an average measure of blood glucose levels during the prior 3 months. A1C can be used to help identify and diagnose diabetes and pre-diabetes. Levels can be measured periodically to identify changes in blood glucose and to determine whether treatments and lifestyle changes are effective for individuals with diabetes (NIDDK, 2014).
Blood pressure	Blood pressure can be measured using an automated blood pressure cuff or with a cuff and a stethoscope. It is reported with two numbers: systolic, the pressure in the vessels when the heart beats, and diastolic, the pressure when the heart is at rest. Blood pressure measures are divided into three categories—normal, at risk (prehypertension), and high—and can be used to determine risk for heart disease, stroke, and kidney disease (CDC, 2014).
BMI	Body mass index (BMI) is an estimated measure of body fat, which is calculated by dividing a person's weight by his or her height and squaring that number. The BMI scale is usually divided into four categories—underweight, normal, overweight, and obese—and it can be used to assess risk for health conditions such as diabetes, hypertension, some types of cancer, and other conditions associated with obesity (CDC, 2015a).
Visual acuity	Visual acuity tests are administered using standardized vision charts. Visual acuity is frequently expressed as a fraction: The top number is the distance of the patient from the eye chart (usually 20 feet) and the bottom number is the distance away from the chart that a person with normal vision would need to stand in order to read the same line correctly as the person being tested. The test can be used to measure changes in vision over time and identify possible eye conditions that may need further treatment (NLM, 2016).

more easily track changes in their health over time. These specific measures also provide a simplified starting point for discussions between individuals and health care professionals about opportunities to improve health and well-being and may contribute to improved hearing health literacy.

The American Heart Association and health care systems across the United States have leveraged specific health metrics through Know Your Numbers campaigns in order to educate individuals about diabetes and about risk factors for cardiovascular disease, such as obesity, high cholesterol, and high blood pressure. These education initiatives encourage individuals with pre-diabetes and diabetes to track their weight and body mass index, blood sugar levels, cholesterol, and blood pressure (AHA, 2015; BCBS of Nebraska, 2016; Johns Hopkins University, 2016). In Australia,

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researchers developed a community-based Know Your Numbers intervention that focused on educating consumers in pharmacies about high blood pressure and other risk factors for stroke. Three months after measuring the participants' blood pressure and providing educational resources, knowledge about hypertension and its risk factors improved across the study population (Cadilhac et al., 2015). A similar consumer measure is needed for hearing.

An easy-to-remember consumer measure could be generated from the results of pure-tone audiometry, but a simplified, real-world measure of communication abilities could also be beneficial in providing consumers with understandable and realistic results. For many years, researchers have suggested that measuring speech recognition in noisy backgrounds has substantial benefits over the traditional assessment, which involves measuring speech recognition using lists of simple words that are presented at relatively high volumes in a quiet background (e.g., McArdle and Wilson, 2008; Smeds et al., 2015; Wilson, 2011). McArdle and Wilson (2008) argued that testing speech recognition in the presence of noise offers four primary advantages, including

- better alignment with the most common concern of people with hearing loss—understanding speech in noisy or complex acoustic environments;
- a more accurate assessment of the impact of hearing loss in real-world settings;
- informing the selection of the most appropriate hearing technology given individual needs; and
- helping set expectations regarding hearing aids and their performance in real-life situations.

Box 6-1 provides examples of hearing tests that were designed to measure speech recognition in noise by presenting the listener with sentences or words in the presence of various types and levels of background noise. Primarily, there are two types of tests that measure speech recognition in noise. The first uses fixed levels of speech and noise, with the outcomes reported as a percentage of words or sentences repeated correctly (i.e., 0–100 percent). In the second type, known as an adaptive procedure, the speech or noise levels, or both, are adjusted depending on the response of the listener, and the outcomes are reported in terms of signal-to-noise ratio in decibels (dB SNR). This ratio represents the difference between the level of speech and noise that is required for an individual to understand 50 percent of the words or sentences presented during the test. Evidence-based reference standards for dB SNR results have been established through tests of large numbers of people with normal hearing.

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Box 6-1 EXAMPLES OF TESTS DESIGNED TO ASSESS SPEECH RECOGNITION IN NOISE

- **Bamford-Kowal-Bench Speech-in-Noise Test**—(Bench et al., 1979, 2006)
- **Connected Speech Test**—(Cox et al., 1987)
- **Digit Triplet Test/Digits-in-Noise Test**—(Jansen et al., 2010; Smits et al., 2013; Watson et al., 2012)
- **Hearing in Noise Test**—(Nilsson et al., 1994)
- **Listening in Spatialized Noise-Sentences Test**—(Brown et al., 2010; Cameron and Dillon, 2007; Cameron et al., 2011; Glyde et al., 2013)
- **Matrix Sentence Test**—(Kollmeier et al., 2015; Zokoll et al., 2013)
- **Quick Speech-in-Noise Test**—(Killion et al., 2004)
- **Speech-in-Noise Test**—(Killion and Villchur, 1993)
- **Speech Perception in Noise Test**—(Bilger, 1984; Kalikow et al., 1977)
- **Words-in-Noise Test**—(Wilson, 2003, 2011; Wilson and Strouse, 2002; Wilson et al., 2007)

These standards serve as a point of comparison for dB SNR measures for people with hearing loss, and they can provide an assessment of the ability to understand speech in noisy environments.[2] As part of a consultation with a hearing health care professional, these results—along with the pure-tone audiogram, which is a measure of hearing acuity—could provide a more comprehensive assessment of how individuals might function in real-life settings, which are frequently filled with background noise (e.g., restaurants, classrooms, offices with an open design, public transportation, sports arenas, gatherings of friends and family), and how hearing technologies and auditory rehabilitation may be used to improve communication. Although these tests do exist and have been validated in some cases, little is known about how frequently they are employed during hearing assessments and consultations.

The exploration, development, and widespread application of easy-to-understand and real-world tests of hearing loss could provide a basis for moving beyond the current focus on the audiogram. Additionally, a consumer-friendly measure, particularly if it were tied to outcomes of real-world tests, could be used to promote regular hearing assessments for those who have questions about changes in their hearing and would enable

[2] For example, a result of –5 dB SNR indicates that the speech level was 5 dB lower than the noise level in order to correctly identify the words or sentences 50 percent of the time, which is a standard result for an individual with normal hearing. A +5 dB SNR indicates that the speech level had to be 5 dB higher than the noise level in order to achieve the same 50 percent correct score. This dB SNR outcome is considered poorer compared to someone with normal hearing and may be typical of some individuals with hearing loss.

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individuals to more easily monitor changes in their hearing over time, potentially reducing confusion about hearing loss measures and empowering individuals to seek treatment. These types of easy-to-understand tests and measures could also be used to realistically set expectations and demonstrate the effectiveness of hearing aids in more realistic listening environments to individuals and their families so that they can compare them to un-aided hearing in those environments.

Improving Information for Consumer Comparisons

In order for consumers to obtain, process, and understand information relevant to hearing loss treatment options, easy-to-understand, evidence-based information needs to be readily available and presented by health care professionals following a diagnosis of hearing loss. Given the assortment of hearing aids and assistive technologies on the market, the decisions that individuals must make regarding which type of services or product will best meet their needs, preferences, and budgets can be overwhelming, and they are further complicated by marketing materials that do not meet health literacy standards. Currently, there are few independent information sources available to consumers that would allow easy comparisons across hearing aids and hearing assistive technologies. Furthermore, the lack of standardized terminology between manufacturers about the features and capabilities of these technologies makes comparisons even more challenging (see Chapter 4).

Consumer Reports recently issued a consumer's guide to buying hearing aids that offers advice on factors to consider when purchasing a hearing aid. However, the guide does not feature a head-to-head quality comparison across brands, as has been done with other consumer products (*Consumer Reports*, 2015). In an effort to better guide consumer decision making, the Hearing Loss Association of America (HLAA) developed a consumer checklist that provides individuals and their families with questions to ask when purchasing hearing aids (HLAA, 2016c). However, additional efforts are necessary in order to provide consumers with information that is easy to understand, fulfills health literacy requirements, and uses standardized terminology to describe hearing aid features. Consumer information on hearing aids and hearing assistive technologies should be made available through independent websites and other media. To ensure that consumers have the necessary tools to make informed decisions, websites with this information should include the following:

- comprehensive descriptions of the full range of hearing aids and hearing assistive technologies available and their features, including connectivity options and requirements; and

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- comparative data on technical traits and differences, clinical traits and performance variations, and practical traits, such as variations in features, connectivity, and costs.

Empowering Individuals and Families through Education and Support

The path toward the recognition of hearing loss and the seeking of treatment can be influenced by numerous factors and will vary from one person to the next. Still, that path will often follow the transtheoretical model, also known as the stages-of-change model (see Figure 6-2). Since its development in the 1980s, the transtheoretical model has been applied to numerous public health concerns including smoking cessation, substance use, weight loss and obesity, cancer screening, HIV/AIDs testing, and medication compliance, and it has also been applied in the hearing loss literature (e.g., Laplante-Lévesque et al., 2012b, 2013, 2015; Ng and Loke, 2015; Saunders et al., 2012). Ng and Loke (2015) hypothesized that factors such

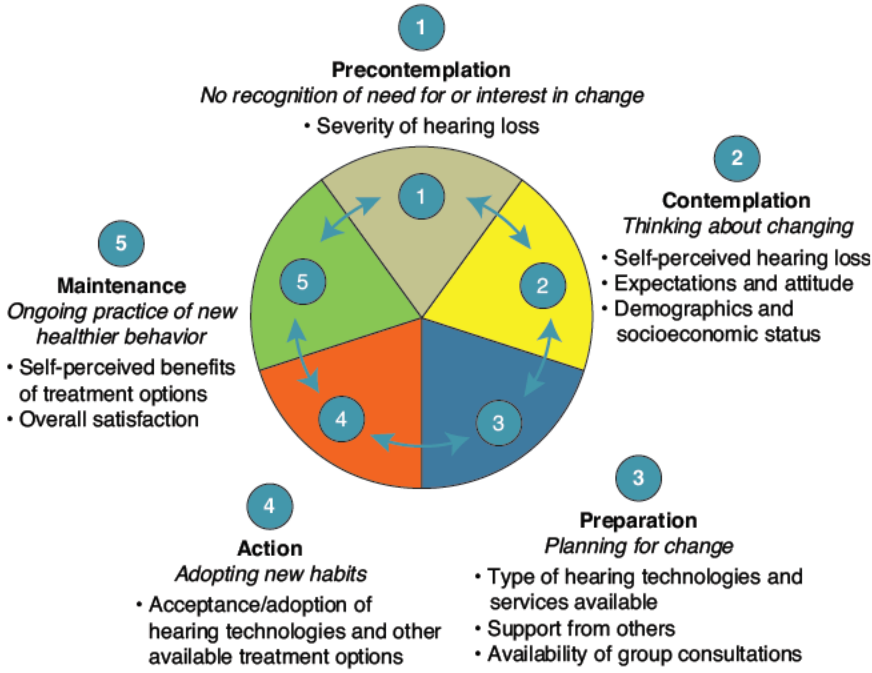

FIGURE 6-2 Transtheoretical model of behavior change.
SOURCES: Adapted from Ng and Loke, 2015, and Prochaska and Di Clemente, 1982. Reprinted with permission from Taylor and Francis, Ltd. Copyright British Society of Audiology; International Society of Audiology; Nordic Audiological Society.

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as self-perception of severity of hearing loss, expectations about hearing aid efficacy, the types of hearing aids that are available, support from others, and the availability of group consultations may all contribute to how an individual advances through the stages of the transtheoretical model.

During the first stage, which can last up to approximately a decade, an individual begins to recognize and may admit to age-related hearing loss (precontemplation stage) (Davis et al., 2007). Even after a hearing loss is first recognized, it may take another period of time for that individual to seek assessment, diagnosis, and treatment (contemplation and preparation stages). Although the stages are somewhat fluid, the contemplation stage typically entails the individual confirming that the hearing loss exists, that it has an impact on everyday life, and that some action needs to be taken. It is also the phase in which the individual begins to consider possible actions and treatments options. During the preparation phase, the individual becomes poised to take action (e.g., talking more openly about the hearing loss with others, researching assessment and treatment options, making the first appointment). Active steps toward seeking assessment and diagnosis, as well as adopting a treatment option, represent the action phase. Following a diagnosis, some individuals may begin to wear hearing aids, use other assistive technologies, or participate in peer-support groups (maintenance phase), while others may choose not to take action (returning to the precontemplation and contemplation stages). Still others may decide not to use or maintain a hearing aid after it has been purchased (a breakdown in the action and maintenance stages).

The transtheroetical model exists within the broader social-ecological model that is described above and in Chapter 1. Numerous factors, external and internal, can influence an individual's progression or regression through the five stages of the transtheoretical model. As described above, the attitudes and beliefs of the individuals and the support of family and friends play a role in an individual's ability to recognize the problem, seek professional assistance, and use hearing aids and other technologies and services. Additionally, health care professionals, advocacy organizations, and the availability of community-based resources can also affect progress, both directly and indirectly. The specific individual needs, environment (e.g., living or working in a noisy environment rather than a quiet one), and preferences of the person will also affect progression through the model. There are times when an individual may be ready to take action but cannot because of a lack of resources or support at the health care system or community levels—challenges that are directly related to accessibility and affordability. Therefore, the committee reiterates the need for solutions at all levels of the social-ecological model that will in turn empower individuals to progress through the stages of change represented by the transtheoretical model and will ensure that care and support are readily available.

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The committee believes that awareness, education, and community-based support are central factors in overcoming barriers that prevent people with hearing loss from getting the care and services that they need. The following sections explore the role of community-based education and support programs, advocacy organizations, and the Internet in educating, supporting, and empowering people with hearing loss as they move through the stages of the transtheoretical model. A subsequent section in this chapter will describe other aspects of community—work environments and the built environment—that can benefit and support people with hearing loss. (See below and Chapter 3 for the role of the health care community.) Chapter 4 and other sections throughout the report have described other mechanisms for empowering individuals to take a more active role in identifying and managing their hearing loss (e.g., mobile applications; over-the-counter wearable hearing devices; self-fitting hearing aids) with innovations developing in multiple areas.

Community-Based Education and Support

Studies suggest that portions of medical information presented at the time of diagnosis can be misunderstood or quickly forgotten (Kessels, 2003; Martin et al., 1990; Reese and Hnath-Chisolm, 2005). Although written information presented at the time of a diagnosis can be helpful in many ways, information provided in that form may not be sufficient to address the personal adjustment and psychosocial elements of living with hearing loss. In order to effectively meet the needs and preferences of people with hearing loss and their families, education and support should not terminate in the professional office setting; it needs to extend into homes and communities, where it can be available when individuals are ready to absorb and operationalize it. Educational and support resources can take numerous shapes, from formal auditory rehabilitation programs in audiology clinics (see Chapter 3) to informal community-based support groups and self-guided resources provided by advocacy organizations. It is essential that health care professionals, particularly hearing health care professionals, are fully aware of what resources are available in their communities and reliably connect individuals with hearing loss and their families with those resources.

Community-based support resources and peer-support groups dedicated to hearing loss can promote resilience and provide resources for individuals with hearing loss. In recent years, the United Kingdom has increased its emphasis on community-based support services, some of which are specifically designed for hearing loss and may provide good models for supporting individuals and families. In order to respond to some of the growing demands on primary care providers and hospitals, the govern-

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ment of Scotland has set up community-based "sensory support centres" to deliver support services to individuals with hearing or vision loss (Smith et al., 2015a). Services provided include hearing aid fittings, mobility training, the installation of smoke alarm systems and doorbells designed for individuals with hearing loss, the provision of other assistive technologies such as telephones and alarm clocks, and instruction on how to use hearing aids and hearing assistive technologies. A review of one of the support centers in rural Scotland concluded that clients were satisfied with the services and levels of empathy shown in the providers. Additionally, individuals who used the services cited reductions in feelings of isolation and increases in self-confidence, self-esteem, and sense of safety.

In another study from the United Kingdom, Pryce and colleagues (2015) examined the role of volunteers in providing community-based peer support for people with hearing loss. The researchers found that volunteers can be used to bridge the gaps between audiology services and the community. However, the interactions were mostly limited to hearing aid maintenance and troubleshooting (e.g., cleaning, battery changes, re-tubing) and did not extend to psychosocial support and adjustment (Pryce et al., 2015). Despite the limited focus of the interactions described in this study, volunteers could be trained to provide greater support in psychosocial areas. For example, in previous studies (e.g., Brooks and Johnson, 1981; Norman et al., 1994) volunteers were trained to provide pre- and post-fitting counseling in an effort to set expectations, improve satisfaction, and increase the use of hearing aids among first-time hearing aid users. In addition to the use of volunteers for the provision of community-based support, ongoing studies are also investigating the possible role of community health workers in identifying and screening for hearing loss, as well as implementing community-based rehabilitation programs (see Chapters 3 and 5).

Peer-support groups can provide opportunities for individuals to connect with others who have hearing loss in order to share concerns, experiences, and strategies for coping with challenges in daily life, and these groups can foster resilience and restore social identity. The possible benefits and limitations of peer-support groups, including Internet- and phone-based groups, for other health conditions (e.g., cancer, diabetes, mental health) have been widely discussed in the literature, with mixed results (e.g., Campbell et al., 2004; Dale et al., 2012; Galinsky and Schopler, 2013; Griffiths et al., 2012). However, few studies have focused on peer-support groups designed for individuals with hearing loss and their families, and little is known about how prevalent or active such groups are throughout the United States. Many local chapters of HLAA (described below) offer peer-support groups led by trained volunteer leaders. Additionally, some state universities with speech and hearing centers and academic medical centers (e.g., Indiana University, 2016; University of Arizona, 2016) have

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established counseling or support groups, usually led by audiologists, where participants can share experiences and discuss the challenges of living with hearing loss. Cummings and colleagues (2002) reviewed a Web-based peer-support group for individuals and families. The researchers found that participants with less real-world support and less hearing loss were more active within the group, and those who were most active derived the most personal gains. The use of peer-support groups may offer a valuable mechanism for community-based education and support, but further research is needed to establish efficacy and determine best practices.

Advocacy organizations at the national and local levels can also play an important role in supporting those affected by hearing loss. In the United States, HLAA is a national membership and advocacy organization dedicated to improving communication access for people with hearing loss through education, support, and public policy and advocacy work. In addition to working at the national level, the organization has a network of approximately 200 state and local chapters. These chapters organize meetings, provide psychosocial support, make connections among people who have hearing loss, and offer education related to living with hearing loss and assistive services and technologies. Although most states have multiple local chapters, there are 13 states without a state or local chapter,[3] leaving large geographic regions without access to these resources and supports (HLAA, 2016a).

In addition to HLAA, which covers a broad constituency of types of hearing loss, there are organizations that provide support to individuals with more severe hearing loss and deafness, such as the Association of Late-Deafened Adults, the National Association of the Deaf, the American Cochlear Implant Alliance, and TDI (formerly the Telecommunications for the Deaf and Hard of Hearing, Inc.) (ACI Alliance, 2016; ALDA, 2016; NAD, 2016; TDI, 2016). A number of international organizations also are geared toward maximizing independence for people with hearing loss, such as Action on Hearing Loss and Hearing Link in the United Kingdom, Better Hearing Australia, and the Canadian Hard of Hearing Association (Action on Hearing Loss, 2016b; Better Hearing Australia, 2016; CHHA, 2016; Hearing Link, 2016). Although the resources and services offered through advocacy organizations certainly provide value, the reach and efficacy of available resources have not been studied.

As young adults with hearing loss transition from adolescence to adulthood, they may require focused community-based education and support. When they leave secondary school systems, where the Individuals with Disabilities Education Act ensures that they receive an education tailored

[3] Alabama, Alaska, Hawaii, Louisiana, Maine, Mississippi, Montana, Nevada, New Hampshire, North Dakota, South Dakota, West Virginia, and Wyoming.

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to meet their needs, they must advocate for themselves and clearly express their needs, preferences, and rights. For youth with disabilities, including those with hearing loss, reviews of available literature and meta-analysis of data have identified small, but positive associations between specialized education and support (e.g., the development of self-advocacy skills, vocational education, and transition programs) and positive outcomes in employment and higher levels of educational attainment (Haber et al., 2016; Schoffstall et al., 2015; Test et al., 2009). In communities across the United States, vocational rehabilitation counselors can offer a blend of educational and support services for young adults to help them build the skills and knowledge needed to maximize success in workplaces, colleges, and universities (Schoffstall et al., 2015). Some communities and states offer summer programs to assist college-bound students with hearing loss in their transition (e.g., Marion Downs, 2016; RIT, 2016). Additionally, peer-support groups and advocacy organizations can provide community-based resources and play a supportive role to better prepare young adults for managing real-world challenges.

At the other end of the age spectrum, older adults may also need specialized education and support. Beyond the community-based education and support resources that are specific to hearing loss, Schneider and colleagues (2010) found that older adults with hearing loss, especially untreated hearing loss or more severe hearing loss, are more likely than those without hearing loss to use community support services, such as Meals on Wheels programs, community-based nursing services, and home care services. This study also found that these individuals had an increased reliance on nonspouse family members and friends for assistance with daily activities, including grocery shopping and household chores. In a 5-year follow-up, individuals with hearing loss—both hearing aid users and those with untreated hearing loss—relied more heavily on community services and nonspouse family or friend support, with increasing use seen by those with greater severity of hearing loss. The participants with hearing loss were more likely to report having low health status, having experienced a fall in the last year and having an impairment related to walking, vision, or cognition (Schneider et al., 2010). These comorbid health concerns combined with the hearing loss may contribute to the increase in demands for the services described in this study. Understanding the community services and support needs of older adults with hearing loss will be beneficial as communities prepare for aging populations that will include large proportions of individuals with hearing loss and other health concerns that could affect independence.

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The Role of the Internet in Educating Individuals and Their Families

When faced with a health concern or a new diagnosis—including hearing loss—many individuals and their families turn to the Internet for information and support (e.g., Bundorf et al., 2006; Couper et al., 2010; Medlock et al., 2015; Purcell and Rainie, 2014). Additionally, health care systems are now employing the Internet as a means to facilitate patient education and self-management of chronic conditions. In the United States, Internet access has increased rapidly since the 1990s, with more than 87 percent of the population using the Internet as of 2014 and almost 75 percent of households having high-speed Internet as of 2013 (File and Ryan, 2014; World Bank, 2016). Despite high rates of overall access, there are still groups with lower levels of access, including older populations, people with lower levels of education and income, those who live in rural areas, and ethnic and racial minority populations, especially black and Hispanic populations (File and Ryan, 2014; Pew Research Center, 2014).

The methodologies used to study Internet and computer use among individuals with hearing loss vary, as do the findings. For the most part, studies have found that those with hearing loss use the Internet at a rate similar to that of the general public. However, some studies have found higher rates of Internet use among those with hearing loss compared to their age-matched peers without hearing loss or the general public (Barak and Sadovsky, 2008; Henshaw et al., 2012; Thoren et al., 2013). Despite these findings, Henshaw and colleagues (2012) found that Internet use among adults between the ages of 50 and 74 years was reduced among individuals with more severe hearing loss compared with those with mild to moderate loss. In another study of older adults with hearing loss ages 55 to 95 years, Moore and colleagues (2015) concluded that increasing age is often associated with lower computer literacy and self-efficacy, a finding that is also reflected in the older adult population in general, which tends to have lower rates of technology adoption and Internet use (Pew Research Center, 2014). All of these findings may change in the coming decades as baby boomers, who tend to be more tech savvy, grow older.

Individuals searching for information on hearing loss on the Internet can get tens of millions of results within fractions of a second. These results have varying degrees of relevance and reliability, and the sheer number can present a challenge in terms of identifying which Web-based resources can be trusted to provide evidence-based information. Health information from government agencies, national advocacy organizations, and health care systems offer a wealth of helpful information. However, reviews of the readability of hearing and hearing loss information on the Internet suggest that consumers would need between 9 and 14 years of education to comprehend the available information, representing a sizable mismatch when compared to average health

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literacy rates in the United States[4] (Laplante-Lévesque and Thoren, 2015; Laplante-Lévesque et al., 2012a). Although readability is a fundamental factor in the comprehension of the information, Laplante-Lévesque and colleagues (2015) noted, "Readability is only one of the many prerequisites for successful . . . understanding, comprehending, and making good use of health information" (p. 287). Additional factors in the comprehension of information include usability, visual design, ease of navigation, searchability, reliability, compatibility with multiple Web browsers and devices, and accessibility. Box 6-2 presents examples of Internet resources on hearing loss.

Regardless of the type of information and the mechanism by which that information is provided, Internet-based resources must be written and presented at appropriate levels of literacy and usability to maximize comprehension by the target audiences. Health literacy and usability are imperative design factors, especially when the target audiences are older adults with hearing loss and other populations that may have limited Internet access and computer literacy. Since an emphasis on health communications was announced as part of Healthy People 2010, the Department of Health and Human Services (HHS) and its agencies have released numerous freely available resources to encourage and facilitate public and private entities, such as advocacy organizations, nonprofit organizations, and health care systems, to simplify Internet-based health information. For example,

- Usability.gov is an HHS-sponsored website that provides resources and best practices for Web developers to make websites more accessible and user friendly (HHS, 2016b).
- HHS has published an online guide to health literacy and simplifying content to better meet the needs of the public (HHS, 2016a).
- The National Institutes of Health (NIH) Office of Communications & Public Liaison has a webpage devoted to clear communication that features information on health literacy and cultural respect (NIH, 2016).
- The Centers for Disease Control and Prevention (CDC) has a webpage and numerous resources devoted to health literacy and has created the Clear Communications Index, which is a tool to help plan and assess materials and resources that will be used for public communication purposes (CDC, 2015b).

The hearing loss community and advocacy organizations need to evaluate Internet-based resources, take advantage of available government resources,

[4] Studies suggest that approximately one-third of the U.S. population has low levels of health literacy defined as basic and below basic (e.g., the ability to read and comprehend basic medical instructions) (HHS, 2008; NCES, 2006).

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Box 6-2 EXAMPLES OF INTERNET RESOURCES FOR ADULTS WITH HEARING LOSS

Consumer and Patient Organizations:

- Action on Hearing Loss (www.actiononhearingloss.org.uk)
- American Cochlear Implant Alliance (www.acialliance.org)
- Association of Late-Deafened Adults (www.alda.org)
- Better Hearing Australia (www.betterhearingaustralia.org.au)
- Canadian Hard of Hearing Association (www.chha.ca/chha)
- Hearing Link (www.hearinglink.org)
- Hearing Loss Association of America (www.hearingloss.org)
- National Association of the Deaf (www.nad.org)
- TDI (formerly Telecommunications for the Deaf and Hard of Hearing) (www.tdiforaccess.org)

U.S. Federal Government Agencies:

- Americans with Disabilities Act information (www.ada.gov)
- Centers for Disease Control and Prevention (resources about noise-induced hearing loss) (www.cdc.gov/niosh/topics/noise)
- Department of Defense Hearing Center of Excellence (www.hearing.health.mil)
- Department of Education Rehabilitation Services Administration (www.rsa.ed.gov)
- Department of Veterans Affairs (www.research.va.gov/topics/hearing.cfm)
- Disability.gov (www.disability.gov)—multiple agencies
- Federal Communications Commission (www.fcc.gov/consumer-and-governmental-affairs/about-bureau/disability-rights-office/general/disabilities)
- Federal Trade Commission (www.consumer.ftc.gov/articles/0168-buying-hearing-aid)

and implement strategies to optimize the information and educational materials on hearing and hearing loss for individuals and their families. Additionally, health care professionals need to be aware of the available online information sources and resources, and they should discuss the wide range of resources with their patients to ensure that people with hearing loss and their families are directed to reliable, evidenced-based information.

THE ROLE OF COMMUNITIES

Individuals and families are intrinsically woven into their communities, as is indicated in the social-ecological model. Communities are complex social structures where all people live, work, socialize, learn, and play. Most of the topics discussed throughout this chapter touch on community

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- Food and Drug Administration (www.fda.gov/MedicalDevices/ProductsandMedicalProcedures/HomeHealthandConsumer/ConsumerProducts/HearingAids/default.htm)
- National Institute on Aging (www.nia.nih.gov/health/publication/hearing-loss)
- National Institute on Deafness and Other Communication Disorders (www.nidcd.nih.gov)
- National Institute on Disability, Independent Living, and Rehabilitation Research (www.acl.gov/programs/NIDILRR)

Professional Associations:

- Academy of Doctors of Audiology (www.audiologist.org/patient-resources)
- American Academy of Audiology (www.howsyourhearing.org)
- American Academy of Otolaryngology-Head & Neck Surgery (www.entnet.org/content/patient-health)
- American Speech–Language–Hearing Association (www.asha.org/public/hearing/hearing-loss)
- International Hearing Society (www.ihsinfo.org/IhsV2/Hearing_Health_Info/Index.cfm)

Additional Resources:

- AARP (www.aarp.org/health/conditions-treatments/hearing-resource-center)
- Consumer Reports Hearing Aids Guide (www.consumerreports.org/cro/hearing-aids/buying-guide.htm)
- Mayo Clinic (www.mayoclinic.org/diseases-conditions/hearing-loss/basics/definition/con-20027684)
- World Health Organization (www.who.int/mediacentre/factsheets/fs300/en)

in one way or another. This section focuses on workplace environments and the built environment. Although these factors are vital to supporting and encouraging participation for people with hearing loss, these environments are not always designed specifically for people with hearing loss and may require some form of modification or education to fully support people with hearing loss. This section also provides a high-level overview of the protections and opportunities that are offered by the Americans with Disabilities Act (ADA), which was signed into law in 1990 and revised in 2009.

Employers and the Workplace

Communication is necessary in the vast majority of jobs and career paths, whether it involves communication with a client or a coworker in a

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conference room or it ensures an employee's safety in a factory or industrial setting. In recent decades the profile of workplaces and workers has changed; more jobs than ever are found in office settings, and individuals are remaining in the workforce longer, increasing the likelihood that hearing loss could affect interactions and relationships with coworkers, job performance, promotion potential, and overall employment opportunities at some point in workers' careers (Munro et al., 2013). Despite the enactment and revision of the ADA, which provides a series of protections for employees (see Box 6-3), individuals with hearing loss may continue to experience stigma, unfavorable attitudes, employment disadvantages, and overt or perceived discrimination in the workplace. For example, among 174,610 allegations of discrimination filed with the U.S. Equal Employment Opportunity Commission under Title I of the ADA between 1992 and 2003, Bowe and colleagues (2005) found that almost 9,000 complaints had been filed by individuals with some degree of hearing loss. Additionally, a study by McMahon and colleagues (2008) concluded that of the discrimination claims they studied, hearing was the second most cited reason—after back problems—for claims related to hiring decisions.

Box 6-3 HIGHLIGHTS OF TITLE I OF THE AMERICANS WITH DISABILITIES ACT[a]

- Employers with 15 or more employees may not discriminate against individuals with actual or perceived disabilities with regard to the following:
  - job applications (e.g., qualification standards, selection criteria);
  - hiring procedures (e.g., testing, screening);
  - promotion or advancement;
  - compensation (e.g., pay, benefits);
  - training opportunities;
  - discharge or dismissal; or
  - other employment terms, conditions, or privileges.

- Employers with 15 or more employees are required to make reasonable accommodations for employees with disabilities, which may include the following:
  - job restructuring;
  - modified work schedules;
  - reassignment;
  - acquisition or modification of equipment or devices;
  - adjustment or modifications of examinations, training materials or policies;
  - availability of readers or interpreters; and
  - other similar accommodations.

[a]Americans with Disabilities Act of 1990, Public Law 101-336, 101st Cong. (July 26, 1990).

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People with hearing loss can experience a variety of challenges in terms of employment and the workplace, including obstacles related to finding employment, career development, promotion and career advancement, equitable compensation, and the balance between job demands and a sense of control or confidence in managing work-related situations (Southall et al., 2010, 2011; Tye-Murray et al., 2009). When they occur, these challenges may reflect the presence of stigma in the workplace. In interviews conducted by Southall and colleagues (2010), participants described instances of being compelled to give up responsibilities or duties; being demoted, terminated, or forced to seek disability payments through Social Security; and being pressured or bullied by coworkers and supervisors. For many individuals, these experiences created stress and isolation, reinforced stigma, and undermined self-confidence (Southall et al., 2010).

The perceived attitudes and beliefs of coworkers, supervisors, and employers have been cited as reasons for employees not disclosing their hearing loss, not seeking accommodations in the workplace, and delaying assessment and treatment for hearing loss (Clements, 2015; Kochkin, 2007a; Southall et al., 2011). However, as described earlier, not everyone perceives or responds to stigma in the same way. The majority of participants (70 percent) in focus groups[5] conducted by Tye-Murray and colleagues (2009) had disclosed their hearing loss in the workplace, and many described positive interactions with and support from coworkers, supervisors, and employers. The participants in this study maintained positive, "can-do" attitudes; had used effective coping mechanisms; developed the resolve and stamina to overcome barriers; and noted that hearing loss was becoming more commonplace in professional employment settings because of the aging baby boomer generation (Tye-Murray et al., 2009). In part, these employment experiences can be attributed to supportive relationships and environments—beneficial factors that are often associated with positive outcomes and resilience. These positive experiences are encouraging and lead to the question of how to ensure these types of experiences become the norm in workplaces across the United States.

Although Tye-Murray and colleagues (2009) suggest that stigma associated with hearing loss in the workplace has declined, perceived stigma is still a concern. Further reducing stigma, fostering a supportive environment in the workplace, and developing coping mechanisms and resilience among employees with hearing loss are crucial steps to eliminating discrimination, promoting broader support in the workplace, and enabling employees to remain in the workforce longer, if they so choose. These steps are also necessary to encourage and empower employees to see the value in seeking

[5] Focus groups included 48 individuals with confirmed hearing loss—27 men and 21 women, ages 29–79 years (average 61).

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assessment and treatment for possible hearing loss rather than hiding it and possibly allowing it to interfere with performance, employment, and career opportunities. Some auditory rehabilitation programs (see Chapter 3) include instruction on assertiveness and communication strategies, which can be beneficially applied in the workplace. A group-based rehabilitation program evaluated by Habanec and Kelly-Campbell (2015) encouraged people with hearing loss to be assertive in the workplace in order to ensure that their communication needs were being met, that effective communication strategies with the employer were being used, and that employees were aware of their rights and employer obligations under the ADA.

Additionally, people with hearing loss need to receive information from health care and hearing health care professionals as well as from employers about the accommodations that are available, the protections that are afforded by the ADA, and the resources that are available through the U.S. Equal Employment Opportunity Commission in the event that workplace discrimination does occur (e.g., EEOC, 2015). This type of information is also important for young adults as they transition from an academic setting to join the workforce and begin to navigate various workplaces and career paths for the first time. On the employer side, human resources professionals and hiring supervisors need to have information on what are reasonable accommodations for hearing loss and how to acquire them; and tools for interviewing, hiring, working with, and supporting people who have hearing loss.

Built Environment and Universal Design

The acoustic profile of community and personal spaces in which people live, work, learn, and gather determines the atmosphere and functionality of those locations just as much as other aspects of structure and design. For people with hearing loss, the availability of hearing aids and hearing assistive technologies, acoustics, and the connections to other communications systems (see Chapter 4) may mean the difference between participating in conversations and engaging with their surroundings and feeling isolated. For the purposes of this report, the built environment refers to public and private spaces within a community that can be designed or altered to improve the experience for people with hearing loss through enhanced acoustics and accessibility. The committee believes that the built environment is an intrinsic part of addressing hearing loss and one that represents a major opportunity where solutions at many levels of the social-ecological model can be used to further empower people with hearing loss and enhance listening conditions for everyone. This is a broad topic with a number of ongoing efforts.

In addition to providing individuals with hearing loss meaningful protections and accommodations within the workplace, the ADA also includes

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provisions for the built environment. Title II (local, state, and federal government facilities) and Title III (places of public accommodation and commercial facilities[6]) of the ADA were designed to make public spaces more accessible for people with disabilities, including individuals with hearing loss. Additionally, section 504 of the Rehabilitation Act of 1973, and its subsequent amendments, requires that programs that receive federal funding provide accommodations in order to ensure effective communication. These laws emphasize that communication with individuals who have a disability must be equivalent to those without a disability, and thus auxiliary aids or services should be provided whenever requested and feasible. Examples of communication services and technologies for individuals with hearing loss may include the following:

- written materials, exchange of written notes, or the availability of note takers;
- real-time, computer-aided transcription;
- amplifiers and hearing aid–compatible telephones;
- open and closed captioning, as well as closed captioning decoders;
- various telecommunication systems (e.g., captioned telephones, video phones);
- videotext screens and displays;
- secondary auditory programs; and
- other assistive technologies or systems.

When a government facility, school, or business is unable to provide a requested aid or service because of financial limitations, the law requires that other forms of assisted communication be offered to ensure that the person with hearing loss understands what is being said and can communicate effectively (ADA National Network, 2014). The committee emphasizes the importance of these laws in ensuring that all students with hearing loss (from kindergarten through post-doctoral programs) regardless of race/ethnicity, socioeconomic status, or geographic location have access to communication aids and assistive services in schools and universities, thus giving them an equal opportunity to learn; to actively engage with their peers, teachers, and professors; and to thrive.

In 2010 the Department of Justice released revisions to ADA regulations that included the ADA Standards for Accessible Design. The standards outline specific minimum requirements that are enforceable for newly designed

[6]Examples of places of accommodation include any place where the public may conduct business or gather: restaurants, hotels, movie theaters, places of worship, bakeries, shopping malls, stores of all types, museums, libraries, public transportation hubs, zoos, health clubs, hospitals, schools, homeless shelters, senior citizen centers, etc.

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or renovated public spaces as defined under titles II and III (DOJ, 2016). For example, sections 219 and 706 of the document provide standards and requirements for the implementation of assistive systems, and sections 215 and 702 describe requirements for fire alarm systems (DOJ, 2010). Acoustic design in the built environment has been a point of consideration for advocacy efforts and guideline development for decades with mixed results. For example, in 1993 the U.S. Architectural and Transportation Barriers Compliance Board—now called the U.S. Access Board—commissioned a report to provide guidelines for designated quiet areas in restaurants. The purpose of the quiet areas was to allow people with hearing loss to enjoy the experience of dining out while more easily interacting and communicating with other people around them.[7] However, these guidelines have not been endorsed or implemented broadly. The availability of design standards and guidelines is a valuable step to strengthening the built environment and ensuring equitable accessibility. However, it is the consistent prioritization, application, and enforcement of evidence-based standards and guidelines that is needed in order to make real differences in the coming decades. Box 6-4 provides additional examples of current design standards and guidelines that are relevant to creating favorable acoustic environments and greater accessibility for people with hearing loss.

As discussed in Chapter 4, hearing assistive technologies include systems that employ transmitters, receivers, and coupling technologies to connect listeners to the source of sound via technologies such as wired devices (e.g., receivers with headsets), induction loops, or infrared or radio technologies (DOJ, 2010). These systems may also include technologies such as Bluetooth and will likely encompass emerging technologies as they become available. The installation of induction loops (also referred to as hearing loops) are an example of one type of hearing assistive technology that can be integrated into the built environment and has been described in various news outlets recently (e.g., National Public Radio, *The New York Times*, and *Scientific American*) (Hearingloop.org, 2015). As described in Chapter 4, when installed within a public space, induction loops can be paired with hearing aids and cochlear implants that have embedded telecoil technology to directly receive the transmission from the sound system. While this pairing requirement may be a limiting factor for those without hearing aids, hearing loops have been installed in a variety of public spaces, including theaters, museums, airports, sports arenas, classrooms and audi-

[7] Personal communication. Email to staff for the Committee on Accessible and Affordable Hearing Health Care for Adults from Daniel Fink, Quiet Areas in Restaurants. Final report to U.S. Architectural and Trasportation Barriers Compliance Board by R. Moulder, 1993. Received January 20, 2016. Available by request from the National Academies of Sciences, Engineering, and Medicine Public Access Records Office. For more information, email PARO@nas.edu.

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Box 6-4 EXAMPLES OF DESIGN STANDARDS AND GUIDELINES FOR ENHANCING THE BUILT ENVIRONMENT

- Department of Justice's ***ADA Standards for Accessible Design*** "set[s] minimum requirements—both scoping and technical—for newly designed and constructed or altered State and local government facilities, public accommodations, and commercial facilities to be readily accessible to and usable by individuals with disabilities" (DOJ, 2010, p. 1).
- American National Standards Institute's ***American National Standard Acoustical Performance Criteria, Design Requirements, and Guidelines for Schools Part 1 and Part 2*** are available to guide the design of classroom settings, both permanent and temporary (part 1 and part 2, respectively), that ensure optimal speech comprehension for students.
- ASTM International's ***Standard Guide for Open Office Acoustics and Applicable ASTM Standards*** provides guidance for architects, engineers, and office managers who are interested in enhancing the acoustic environment and privacy in an open office setting.
- The Ceilings & Interior Systems Construction Association's ***Acoustics in Healthcare Environments*** is a white paper that provides design strategies and guidance to improve patient experience, privacy, and safety in health care settings.

toriums, places of worship, and other large venues. However, the use of this technology is not limited to large public venues, as it can also be installed in private homes and on other smaller scales (Shaw, 2012). Current efforts to further expand the use of hearing loops in public spaces include installation in subway booths by the New York City Metropolitan Transit Authority and in taxicabs, post offices, and banks in the United Kingdom (Myers, 2010; Shaw, 2012). Further efforts to provide hearing assistive technologies and ensure compatibility among assistive technologies and across other communications technologies (e.g., phone, emergency alert systems) are critical (see Chapter 4).

In addition to the availability of hearing assistive technologies and services, the built environment can also be augmented to permit an optimal acoustic environment that benefits all individuals, regardless of hearing ability. Universal design is a concept that calls for environments and products to be designed so that they are "usable by all people to the greatest extent possible" (Mace et al., 1991, p. 2). The researchers who conceived universal design believed that the solutions should be of little or no cost and should simplify everyone's lives. Sidewalk cutouts are a prime example of a universal design element: There is little or no additional cost associated with the cutouts, and they benefit people who use wheelchairs, scooters, walkers, and canes, as well as people pulling luggage, pushing strollers, riding bikes,

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or using wheeled dollies. In terms of improving the acoustic environment to benefit those with hearing loss and the general public, universal design elements could include installing noise-dampening panels, insulation, floor covering/carpet, and plush furnishings; diminishing excessive background noise whenever possible; optimizing reverberations; and configuring floor plans and workspaces to enhance acoustics (CHHA, 2008). The committee urges the development, evaluation, and implementation of design elements that can optimize acoustics in public spaces whenever possible, with an emphasis on universal design solutions. Additional work in the arena of universal design and the built environment in terms of ameliorating the effects of hearing loss is also needed.

PUBLIC EDUCATION AND AWARENESS

Society is the all-encompassing level of the social-ecological model within which all other activities occur. At this level, laws, regulations, policies, culture, and social norms shape solutions that are implemented at community and organizational levels, which then affect individuals with hearing loss, their families, and their social networks. The public, broadly speaking, also resides at this level. This section will explore public attitudes toward and understanding of hearing loss. It will consider how the media, public awareness campaigns, and advocacy efforts can be used to better educate the public, thus building a more supportive society and public experience for people with hearing loss. Although large-scale, nationwide initiatives that are designed to influence the public can be expensive; time consuming; requiring of multipoint stakeholder partnerships; and challenging to plan, execute, and measure, the solutions at this level arguably offer the potential for the largest impact and benefit to the most people.

Public Attitudes and Understanding

Changing public attitudes and understanding represents another opportunity to reduce the stigma that individuals with hearing loss experience. Although a few studies and targeted surveys have reported a positive evolution in public attitudes (described below), some literature suggests that individuals with hearing loss can be deemed by others as being old, socially inept, less friendly, cognitively impaired, or poor communication partners (Clements, 2015; Erler and Garstecki, 2002; Wallhagen, 2010). For example, when people respond inappropriately to verbal cues or do not respond at all, those people may be mistakenly perceived as being confused or being disengaged from or disinterested in their surroundings, when in fact the person did not hear the cue. Although negative public attitudes and stigma are serious concerns and can have a strong impact on

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the attitudes, beliefs, and decision making of people with hearing loss, interviews of people with hearing loss and targeted surveys suggest that public perceptions might be improving (AARP and ASHA, 2011; Rauterkus and Palmer, 2014; Wallhagen, 2010). This shift may be a result of an increased awareness and acceptance of disabilities in recent decades; the aging of the baby boomer generation, which is experiencing and openly discussing chronic, age-related health conditions and focusing on living well; younger generations that tend to have more tolerant views of individual differences; and advances in technology that provide individuals with new hearing and communication options.

Interviews of individuals with hearing loss suggest that there is an overall perceived lack of awareness and understanding about hearing loss among the general public (Southall et al., 2010). Surveys focused on noise-induced hearing loss shed some light on knowledge and understanding of this specific type of hearing loss. In a survey of university students and faculty, Shah and colleagues (2009) found that a large majority of participants (85 percent) expressed some concern about age-related hearing loss, and almost three-quarters (73 percent) were interested in learning about opportunities to prevent noise-induced hearing loss. However, participants cited a limited availability of information on hearing loss and prevention (Shah et al., 2009). Despite the possible gaps in available information, college students were generally knowledgeable about noise-induced hearing loss, with most participants correctly stating that this type of hearing loss could not be cured and was not reversible (Crandell et al., 2004; Shah et al., 2009). However, Crandell and colleagues (2004) found that young African American respondents were less likely to correctly answer questions about the reversibility of noise-induced hearing loss and symptoms related to excessively loud, potentially damaging noise. In considering these findings, the authors also noted that young African Americans were also less likely to report exposure to activities associated with risks for noise-induced hearing loss (e.g., motorcycle riding, racing cars, and listening to portable music devices).

The public also seems to be unaware of the difficulties and challenges that people living with hearing loss experience on a daily basis (Southall et al., 2010). Interviews focused on hearing loss in the workplace indicate that people do not necessarily know how to respond to or communicate with individuals who have hearing loss. Another commonly cited concern from these interviews was that colleagues tend to forget about an individual's hearing loss and need to be reminded by the person with hearing loss. Table 6-2 lists basic communication strategies that can be used by friends, family members, coworkers, and the public to enhance communication with individuals who have hearing loss. Although many of these strategies target general interpersonal communication skills, they also offer the possibility of increasing comprehension and reducing frustrations.

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TABLE 6-2
Examples of Communication Strategies

Strategy	Rationale
Speak face-to-face	When the speaker's face is turned toward the listener, there is improved signal-to-noise ratio, and the listener uses facial cues to fill in the gaps that he/she may not have heard.
Reduce background noise	The ability to understand speech in the presence of background noise or distractors (e.g., television or restaurant noise) declines as a function of age, even for older adults without hearing loss.
Speak slower, instead of louder	When someone speaks loudly or shouts, it actually distorts the speech, often making it more difficult to understand. Also, shouting can make both the speaker and the listener more stressed.
State the topic	By making the topic of conversation clear at the beginning, the listener can more effectively use context cues to fill in the gaps.
Rephrase the statement	Repeating oneself becomes frustrating for the speaker and the listener. When the question or statement is rephrased, the listener has more context cues to fill in the gaps. In addition, some words are actually easier to hear, depending on the person's hearing loss and the frequencies of the sounds in the word.

SOURCES: Adapted from Mamo et al. (2016) and Marrone et al. (2012). Reprinted with permission from ASHA. Copyright 2012. Reprinted with permission from Elsevier. Copyright 2016.

During the committee's third workshop, Zina Jawadi and Patrick Holkins, speakers for the panel that focused on the young adult perspective, described hearing loss as an invisible disability that is often misunderstood, noting that moderate hearing loss is especially difficult for the public to understand in comparison to deafness (Holkins, 2015; Jawadi, 2015). A general lack of understanding by the public can contribute to negative attitudes and can lead to stigma, which highlights the importance of public education efforts and campaigns that can reach diverse audiences through a variety of mechanisms.

The Role of the Media

Very little academic research exists on how hearing loss is represented in the media. Anecdotal experience and indirect references in the literature suggest that hearing loss is often portrayed as something comical in entertainment media (Foss, 2014; Noble, 2009). Cartoons, comic strips, television shows, and movies have depicted hearing loss using images that commonly involve an older person cupping his or her hand around an ear or using an ear trumpet, a person who completely misunderstands a conversation and responds inappropriately, or a person shouting at someone

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with some degree of hearing loss. The media uses these types of images as a comedic tool, in part, because most people have experienced amusing miscommunications due to a misheard statement, regardless of hearing loss; therefore, the audience can relate to these images to some extent. However, this type of comedy is not only insensitive to people who live with hearing loss, but it also reinforces public misperceptions and stigma associated with hearing loss.

A review of 276 fictional television shows originally broadcast between 1987 and 2013 examined how hearing loss has been portrayed in the media and why stigma has been perpetuated (Foss, 2014). The review focused on complete, start-to-finish storylines that featured characters who experienced hearing loss, most of which was sudden and due to an acute cause (e.g., foreign object, explosion, infection, magic). Therefore, this review did not capture all scenes or all images of hearing loss. The review found instances of hearing loss in 11 television shows over a total of 47 episodes. The characters that experienced the hearing loss were typically young, attractive professionals, and in the majority of cases (8 out of 11) the hearing loss was short-term and remedied by the end of the episode. A total of three characters experienced permanent hearing loss, with the loss being age-related in only one case. In all three cases, the character with permanent hearing loss adopted hearing aids, but there were no challenges with using the devices, there were no other accommodations or support needed, and the individual's hearing was restored completely by the hearing aid—a combination of outcomes that is not very realistic. Despite many inaccuracies in the storylines studied, most characters denied the presence of their hearing loss and tried to hide it from their coworkers and friends—a reaction that is common in real life (Foss, 2014).

As discussed in the IOM report on the public health dimensions of epilepsy, a highly stigmatized health condition, the media portrayal of health concerns is an important tool for educating large audiences, increasing awareness, and possibly reducing stigma (IOM, 2012). In 2005 more than half of the respondents to the Porter Novelli HealthStyles survey reported that they learned new information about a health condition or disease through television dramas or comedies (CDC, 2005). Box 6-5 summarizes lessons that were highlighted in the IOM epilepsy report and the lack of storylines featuring hearing loss, especially age-related hearing loss, combined with the high prevalence of and overall misperceptions about hearing loss indicate that there is an opportunity for action. As concluded in the CDC's analysis of the HealthStyles survey, "TV dramas/comedies serve a critical health education function when they provide accurate, timely information about disease, injury and disability in storylines for the vast majority of U.S. residents who watch at least a few times a month, and especially for 64% of the population . . . who are regular viewers watching

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Box 6-5 LESSONS TO PROMOTE THE DEVELOPMENT AND USE OF HEARING LOSS STORYLINES[a]

- Principles from social-cognitive theory, or social modeling, suggest that audiences learn from individuals with whom they identify and that they are likely to emulate behavior that has positive outcomes and avoid behavior with negative outcomes (Bandura, 1986).
- Careful evaluation and viewer surveys are required to measure the success of story lines and to identify best practices for future efforts.
- Clear, concise, accurate, and compelling information is necessary to inform writers and producers.
- A variety of resources, such as websites, social media, and toll-free numbers, offered in connection with the story lines provide viewers with multiple access points to valuable information, as well as a way to track audience response.
- Public–private partnerships facilitate and expand advocacy and outreach efforts and can play an important role in activities, such as expert consultations on story lines and development of informational resources.
- Existing initiatives, which include a variety of educational opportunities and awards that typically target journalists and entertainment media writers and producers, can be leveraged in order to inform and engage writers whose stories and interviews will inform and educate the public.

[a]Text excerpted from the 2012 Institute of Medicine report *Epilepsy Across the Spectrum: Promoting Health and Understanding*, pp. 393–396.

two or more times a week" (CDC, 2005, p. 3). Furthermore, a national study of health literacy found that individuals with lower health literacy are more likely to obtain health-related information from radio and television programs than individuals with higher levels of health literacy, who tend to seek information from written sources such as the Internet, newspapers, and magazines (Kutner et al., 2006).

Such fictional portrayals of hearing loss are not the only media opportunity for educating the public about hearing loss; the news media can also play a role. One type of hearing loss that has been frequently discussed in the news media is noise-induced hearing loss (see Chapter 2). Concerns about the risks of hearing loss caused by loud noise became more prevalent with the widespread use of portable music devices starting in the 1980s (Peng et al., 2007; Punch et al., 2011). As researchers considered the effects of portable music devices on hearing, the news media began to highlight the risks of and prevention strategies for noise-induced hearing loss (NIDCD, 2015b). Although the available evidence regarding the link between portable music devices and noise-induced hearing loss is mixed and somewhat controversial, most experts agree that young adults should be educated on the topic and consider the intensity and duration of listening (Punch

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et al., 2011). In surveys of young adults through the MTV.com website, Quintanilla-Dieck and colleagues (2009) found that young people identified popular media as the most informative resource available for information on hearing loss and the prevention of noise-induced hearing loss, which highlights the opportunities for the media to reach various audiences. Social media efforts, often applied in association with public education campaigns (described below), may also contribute to educating the public, especially young adults, about hearing loss—both noise-induced and age-related hearing loss. The use and efficacy of social media to educate the public and increase awareness warrants additional investigation.

Marketing and Its Role in Educating the Public

Interviews and surveys of people with hearing loss suggest that many of them view hearing aids as a visual reminder of the stigma and negative attitudes and feelings about hearing loss that are described above (Dawes et al., 2014; Kochkin, 2007b; Laplante-Lévesque et al., 2010; Southall et al., 2011), and factors related to vanity and overall aesthetics are commonly cited as reasons why people choose not to adopt or use hearing aids (McCormack and Fortnum, 2013; Wallhagen, 2010). To combat these concerns, hearing aid manufacturers and marketers have focused on developing and advertising smaller, easy-to-hide hearing aids over the last three decades (Clements, 2015). Although advances in technology and size reductions may be credited for prompting individuals who are sensitive about the size and appearance of hearing aids to purchase and use them, the emphasis on these features in advertising—another form of media—may also be responsible for reinforcing negative public attitudes and stigma associated with hearing aids by implying that a small hearing aid is more desirable because it enables the wearer to hide his or her hearing loss (Wallhagen, 2010). This attitude can also magnify the perception of stigma for those for whom a small hearing aid may be challenging to use and thus a larger hearing aid is more appropriate (e.g., an individual who has trouble manipulating very small objects). Hearing aid advertisements commonly appear on television, in print media (e.g., magazines, newspapers), and in audiology clinics and physician offices, thus reaching—and possibly influencing—large segments of the population.

To better serve people with hearing loss, reduce stigma, and educate the public, the marketing for hearing aids and any hearing assistive technology should focus on individuals finding a solution that is effective, meets their needs, and helps them reconnect with family and friends, become more socially engaged, and continue to participate in their communities, rather than highlighting the ease with which an individual can hide his or her use of hearing aids or hearing assistive technologies. Kochkin and Rogin (2000)

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call for a shift in messaging that moves away from hiding the hearing aid and away from thinking of it as device to be sold and toward a message that technology can change people's lives, enhance relationships and intimacy, and reduce stress.

Public Education and Advocacy Efforts

Education is one of the most effective mechanisms available to combat misperceptions and stigma and should be used to help address these types of challenges with hearing loss. Public awareness campaigns and other public education efforts have been used successfully in the public health sphere for decades. In many cases, campaigns focus on educating the public and promoting behavior change (e.g., smoking cessation, exercise, and physical fitness), while others are developed to increase awareness and encourage a clearly defined, achievable action (e.g., taking part in cancer screening or HIV/AIDs testing, stopping drunk driving, using seat belts) or are designed to increase public awareness, correct misperceptions, encourage normalization, and reduce the stigma associated with a specific health condition (e.g., mental health conditions, disabilities, or epilepsy).

The most effective public awareness campaigns are usually large scale and multifaceted, have a specific goal, and involve a range of outreach activities, stakeholders and sponsors, educational materials, messaging, and media platforms. Public awareness campaigns may also include lobbying efforts to change laws, regulations, and policies at the local, state, and national levels. However, limitations in resources—for example, funding, time, and expertise—often hinder the development and implementation of large-scale public awareness campaigns. When a public awareness campaign is not feasible, advocacy organizations, government agencies, and other stakeholders often use smaller-scale efforts (e.g., videos, public service announcements, blogs) to educate the public about various public health topics and, in some cases, to reduce stigma.

WISE EARS! is an example of a nationwide public awareness campaign that was designed to educate the public about noise-induced hearing loss and strategies for prevention. The campaign ran from 1999 to 2006 and was jointly sponsored by the National Institute on Deafness and Other Communication Disorders (NIDCD) and the National Institute for Occupational Safety and Health. Nearly 90 public and private organizations were also involved in some capacity (NIDCD, 2015b). The far-reaching campaign was not targeted to a specific audience or age group, but it featured audience-specific materials and outreach activities. For example, the campaign included activity books for elementary school children (grades 3–6) and an interactive web curriculum for middle-school students (grades 7–8). To convey its messages, the campaign used bilingual (English and Spanish)

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multimedia educational materials including factsheets, a website, promotional items, presentations, and other tools. In 2006, NIDCD conducted a two-pronged evaluation of the campaign through an environmental scan of available information about noise-induced hearing loss and informal discussion with campaign collaborators. The evaluation pointed to the need to focus on a specific age range as the target group for the campaign as well as to expand partnerships for this effort (NIDCD, 2015b). The new campaign, It's a Noisy Planet, has a broad partnership (NIDCD, 2015a).

Box 6-6 describes other hearing loss campaigns that have been carried out over the last decade. Many of these efforts, such as WISE EARS! and those described below, have focused on the prevention of noise-induced hearing loss. Unfortunately, most of the campaigns identified by the committee for this report did not include a planned evaluation, or if they did, the results of the evaluations are not publicly available. The lack of an evaluation makes measuring success impossible at this time. It also limits the opportunities to identify lessons learned that could be used to inform plans for future public awareness efforts.

Advocacy organizations also play an important role in educating the public and supporting public education efforts. Action on Hearing Loss, a nonprofit organization started in 1911 in the United Kingdom, has developed and continues to operate several public campaigns covering a variety of topics, such as the need for screening, improving access to health and human services for people with hearing loss, the increased use of subtitles on television, and providing access to lip-reading classes and services. In its campaign efforts, Action on Hearing Loss lobbies the government, raises money, holds conferences, engages and activates people with hearing loss, provides educational materials, and provides guidance and support for local campaigns and awareness activities (Action on Hearing Loss, 2016a). HLAA also organizes public education and awareness events. Since 2006 it has supported walks across the United States in the spring and fall (HLAA, 2016b). Additionally, the American Academy of Audiology, NIDCD, the CDC, HLAA, and other organizations have supported October as National Protect Your Hearing Month and National Audiology Awareness Month, while May has been designated as Better Hearing Month (AAA, 2016; ASHA, 2016; CDC, 2015c; HLAA, 2013; NIDCD, 2014). In honor of these months, organizations may provide promotional tools, factsheets, posters, customizable press releases, and other materials that can be used to educate people with hearing loss and the public about healthy hearing. Other advocacy organizations, such as AARP and the National Council on Aging, have also dedicated resources to educating the public and their constituents about hearing loss, possible comorbidities associated with hearing loss, and resources that are available to assess and treat hearing loss (AARP, 2016; NCOA, 2016).

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Box 6-6 EXAMPLES OF CAMPAIGNS RELATED TO HEARING LOSS

Get in the Hearing Loop was a year-long campaign (June 2010–June 2011) that was jointly sponsored by the Hearing Loss Association of America and the American Academy of Audiology. This marketing-based campaign was specifically targeted toward hearing aid users, audiologists, and hearing instrument specialists and technicians, and it focused on educating these audiences about the benefits of hearing loops, telecoils, and other assistive technologies and systems.

National Campaign for Better Hearing is an ongoing campaign in Canada to increase awareness of hearing loss and to ensure access to hearing assessments for Canadians over the age of 60 years. The campaign is sponsored by a number of hearing aid centers, and it hosts events across Canada which include free hearing tests, hearing aid check-ups, and educational sessions about available hearing technologies. The campaign website provides research findings and an active blog that features interviews with people with hearing loss.

Speak Up About Hearing Loss was a campaign led by the American Speech-Language-Hearing Association in 2012 that focused on television and radio public service announcements (PSAs). The goal of the PSAs was to encourage families to speak openly about hearing loss and to encourage loved ones to seek assessment and treatment. The PSAs were available in both English and Spanish and were featured on major media outlets nationwide. The campaign also featured a website that linked to research findings, podcasts, and additional information for individuals and families.

Turn it to the Left is a campaign that was launched by the American Academy of Audiology in 2008. The ongoing campaign is focused on increasing awareness about noise-induced hearing loss and raising money for research. The interactive website offers educational resources (e.g., posters, diagrams, a quiz), fact sheets, press releases, articles and stories that have appeared in the media, and a link to the academy's Find an Audiologist portal.

The availability of reliable, evidence-based information for consumers helps to reduce misperceptions and empower individuals with hearing loss to seek care and more openly discuss their hearing loss, the challenges it presents, and successful treatment stories with others. Given the current and expected number of individuals with hearing loss in the United States, advocacy organizations, government agencies, health care professionals, researchers, and industry need to collaborate in order to identify the best mechanisms for educating the public about hearing loss, the importance of hearing health, and what services and treatment options are available to people who live with hearing loss. To fully understand the impact of public awareness campaigns and advocacy efforts and to maximize the success of these initiatives, the following are needed:

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Other campaigns have been tailored toward younger audiences with a goal of educating children, young adults, and their parents about noise-induced hearing loss. For example, the following multimedia campaigns have featured messages of risk reduction, prevention, the development of healthy listening practices, and overall healthy hearing:

- **Dangerous Decibels**—jointly supported by the Oregon Health & Science University, Portland State University, and the University of Northern Colorado.
- **It's a Noisy Planet**—sponsored by the National Institute on Deafness and Other Communication Disorders.
- **Listen to Your Buds**—sponsored by the American Speech-Language-Hearing Association.
- **It's How You Listen That Counts**—sponsored by the House Ear Institute.

SOURCES:

- Get in the Hearing Loop: http://www.hearingloss.org/content/get-hearing-loop
- National Campaign for Better Hearing: http://www.campaignforbetterhearing.org/#about-marquee
- Speak Up About Hearing Loss: http://www.asha.org/About/news/Speak-Up-About-Hearing-Loss
- Turn it to the Left: http://www.turnittotheleft.org
- Dangerous Decibels: http://www.dangerousdecibels.org
- It's a Noisy Planet: http://www.noisyplanet.nidcd.nih.gov
- Listen to Your Buds: http://www.asha.org/buds
- It's How You Listen That Counts: http://www.hearingreview.com/2010/12/to-teens-its-how-you-listen-that-counts

- clearly defined goals, target audiences, messaging, milestones, and successes;
- data and research to establish baselines of awareness and the misperceptions associated with hearing loss;
- participation and involvement of targeted audiences throughout the planning and implementation phases to ensure that the messaging and education efforts are reaching their intended audiences, are culturally sensitive, and are making a difference;
- coordination, collaboration, and partnerships to leverage limited resources, expand reach, and meet goals; and
- short- and long-term evaluation plans to measure success, adjust ongoing initiatives, and target future efforts.

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New Technology and Shifting Public Perspectives

Over the past 30 years, high-tech mobile technologies (e.g., music players, smartphones, tablets) have changed the way people communicate, receive information, and interact with one another. Many of these technologies are paired with communication products such as headphones, earbuds, and Bluetooth headsets, vastly expanding the number of people who use some form of electronic technology in or near their ears. In a 2006 editorial, Jackler (2006) predicted that the public stigma associated with hearing aids would vanish with the pervasive use of earpieces among the general public, and preliminary data suggest that Jackler's prediction may be coming to fruition.

Since 1977, a series of studies have assessed the hearing aid effect, which is defined as "the assignment of negative attributes to individuals using hearing aids" (Rauterkus and Palmer, 2014, p. 894). More recently, Rauterkus and Palmer (2014) replicated study designs that were used in the 1970s and 1980s to determine whether, given the increasing use of personal listening devices by the public, the hearing aid effect has persisted over time. Study participants viewed images, each of which showed an individual wearing a different technology: three types of hearing aids (two behind-the-ear designs and one in-the-canal design), earbuds, and a Bluetooth headset. Participants were asked to rate the individual in each image based on eight attributes (e.g., from unattractive to attractive, from unintelligent to intelligent, from lazy to hard working). Rauterkus and Palmer had hypothesized that there would be an overall reduction in the hearing aid effect (i.e., reduction in negative attitudes). In fact, the images of individuals wearing hearing aids were not rated any more negatively than the images of individuals wearing earbuds or Bluetooth headsets, suggesting that the hearing aid effect was no longer present. Notable shortcomings of this study include the sample size and participant demographics; the study was conducted with 24 participants who were pursuing a masters of business administration degree in one city (Rauterkus and Palmer, 2014). Therefore, the findings show promise but are not generalizable to the U.S. population.

In a nationwide survey that was jointly conducted by AARP and the American Speech–Language–Hearing Association, stigma did not seem to be a major concern for participants. For example, most respondents, regardless of hearing status, indicated that they would not mind having others know about a hearing problem (66 percent), being seen wearing hearing aids (71 percent), or discussing difficulties with hearing (73 percent). Although attitudes may be shifting among older adults, the remnants of stigma may still be identifiable in these survey results. For example, few individuals with untreated hearing loss were willing to talk to family or friends about suspected hearing loss (25 and 15 percent, respectively), and more than

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half of respondents with untreated hearing loss (57 percent) found ways to "cover up" their hearing loss rather than seeking treatment (AARP and ASHA, 2011). The participants for this survey were carefully selected to reflect the demographics of AARP constituents; thus, like the Rauterkus and Palmer study, this survey is not representative of the U.S. population.

Companies within the consumer technologies market are beginning to work with hearing aid manufacturers in an effort to adapt micro hearing aid technologies (e.g., chips, batteries) for use in technologies that can stream audio and voice from a cell phone via Bluetooth. As these types of high-end technologies become available, the line between hearing aids and consumer technologies will blur and the negative perceptions about hearing aids may erode further (Hunn, 2015). Recent advances in hearing aids and hearing assistive technologies (described in Chapter 4)—including the pairing/controlling of hearing aids and hearables with apps for smartphones and watches—are bringing these technologies to younger and more tech savvy sectors of society. These new technologies are also putting an increased emphasis on user experience and visual design, offering colorfully patterned cases that draw attention to the device as a high-tech gadget rather than as something that should be hidden from view (Kosner, 2015). The continuing evolution and marketing of high-tech hearing technologies that are both functional and stylish is likely to promote additional shifts in public perceptions and attitudes about hearing aids and other technologies. However, some of these high-tech options may come with a higher price tag, something that is already a concern for many seeking hearing health care (see Chapter 5), and ensuring compatibility among assistive technologies will be important.

Although the studies and survey findings described in this section are encouraging, stigma is still cited in recent literature (described earlier in this chapter) as a concern among individuals with hearing loss, and additional efforts are required to ensure that stigma, negative attitudes, and misperceptions are not barriers that prevent individuals from seeking hearing assessments, treatments, and community-based support.

NEXT STEPS AND RECOMMENDATIONS

As discussed in previous chapters, hearing loss is about more than just the hearing loss itself. It is also associated with diminished physical and psychosocial well-being and overall quality of life, depression, anxiety, low self-esteem, social isolation, stress, mental fatigue, cognitive decline and dementia, reduced mobility, falls, and mortality (Dalton et al., 2003; Genther et al., 2015; Hornsby, 2013; Lin and Ferrucci, 2012; Lin et al., 2011, 2013; Mener et al., 2013; Mick et al., 2014; Munro et al., 2013). Although overall quality of life may be improved with the appropriate use

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of hearing aids and hearing assistive technologies (Chisolm et al., 2007; Kochkin and Rogin, 2000), many individuals delay seeking help and treatment or else do not regularly use their hearing aids or other technologies. Further, there has been limited research into positive experiences and adaptation to hearing loss as well as resilience factors among adults and their families (Hallam et al., 2008; Manchaiah et al., 2015; Stephens and Kerr, 2003). Multifaceted solutions are needed across the social-ecological model to improve support for individuals with hearing loss. Box 6-7 provides areas of focus and research priorities for improving attitudes and beliefs, fortifying education and community-based support, and enhancing public awareness.

Box 6-7 AREAS OF FOCUS AND RESEARCH PRIORITIES FOR IMPROVING SUPPORT FOR PEOPLE WITH HEARING LOSS

- The development of education and support programs along with other tools and techniques for individuals and families to foster resilience and empower them to overcome negative attitudes and perceptions
- The normalization of hearing health, screening, treatment, and management, as has been done with dentistry and eye/vision care
- The empowerment and education of individuals and their families to identify good hearing as a health priority, seek care, and pursue the services and technologies that meet their needs, with an emphasis on improving overall well-being
- The provision of high-quality community-based support to overcome misperceptions about hearing loss and the use of hearing technologies
- The development and evaluation of adaptable community-based education and support initiatives using multimedia platforms, the Internet, and peers with hearing loss to engage individuals and families together across the United States
- Education for employers and employees about the Americans with Disabilities Act (ADA) requirements, accommodations, and tools for successful interviews and hiring of people with hearing loss
- The widespread installation and use of hearing assistive technologies in public spaces, as stipulated in the ADA
- The development, evaluation, and implementation of design elements that can optimize acoustics in public spaces whenever possible, with an emphasis on universal design solutions
- A more positive portrayal of hearing loss and the use of hearing aids and hearing assistive technologies in the media
- The application and evaluation of social media to educate the public about hearing loss and the risks of noise-induced hearing loss
- Positive messaging and themes in hearing technology marketing, with an emphasis on topics such as connecting with family and friends rather than on aesthetics and hiding the hearing aid or hearing assistive technology

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Goal 11: ***Improve Publicly Available Information on Hearing Health***

Recommendation 11: The National Institutes of Health, the Centers for Disease Control and Prevention, the Food and Drug Administration, the Department of Defense, the Department of Veterans Affairs, the Administration for Community Living, state public health agencies, other relevant government agencies, advocacy organizations, hearing health care professional associations, hearing technology manufacturers, hearing health care professionals, and media organizations should improve public information on hearing health and hearing-related technologies and services and promote public awareness about hearing and hearing health care.

Specifically,

- Strengthen publicly available, evidence-based information on hearing through multiple avenues (e.g., centralized websites, community-based services, local councils on aging) that explain hearing and related health concerns for adults of all health literacy levels, and address the breadth of services and technologies, including their comparative effectiveness and costs;
- Work through media, social marketing, and public education campaigns to disseminate and evaluate key evidence-based messages about hearing and hearing health and to promote accuracy in media portrayals;
- Implement and support a consumer-based metric to enable individuals to understand and track their communication abilities and hearing needs and a consumer-oriented format for audiogram and other hearing test results;
- Adopt standardized terminology across manufacturers about the features and capabilities of hearing aids and hearing assistive technologies so that consumers and hearing health care professionals can make easy, clear, unambiguous comparisons; and
- Develop and disseminate criteria that individuals and families can use to evaluate and compare hearing-related products and services.

Goal 12: ***Promote Individual, Employer, Private-Sector, and Community-Based Actions to Support and Manage Hearing Health and Effective Communication***

Recommendation 12: Individuals, families, community-based organizations, advocacy organizations, employers, private-sector businesses, and government agencies (local, state, federal) should take actions to

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support and manage hearing health and foster environments that maximize hearing and communication for all individuals.

- Individuals and their family members can
  - Reduce exposure to noise that is at high volume levels for extended periods of time and use hearing protection as appropriate,
  - Be aware of and recognize difficulties in hearing and communication and seek information and care through the range of available services and technologies when appropriate, and
  - Seek out peer-support groups and other opportunities for those living with hearing loss, when appropriate.
- Community-based organizations, advocacy organizations, employers, private-sector businesses, and government agencies (local, state, federal) should promote work and community environments that are conducive to effective communication and that support individuals with hearing loss. Specifically, they should
  - Ensure compliance with the Americans with Disabilities Act and other related laws supporting people with disabilities and strive to exceed their minimum requirements, and
  - Research and incorporate features into buildings and public spaces that improve hearing and communication (e.g., universal design, hearing assistive technologies).

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7

Opportunities for Action

Hearing is a vital human sense important to communications, health, function, and quality of life. Currently, hearing health care is simultaneously on the brink of and in the midst of innovation and change. Changes in technologies, changes in the delivery of hearing health care services, and changes in opportunities for consumer empowerment and public awareness are occurring at various rates and with various levels of research rigor and evidence. Thus, with the benefit of key institutional, technological, and regulatory changes to improve access and affordability, hearing health care is poised to undergo advances that will help individuals with hearing loss and their families find and fully utilize the appropriate, affordable, and high-quality services, technologies, and support they need. The committee's findings and recommendations for change are highlighted in Box 7-1 and discussed throughout this report. The recommended actions will require collaborative, determined, and sustained efforts to ensure that stakeholders from across the public and private sectors and across professions come together to provide accessible and affordable hearing health care. Fully developing the array of options for adults of all ages and with all levels of hearing loss (see Table 7-1) requires that hearing loss be recognized as a public health concern that demands multidisciplinary and collaborative efforts by all stakeholders working together with the common goal to improve hearing and communication abilities for individuals and across the population.

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Box 7-1 KEY MESSAGES FOR IMPROVING ACCESSIBILITY AND AFFORDABILITY OF HEARING HEALTH CARE FOR ADULTS[a]

Findings:

- Hearing is vital to communications, health, function, and quality of life. Individuals need to be alert to their hearing health, as hearing loss can range from mild to profound and tends to increase with age, onset can be gradual, and each individual's hearing needs are unique.
- Hearing health care involves a wide range of services and technologies with ever-expanding and evolving options; however, many people do not have access to these options or cannot afford them.
- Hearing loss is a public health and societal concern; engagement and action are needed across the spectrum of relevant stakeholders, including individuals and families, professionals, nonprofit organizations, industries, government, and the health care community.

Recommended Actions:

- Improve population-based information on hearing loss and hearing health care
- Develop and promote measures to assess and improve quality of hearing health care services
- Remove Food and Drug Administration (FDA) regulation for medical evaluation or waiver of that evaluation prior to hearing aid purchase
- Empower consumers and patients in their use of hearing health care
- Improve access to hearing health care for underserved and vulnerable populations
- Promote hearing health care in wellness and medical visits for those with concerns about their hearing
- Implement a new FDA device category for over-the-counter wearable hearing devices
- Improve the compatibility and interoperability of hearing technologies with communications systems and the transparency of hearing aid programming
- Improve affordability of hearing health care by actions across federal, state, and private sectors
- Evaluate and implement innovative models of hearing health care to improve access, quality, and affordability
- Improve publicly available information on hearing health
- Promote individual, employer, private-sector, and community-based actions to support and manage hearing health and effective communication

[a]All findings and recommended actions are of equal importance and are not prioritized.

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TABLE 7-1
Hearing Loss–Related Services and Technologies

Services	• Evaluation and assessment • Selection, fitting, adjustment, and maintenance of hearing aids and hearing assistive technologies • Auditory rehabilitation
Technologies	• Hearing aids • Over-the-counter wearable hearing devices (proposed) • Hearing assistive technologies, including products that connect with other communications technologies (e.g., phones, television)

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A

Meeting Agendas

Committee on Accessible and Affordable Hearing Health Care for Adults

FIRST COMMITTEE MEETING
APRIL 27, 2015

Keck Center of the National Academies
Room 100
500 Fifth Street, NW
Washington, DC 20001

Open Session – Room 100

10:30–10:35 a.m.	**Welcome and Introductions** *Dan Blazer, Committee Chair*
10:35 a.m.–12:30 p.m.	**Context for Study**
10:35–11:35 a.m.	**Panelist Presentations** • *Theresa H. Chisolm, University of South Florida* • *Dianne Van Tasell, Bose* • *Meg Wallhagen, University of California, San Francisco, School of Nursing*
11:35 a.m.–12:30 p.m.	**Committee Discussion with Panelists**

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Hearing Health Care for Adults: Priorities for Improving Access and Affordability

12:30–1:30 p.m.	**Lunch (Keck Atrium)**
1:30–4:45 p.m.	**Discussion of the Charge to the Committee**
1:30–3:30 p.m.	**Perspectives from Study Sponsors**
	National Institute on Deafness and Other Communication Disorders, *Amy Donahue* National Institute on Aging, *Molly Wagster* Hearing Loss Association of America, *Anna Gilmore Hall* Food and Drug Administration, *Eric Mann and Srinivas Nandkumar* Department of Defense, *Mark Packer and Lynn Henselman* Department of Veterans Affairs, *David Chandler* Centers for Disease Control and Prevention, *Marcus Gaffney*
3:30–3:45 p.m.	**Break**
3:45–4:45 p.m.	**Committee Discussion with Study Sponsors**
4:45–5:15 p.m.	**Public Comment**
5:15 p.m.	**Open Session Adjourns**

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Hearing Health Care for Adults: Priorities for Improving Access and Affordability

Committee on Accessible and Affordable Hearing Health Care for Adults

SECOND COMMITTEE MEETING
JUNE 30, 2015

Keck Center of the National Academies
Room 100
500 Fifth Street, NW
Washington, DC 20001

Open Session – Keck 100

8:00–8:10 a.m.	**Welcome and Opening Remarks** *Dan Blazer, Committee Chair*
8:10–9:15 a.m.	**Panel 1: Impact of Hearing Impairment and Use of Services** *Facilitator: Karen Cruickshanks*
8:10–8:15 a.m.	Panel Introductions
8:15–8:55 a.m.	Presentations • *Karen Cruickshanks, University of Wisconsin, Committee Member* • *Carrie Nieman, Johns Hopkins University*
8:55–9:15 a.m.	Discussion with the Committee
9:15–10:40 a.m.	**Panel 2: Hearing Health Care Providers and Scope of Practice** *Facilitator: Deb Tucci*
9:15–9:20 a.m.	Panel Introductions
9:20–10:20 a.m.	Presentations • *Philip Zazove, University of Michigan* • *Gail Linn, Potomac Audiology* • *Michael Andreozzi, Beltone New England* • *Wade Chien, Johns Hopkins University*
10:20–10:40 a.m.	Discussion with the Committee
10:40–10:55 a.m.	**Break**

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Hearing Health Care for Adults: Priorities for Improving Access and Affordability

10:55 a.m.–12:05 p.m.	**Panel 3: Affordability and Coverage** *Facilitator: José Pagán*
10:55–11 a.m.	Panel Introductions
11:00–11:45 a.m.	Presentations • *Susan Miller, Centers for Medicare & Medicaid Services* • *Virginia Ramachandran, Henry Ford Health System* • *Stephanie Sjoblad, University of North Carolina at Chapel Hill*
11:45 a.m.–12:05 p.m.	Discussion with the Committee
12:05–1:05 p.m.	**Lunch** (Keck Atrium)
1:05–2:15 p.m.	**Panel 4: Hearing Health Care Service Delivery** *Facilitator: Judy Dubno*
1:05–1:10 p.m.	Panel Introductions
1:10–1:55 p.m.	Presentations • *Lu Beck, Department of Veterans Affairs* • *Marc Klau, Kaiser Permanente* • *Lisa Tseng, Optum, hi HealthInnovations*
1:55–2:15 p.m.	Discussion with the Committee
2:15–3:40 p.m.	**Panel 5: Devices** *Facilitator: Richard Ellenson*
2:15–2:20 p.m.	Panel Introductions
2:20–3:20 p.m.	Presentations • *Thomas Powers, Sivantos, Inc.* • *Holly Hosford-Dunn, Hearing Health and Technology Matters* • *Mead Killion, Etymotic Research, Inc.* • *Kinu Masaki, SmartEar, Inc.*
3:20–3:40 p.m.	Discussion with the Committee
3:40–3:55 p.m.	**Break**

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Hearing Health Care for Adults: Priorities for Improving Access and Affordability

3:55–5:20 p.m.	**Panel 6: Consumer Perspective** *Facilitator: Brenda Battat*
3:55–4:00 p.m.	Panel Introductions
4:00–5:00 p.m.	Presentations • *Julie Kearney, Consumer Electronics Association* • *Harvey Abrams, Hearing Industries Association* • *Richard Einhorn, Einhorn Consulting, LLC* • *Richard Uzuanis, Americans for Better Hearing Foundation*
5:00–5:20 p.m.	Discussion with the Committee
5:20–6:00 p.m.	**Public Comment** *Moderator: Dan Blazer*
6:00 p.m.	**Open Session Adjourns**

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Hearing Health Care for Adults: Priorities for Improving Access and Affordability

Committee on Accessible and Affordable Hearing Health Care for Adults

THIRD COMMITTEE MEETING
SEPTEMBER 10–11, 2015

Keck Center of the National Academies
Room 100
500 Fifth Street, NW
Washington, DC 20001

Thursday, September 10, 2015

Open Session–Keck 100

8:30–8:40 a.m.	**Welcome and Opening Remarks** *Dan Blazer, Chair*
8:40–10:00 a.m.	**Panel 1: International Perspective** *Facilitator: Frank Lin*
8:40–8:45 a.m.	Panel Introductions
8:45–9:30 a.m.	Presentations • *Adrian Davis (via Webex)* • *Curtis Alcock, Audira (via Webex)* • *Mark Laureyns, AEA - European Association of Hearing Aid Professionals (via Webex)*
9:30–9:55 a.m.	Discussion with the Committee
9:55–10:05 a.m.	**Break**
10:05–10:55 a.m.	**Panel 2: Young Adult Perspective** *Facilitator: Kate Seelman*
10:05–10:10 a.m.	Panel Introductions
10:10–10:40 a.m.	Presentations • *Zina Jawadi, Stanford University (via Webex)* • *Patrick Holkins, Department of Justice*
10:40–10:55 a.m.	Discussion with the Committee

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Hearing Health Care for Adults: Priorities for Improving Access and Affordability

10:55 a.m.–12:30 p.m.	**Panel 3: Improving Accessibility and Affordability** *Facilitator: Darrell Gaskin*
10:55–11:00 a.m.	Panel Introductions
11:00 a.m.–12:00 p.m.	Presentations • *Ateev Mehrotra, Harvard Medical School* • *David Zapala, Mayo Clinic, Committee Member* • *Jani Johnson, University of Memphis* • *Gustav Chiarello, Federal Trade Commission*
12:00–12:30 p.m.	Discussion with the Committee
12:30–1:00 p.m.	**Public Comments**
1:00 p.m.	**Open Session Adjourns**

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Hearing Health Care for Adults: Priorities for Improving Access and Affordability

Committee on Accessible and Affordable Hearing Health Care for Adults

FOURTH COMMITTEE MEETING
NOVEMBER 13, 2015

Keck Center of the National Academies
Room 100
500 Fifth Street, NW
Washington, DC 20001

Open Session – Keck 201

11:00 a.m.–12:00 p.m.	**Report of the President's Council of Advisors on Science and Technology** Presentation *Christine Cassel, President's Council of Advisors on Science and Technology Member* Discussion with the Committee

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B

Committee Biographies

Dan G. Blazer, M.D., Ph.D., M.P.H. (*Chair*), is the J. P. Gibbons Professor of Psychiatry Emeritus at Duke University. He served 9 years as chair of the Department of Psychiatry and dean of medical education at Duke School of Medicine. Dr. Blazer's research interests include the epidemiology of late-life substance use disorders and depression, psychosocial predictors of adverse health outcomes, and trajectories of health outcomes. He has worked on the Established Populations for Epidemiologic Study of the Elderly (EPESE) and the National Comorbidity Study. He is the author or editor of 36 books, including *The Age of Melancholy: Depression and Its Social Origins* and a research methods textbook for clinical psychiatry research. He has produced a second edition of *Emotional Problems in Later Life* and authored or co-authored more than 200 published abstracts and more than 460 peer-reviewed articles. Dr. Blazer was president of the American Association of Geriatric Psychiatry and is a current member of the editorial board of *JAMA Psychiatry*. He has been a member of the National Academy of Medicine since 1995. Currently he is the chair of the National Academies of Sciences, Engineering, and Medicine's (the Academies') Board on the Health of Select Populations. He has served as a member or chair of many past Academies committees. He received the Walsh McDermott Award for Distinguished Service to the Institute of Medicine in 2014.

Brenda Battat, M.S., MCSP, is the retired executive director of the Hearing Loss Association of America (HLAA). During 24 years with the HLAA, 5 as executive director, she led nationwide advocacy efforts to change the way society views hearing loss, pushed for accessible and affordable hearing

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health care and consumer choice in the marketplace, promoted hearing-friendly environments through technology such as looping and captioning, and successfully advocated for hearing-aid-compatible mobile products. She upheld the philosophy of self-help and encouraged and taught consumers to self-advocate. Ms. Battat has served on government, professional, and business advisory boards, including the U.S. Access Board's Telecommunications Access Advisory Committee, the Federal Communications Commission's Consumer/Disability Advisory Committee, the AT&T Advisory Panel on Access and Aging, the National Advisory Group—National Technical Institute for the Deaf, the American and Northwest Airlines Consumer Advisory Committees, and the National Institute on Deafness and Other Communication Disorders Advisory Council of the National Institutes of Health. Ms. Battat received an M.S. in education from Indiana University and a B.Sc. in physical therapy from St. Mary's Hospital, London, England. For her work she received the Sheldon Williams Itzkoff Leadership Award (2010); Robert H. Weitbrecht Telecommunications Access Award (2007); Oticon Focus on People Advocacy Award (2005); and Self Help for Hard of Hearing People National Access Award (2002).

Karen J. Cruickshanks, Ph.D., is a professor of ophthalmology and visual sciences and population health sciences at the University of Wisconsin School of Medicine and Public Health. She received her Ph.D. in epidemiology from the University of Pittsburgh Graduate School of Public Health. Her research program is studying the health problems of aging through epidemiological cohort studies. The Epidemiology of Hearing Loss Study (EHLS) is funded by the National Institute on Aging (AG11099) to study hearing, olfactory, and cognitive impairments in a population-based cohort of 3,500 older residents of Beaver Dam, Wisconsin. The focus of this research is on the roles of inflammation and vascular factors on age-related disorders. The Beaver Dam Offspring Study funded by the National Institute on Aging follows the adult children of the EHLS to study generational differences in the risk of age-related sensorineural disorders. She is the director of the EpiSense Audiometry Reading Center which provides support for other cohort studies of hearing, including the Hispanic Community Health Study, a multicenter study of 16,000 Latinos, and the Epidemiology of Diabetes Interventions and Complications study of hearing impairment. A major theme of her research is the links between subclinical atherosclerosis, inflammation, and the sensory and neurological disorders of aging. Dr. Cruickshanks has served on a number of Institute of Medicine committees, including the Committee on Gulf War and Health: Long-Term Effects of Blast Exposure.

Jennifer E. DeVoe, M.D., D.Phil., is a practicing family physician and doctorally trained health services researcher who studies access to health care,

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disparities in care, and the impact of practice and policy interventions on vulnerable populations. Her research portfolio spans both Oregon Health & Science University (OHSU) Family Medicine and OCHIN, Inc., a health information technology network based in Portland, Oregon. Dr. DeVoe leads a multidisciplinary research team with expertise in informatics, sociology, epidemiology, biostatistics, economics, primary care, mental health, health-services research, clinical medicine, health care disparities, and anthropology. Using large health insurance claims, electronic health records (EHRs), and self-reported datasets, this OHSU/OCHIN team uses informatics and analytics to conduct policy-relevant and practice-relevant studies. Research findings inform community, practice, and policy interventions that help to improve the delivery of care for vulnerable populations and eliminate health disparities. Dr. DeVoe is chief research officer at OCHIN where she serves as executive director of the OCHIN practice-based research network of community health centers. Since 2004, Dr. DeVoe has led or supported more than 30 studies to conduct health services, primary care, and disparities research in primary care clinics in the OCHIN network. Dr. DeVoe is currently the principal investigator on six research studies funded by the Patient-Centered Outcomes Research Institute; the Agency for Healthcare Research and Quality; the National Cancer Institute; the National Heart, Lung, and Blood Institute; and the Centers for Disease Control and Prevention, with nearly $20 million in active grant funding. She also serves as the principal investigator of the ADVANCE Clinical Data Research Network, part of PCORnet, which is "horizontally" integrating outpatient EHR data, creating a unique community laboratory for including disadvantaged and vulnerable patients across the country. Dr. DeVoe earned her M.D. from Harvard Medical School in 1999. Selected as a Rhodes Scholar in 1996, she also earned an M.Phil. and D.Phil. from Oxford University in 1998 and 2001, respectively. She completed her family medicine residency at OHSU in 2004.

Judy R. Dubno, Ph.D., is a professor and the director of the Hearing Research Program in the Department of Otolaryngology–Head and Neck Surgery at the Medical University of South Carolina in Charleston. Her research, which is supported by grants from the National Institute on Deafness and Other Communication Disorders (NIDCD) at the National Institutes of Health (NIH), focuses on auditory perception and speech recognition in adverse listening conditions and how perception changes with age, hearing loss, hearing aids, and training. She previously served on the NIDCD Advisory Council of the NIH, three Institute of Medicine committees, as President and Secretary-Treasurer of the Association for Research in Otolaryngology, and as President and Vice President of the Acoustical Society of America. She is a fellow of the Acoustical Society of America and of the American Speech–Language–Hearing Associa-

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tion and the recipient of the James Jerger Career Award for Research in Audiology.

Richard Ellenson, M.B.A., is chief executive officer of the Cerebral Palsy International Research Foundation. He has spearheaded a major effort to transform basic health care for women with disabilities and developed a new initiative to use Kinect technology to provide an innovative gaming interface for people with disabilities. Prior to this, Mr. Ellenson was founder and chief executive officer of two assistive technology companies (Panther and Blink Twice) that helped transform the field of assistive technology for people with disabilities. He has worked tirelessly to create awareness about people with disabilities and to share stories about their vibrant lives. He and his son have been featured as ABC World News People of the Year, on CNBC's *Squawk Box*, in a *New York Times Sunday Magazine* cover story, and as a feature on ESPN's *E:60*. Prior to this work, he was an advertising executive who created campaigns for brands such as American Express and Remy Martin, and who penned the classic line, "It's Not TV. It's HBO." Mr. Ellenson has been honored with the 2012 Visionary Leadership Award from Resources for Children with Special Needs, as a Caregiver of the Year by United Cerebral Palsy of New York City, and by many other organizations within the world of disabilities. He has served on the Advisory Council of NIDCD and on the boards of the Center on Disabilities at California State University at Northridge, the United States Society for Alternative and Augmentative Communication, and the Assistive Technology Industry Association. He has also been the recipient of two NIH grants. He is a graduate of Cornell University and holds an M.B.A. from the Wharton School of the University of Pennsylvania.

Barbara J. Evans, J.D., Ph.D., LLM, joined the University of Houston Law Center (UHLC) in 2007. She is the George Butler Research Professor and the director of the Center for Biotechnology and Law at UHLC and is an affiliated member of the Center for Medical Ethics and Health Policy at Baylor College of Medicine. She was named a Greenwall Foundation Faculty Scholar in Bioethics for the period 2010–2013 and conducts an active research agenda including projects funded by the National Institutes of Health and the Food and Drug Administration (FDA). Her research interests include governance, privacy, and financing issues with large health information networks; the regulation of genomic testing under FDA's medical device regulatory framework and the Clinical Laboratory Improvement Amendments of 1988; and legal barriers to the introduction of new medical technologies and care-delivery concepts. Earlier in her career, she was a partner in the international regulatory practice of a large New York law firm and subsequently advised clients on U.S. privacy, research, and medi-

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cal device regulatory matters. Prior to joining the University of Houston Law Center, she was a research professor of medicine and the director of the Program in Pharmacogenomics, Ethics, and Public Policy at the Indiana University School of Medicine/Center for Bioethics. She holds an electrical engineering degree from the University of Texas at Austin; M.S. and Ph.D. degrees from Stanford University; a J.D. from Yale Law School; and an LLM in health law from the University of Houston; and she completed a postdoctoral fellowship in clinical ethics at the MD Anderson Cancer Center.

Ellen J. Flannery, J.D., is a partner and past co-chair of Covington & Burling LLP's global food and drug law practice group. She advises clients on regulatory strategies and compliance for medical devices, pharmaceuticals, and biological products. She has significant experience in successfully helping clients navigate the regulatory process. Ms. Flannery's clients range from large multinational companies to development-stage companies, venture capital firms, clinical laboratories, and trade associations. She has experience with cutting-edge technologies, including, for example, companion diagnostics, software and mobile medical apps, imaging devices, combination products, and humanitarian use devices. She has successfully helped clients to develop strategic plans for obtaining FDA marketing clearance or approval; appeal from adverse determinations in investigational device exemption and 510(k) contexts; respond to FDA quality system inspections, including 483s and warning letters; and undertake product recalls. She has experience with Clinical Laboratory Improvement Amendments waiver applications and laboratory-developed tests. She advises clients on post-market reporting requirements and advertising and promotional issues. Ms. Flannery has served on Institute of Medicine committees that studied medical device and orphan drug matters, taught food and drug law seminars at three law schools, and regularly publishes and presents on regulatory developments. She is co-editor in chief of Covington's InsideMedicalDevices blog.

Darrell J. Gaskin, Ph.D., is an internationally known expert in health care disparities, access to health care for vulnerable populations, and safety net hospitals. He is the deputy director of the Johns Hopkins Center for Health Disparities Solutions. He seeks to identify and understand barriers to care for vulnerable populations and to develop and promote policies and practices that will improve access to care for the poor, minority, and other vulnerable populations and eliminate racial/ethnic and socioeconomic disparities in health care. His current projects explore the relationship between "place" and health care disparities and examine racial/ethnic and socioeconomic disparities in hospital care. Dr. Gaskin's research has been

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published in *Health Services Research* (*HSR*), *Health Affairs*, *Medical Care Research and Review*, *American Journal of Public Health*, *Medical Care*, and *Inquiry*. Currently, he serves on the editorial boards of *HSR*, *Medical Care Research and Review*, and *Medical Care*. He served on the Institute of Medicine's Committee on Valuing Community-Based, Non-Clinical Prevention Programs and the Committee on the Future of Emergency Care in the U.S. Health System. He is vice chair of the board of directors of AcademyHealth and a member of the Center for Health Policy Development Board, the board of directors for the National Academy of State Health Policy. He is involved in federal and state health policy. He was a member of the Congressional Black Caucus Commission on the Budget Deficit, Economic Crisis, and Wealth Creation. He is a former member of the board of directors of the Maryland Health Insurance Plan, the state's high-risk pool. He served as the vice chair of the board of directors of the Maryland Health Benefits Exchange Commission from 2011 to 2015.

William R. Hazzard, M.D., is a professor of internal medicine who has recently returned to the Wake Forest School of Medicine at the J. Paul Sticht Center on Aging in Winston-Salem, North Carolina. His focus on aging began approximately 40 years ago in Seattle when, following training in endocrinology and metabolism and initiating the Northwest Lipid Research Clinic, he was asked to develop the program on gerontology and geriatric medicine at the University of Washington. Following a sabbatical year in the United Kingdom learning the British approach to geriatrics, he successively initiated programs in geriatrics at three American academic health centers, in so doing moving progressively toward the center of the Department of Internal Medicine as a Division Head at Washington, vice chairman at Hopkins, and finally in 1986 as chairman at Wake Forest, where his negotiated recruitment goal was specifically to "gerontologize" the department and the institution, notably from a newly designed and constructed Sticht Center on Aging, which opened in 1997. Now in semi-retirement, his greatest satisfaction continues to derive from promoting career development with a focus on aging across the life span with students, fellows, and faculty at the Sticht Center and as a leading institutional priority to witness how deeply and broadly its program has continued to expand throughout the university and community. Through all of this he remains fascinated by the question that first drew him to this field: Why do women live longer than men?

Frank R. Lin, M.D., Ph.D., is an associate professor of otolaryngology, geriatric medicine, mental health, and epidemiology at the Johns Hopkins University School of Medicine and the Bloomberg School of Public Health. Dr. Lin completed his medical education, residency in otolaryngology, and

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Ph.D. in clinical investigation, all at Johns Hopkins. He completed further otologic fellowship training in Lucerne, Switzerland. Dr. Lin's clinical practice is dedicated to otology and the medical and surgical management of hearing loss. His epidemiological research focuses on how hearing loss affects the health and functioning of older adults and the role of hearing rehabilitative strategies in potentially mitigating these effects. In particular, his research group has demonstrated that hearing loss in older adults is strongly and independently associated with the risk of cognitive decline, incident dementia, impairments in physical functioning and mobility, and greater health care resource utilization in multiple epidemiological studies. He collaborates extensively with researchers across multiple fields, including gerontology, cognitive neuroscience, audiology, and epidemiology, and he has collaborative working relationships with individuals in industry, government, and nonprofit advocacy organizations. In January 2014 he co-chaired for the Institute of Medicine and the National Research Council a 2-day workshop on hearing loss and healthy aging in Washington, DC.

Nicole Marrone, Ph.D., CCC-A, holds the James S. and Dyan Pignatelli/Unisource Clinical Chair in Audiologic Rehabilitation for Adults at the University of Arizona and is an assistant professor in the Department of Speech, Language, and Hearing Sciences. Her research investigates hearing loss and rehabilitation in adults, with a focus on reducing hearing health care disparities, maximizing communication access, and living well with hearing loss. Her laboratory-based research centers on understanding the effects of hearing loss and amplification on speech communication and memory; her community-based research efforts are focused on the implementation of group audiologic rehabilitation programs and rural health access. Dr. Marrone is the principal investigator of an interdisciplinary research project funded by NIDCD that is developing and testing the effectiveness of a community health worker program to increase access to hearing health care among older Spanish-speaking adults. Dr. Marrone earned her M.S. and Ph.D. degrees in audiology from Boston University and completed a postdoctoral fellowship at Northwestern University prior to joining the faculty at the University of Arizona in 2011. Dr. Marrone's research is currently funded by the University of Arizona Foundation, the University of Arizona ConfluenCenter for Creative Inquiry, the SERTOMA Community Foundation, and NIH.

José A. Pagán, Ph.D., is the director of the Center for Health Innovation at the New York Academy of Medicine and a professor in the Department of Population Health Science and Policy at the Icahn School of Medicine at Mount Sinai. He is a former Robert Wood Johnson Foundation (RWJF) Health & Society Scholar with expertise in health economics and health ser-

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vices research. Dr. Pagán received his Ph.D. in economics from the University of New Mexico, and he is also an adjunct senior fellow of the Leonard Davis Institute of Health Economics at the University of Pennsylvania. Dr. Pagán has served as a consultant on health insurance coverage for the Institute of Medicine and is a member of the National Advisory Committee of the RWJF Health & Society Scholars Program. He is also a member of the board of directors of the American Society of Health Economists. Dr. Pagán was the principal investigator of a 3-year, $7.3 million Health Care Innovation Award from the Centers for Medicare & Medicaid Services to develop and implement the Brookdale Senior Living Transitions of Care Program. He was also a professor and the chair of the Department of Health Management and Policy, School of Public Health, University of North Texas Health Science Center.

Thomas Pippin, BC-HIS, has worked in the hearing health field as a hearing instrument specialist since 1967. From 1973 to 2014 he owned his own practice with multiple offices. He retired in 2014. Mr. Pippin served on the Wisconsin state licensing board for hearing instrument specialists for 10 years, serving as chairman of the board for 9 years. While serving on the board he worked to promote interdisciplinary teamwork in hearing health care. He was active for more than 23 years in working with the Wisconsin licensing exam, including testing oversight and a rewriting of the exam. Mr. Pippin has served on numerous state and national committees related to hearing health, particularly regarding licensing and regulation. His work has focused on consumer service and ensuring quality hearing health care. Mr. Pippin has an extensive collection of antique hearing aids and has written several books on the topic.

Katherine D. Seelman, Ph.D., is the associate dean of disability programs and a professor of rehabilitation science and technology at the School of Health and Rehabilitation Sciences, University of Pittsburgh. She holds secondary appointments in the School of Public Health and the Center for Bioethics and an adjunct position at Xian Jiatong University, China. Formerly serving as co-research director, she became senior policy adviser for the National Science Foundation–supported Quality of Life Technology Engineering Research Center which is housed in the Robotics Institute at Carnegie Mellon University. Dr. Seelman has a lifetime interest in science, technology, public policy, and disability. She is a member of the National Council on Disability and has served as a consultant to the World Health Organization's (WHO's) blindness and deafness unit and to the World Bank. She was one of two from the United States serving on the WHO/World Bank's nine-member international editorial committee to guide the development of the first World Report on Disability and presented a chapter

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of the report, for which she was a principal section author, in 2011 at the United Nations. During the Clinton Administration, she served for 7 years as the director of the National Institute on Disability and Rehabilitation Research in Washington, DC. She was the recipient of the University of Pittsburgh Chancellor's Distinguished Service Award in 2007. Dr. Seelman, who is hard of hearing, serves as adviser to the University's Students for Disability Advocacy and is co-chair of the City of Pittsburgh-Allegheny County Task Force on Disability. She is widely published and the recipient of many awards.

Debara L. Tucci, M.D., M.S., M.B.A., is a professor of otolaryngology head and neck surgery, at Duke University. Dr. Tucci has a subspecialty practice in otology, neurotology, and skull base surgery, and she also conducts basic science and clinical research. Prior to medical school, she received an M.S. in audiology from the University of Michigan and worked as a clinical audiologist for 4 years at University of Virginia Hospital. She is co-principal investigator on an NIH–funded grant focused on establishing a network of academic and community-based research sites to conduct clinical research in hearing and balance disorders. In this effort she interfaces with the Duke Clinical Research Institute and has been able to access the resources of that institute for program development. She is also the principal investigator of a grant designed to develop a protocol for hearing screening of older adults in primary care practices and to investigate the need for medical evaluation of adults who are considering hearing aid purchase. Dr. Tucci's leadership roles in professional societies include president of the American Auditory Society, secretary-treasurer and president of the American Neurotology Society, president of the Association for Research in Otolaryngology, board of directors for the American Academy of Otolaryngology Head and Neck Surgery, and research fund trustee and current president of the American Otological Society. She completed a year-long leadership training program, Executive Leadership for Academic Medicine, and holds an M.B.A. degree with a certificate in health sector management from the Duke Fuqua School of Business.

David A. Zapala, Ph.D., is an associate professor of audiology in the College of Medicine, Mayo Clinic Foundation. He is also a senior consultant in otorhinolaryngology and the chair of the Audiology Section at the Mayo Clinic in Florida. He is active in direct patient care; resident, fellow, and postdoctoral mentorship; clinical research; and clinical information management. From a research perspective, he has focused on mathematical modeling methods to improve audiological and vestibular diagnostics and quantify the functional consequences of hearing impairment. He also studies the perceptual and functional consequences of vestibular and bal-

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ance disorders. Dr. Zapala received a master of science degree from Utah State University in 1983 and a Ph.D. from the University of Memphis in 1993. Early in his career he developed the Mid-South Lions Infant Hearing Center and the Methodist/University of Tennessee Hearing and Balance Center at Methodist Healthcare in Memphis. He also served as a clinical professor in otolaryngology at the University of Tennessee. Dr. Zapala has published and taught in the areas of vestibular assessment and diagnostic audiology. He has served on the American Board of Audiology and the board of the American Academy of Audiology and the American Balance Society and is a past president of the Tennessee Academy of Audiology. He is the recipient of the Edward Dalstrom Distinguished Service Award by the Mid-South Lions Sight and Hearing Service (2001); Distinguished Service Award from the American Board of Audiology (2007); Jerger Mentor Award in Clinical Research (2009); Outstanding Alumnus of the Year by School of Communication Sciences and Disorders, University of Memphis (2013); and the Arnold D. Tuttle Award for co-authorship of the winning paper in Aviation, Space, and Environmental Medicine (2013). His research is supported by the Mayo Clinic, the Knowles Foundation, and NIH. He is currently funded by NIDCD to study how well consumers and audiologists can assess ear disease risk prior to hearing aid purchase.

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JAMA Otolaryngology–Head & Neck Surgery | Original Investigation

Trends in Health Care Costs and Utilization Associated With Untreated Hearing Loss Over 10 Years

Nicholas S. Reed, AuD; Aylin Altan, PhD; Jennifer A. Deal, PhD; Charlotte Yeh, MD; Alexander D. Kravetz, PharmD; Margaret Wallhagen, RN, PhD; Frank R. Lin, MD, PhD

IMPORTANCE Nearly 38 million individuals in the United States have untreated hearing loss, which is associated with cognitive and functional decline. National initiatives to address hearing loss are currently under way.

OBJECTIVE To determine whether untreated hearing loss is associated with increased health care cost and utilization on the basis of data from a claims database.

DESIGN, SETTING, AND PARTICIPANTS Retrospective, propensity-matched cohort study of persons with and without untreated hearing loss based on claims for health services rendered between January 1, 1999, and December 31, 2016, from a large health insurance database. There were 154 414, 44 852, and 4728 participants at the 2-, 5-, and 10-year follow-up periods, respectively. The study was conceptualized and data were analyzed between September 2016 and November 2017.

EXPOSURES Untreated hearing loss (ie, hearing loss that has not been treated with hearing devices) was identified via claims measures.

MAIN OUTCOMES AND MEASURES Medical costs, inpatient hospitalizations, total days hospitalized, 30-day hospital readmission, emergency department visits, and days with at least 1 outpatient visit.

RESULTS Among 4728 matched adults (mean age at baseline, 61 years; 2280 women and 2448 men), untreated hearing loss was associated with $22 434 (95% CI, $18 219-$26 648) or 46% higher total health care costs over a 10-year period compared with costs for those without hearing loss. Persons with untreated hearing loss experienced more inpatient stays (incidence rate ratio, 1.47; 95% CI, 1.29-1.68) and were at greater risk for 30-day hospital readmission (relative risk, 1.44; 95% CI, 1.14-1.81) at 10 years postindex. Similar trends were observed at 2- and 5-year time points across measures.

CONCLUSIONS AND RELEVANCE Older adults with untreated hearing loss experience higher health care costs and utilization patterns compared with adults without hearing loss. To further define this association, additional research on mediators, such as treatment adherence, and mitigation strategies is needed.

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More than 38 million adults in the United States experience hearing loss, and the prevalence increases with age such that two-thirds of adults older than 70 years have clinically meaningful hearing loss.[1] Based on current aging population trends, the number of Americans with hearing loss is projected to increase to more than 73 million by 2060.[2] Importantly, hearing loss has been associated with negative health outcomes, including cognitive decline,[3] incident dementia,[4] falls,[5] depression,[6] reduced quality of life,[7] and an increased number of emergency department visits[8] and hospitalizations.[9] However, fewer than 20% of adults with hearing loss report using hearing aids.[10]

Hearing loss recently received recognition as a national public health concern.[11-15] Reports from the President's Council of Advisors on Science and Technology[12] and the National Academies of Science, Engineering, and Medicine[11] have called for policy changes to better understand the influence of hearing loss on health in the United States and to address the condition. These initiatives resulted in the passage of the Over-the-Counter Hearing Aid Act of 2017.[15] However, there remains a limited understanding of the broader influence that hearing loss may have on health care cost and resource utilization.[8,16,17]

This study investigates the association between untreated hearing loss (based on the lack of evidence of hearing device use in claims data and the assumption that relatively few persons with hearing loss use hearing aids[10]) and health care costs and utilization over a 10-year period using claims data from a large, deidentified administrative claims database from a geographically diverse US health insurance plan.

Key Points

Question Is untreated hearing loss associated with higher health care costs and utilization?

Findings In this retrospective, propensity-matched cohort study of claims data, compared with no hearing loss, untreated hearing loss was associated with higher health care costs and a higher risk of 30-day hospital readmission over a 10-year period.

Meaning Untreated hearing loss may contribute to greater health care costs and utilization.

Methods

Data Source

This retrospective, propensity-matched cohort study used deidentified administrative claims data from the OptumLabs Data Warehouse (OLDW) to identify hearing products purchased or health services rendered between January 1, 1999, and December 31, 2016. Institutional review board approval and patient informed consent were not required because the deidentified data complies with the Health Insurance Portability and Accountability Act Privacy Rule. The OLDW includes deidentified claims data for more than 125 million privately insured and Medicare Advantage (MA) enrollees in a large, private, US health plan from 1993 to the present and represents a diverse population in terms of age, race/ethnicity, and US geographic region. The health plan provides comprehensive insurance coverage for physician, hospital, and prescription drug services, including Part D coverage for MA enrollees. The database includes socioeconomic information, such as race/ethnicity, household income, and education level, for approximately 73% of enrollees. This information was derived from a nationally recognized supplier of consumer marketing data and is a compilation of public data and derived predictive data. While the imputation methods used by this supplier are proprietary, imputation methods for race/ethnicity have been shown in previous studies to have moderate sensitivity (48%), excellent specificity (97%), and moderate positive predictive value (71%) for the purpose of identifying race.[18]

Outcome Variables

The primary outcome of this study was medical costs, measured as health plan–paid (HPP), out-of-pocket (OOP), and total paid (ie, the sum of all HPP and OOP) costs for all medical services reimbursed by health insurance during the follow-up period. Costs were adjusted to 2015 US dollars using the medical care component of the Consumer Price Index.[19] Secondary outcomes included medical costs not related to hearing services and measures of health care utilization, such as the number of inpatient hospitalizations, total days hospitalized, number of readmissions within 30 days of discharge, number of emergency department visits, and number of days with at least 1 outpatient visit (including visits for hearing-related services and visits for non–hearing-related services). Office visit days for hearing loss were defined as the total number of days during follow-up with at least 1 office visit related to hearing services.

Exposure

Older adults with and without hearing loss were identified from OLDW. Eligible participants were 50 years or older. Hearing loss status was determined by the presence of at least 2 claims separated by no more than 730 days with an *International Classification of Disease, 9th Revision, Clinical Modification* (*ICD-9-CM*) diagnosis code for hearing loss: V41.2 (problems with hearing), 388.01 (presbycusis), 389 (hearing loss), 389.1x (sensorineural hearing loss, excluding 389.12 [neural hearing loss, bilateral] and 389.14 [central hearing loss]), 389.2x (mixed conductive and sensorineural hearing loss) in any position during the identification period of January 1, 2000, to December 31, 2014. The date of the first claim was designated as the index date. To ensure that complete information was obtained, participants were required to have at least 12 months of continuous enrollment in the plan prior to the index date and at least 2 years of continuous enrollment after the index date. Exclusion criteria included evidence of hearing loss prior to the index date, first evidence of hearing loss experienced during an inpatient stay (indicating an acute issue), evidence of hearing device use via claims data before or within 2 years of the index date, and/or evidence of ototoxic drug use in the 12-month period prior to the index date. Furthermore, individuals were excluded if they had evidence of hearing loss secondary to correctable medical conditions (ie, via surgical measures) or hearing loss fundamentally different from typical peripheral age-related hearing loss (ie, central pathology) including

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sudden hearing loss (*ICD-9-CM* code, 388.2), hyperacusis (*ICD-9-CM* code, 388.42), acoustic nerve disorders (*ICD-9-CM* code, 388.5), otorrhea (*ICD-9-CM* code, 388.6x), otalgia (*ICD-9-CM* code, 388.7x), conductive hearing loss (*ICD-9-CM* code, 389.0x), neural hearing loss (*ICD-9-CM* code, 389.12), and/or central hearing loss (*ICD-9-CM* code, 389.14). A pool of candidate participants with no evidence of hearing loss diagnosis at any point was selected, with the index date set to a random date of service within the capture window. Three nested samples were created, based on data availability for 2-, 5-, and 10-year follow-up periods. The resulting samples are nonmutually exclusive (ie, participants who qualified for the 10-year sample also qualified for the 5- and 2-year samples).

Statistical Analysis

Because of suspected underlying differences in persons with and without hearing loss, matched cohorts were created for each of the 3 follow-up times using a 2-stage process. First, participants with untreated hearing loss were block-matched to persons with no evidence of hearing loss within the cohort year (2, 5, or 10), insurance type (commercial or MA), and cost deciles. Subsequently, nearest-neighbor 1:1 caliper-based greedy propensity score matching without replacement was used, with the following variables measured during the 1 year prior to the index date included in the propensity model: age,[2] sex, census geographic region, net worth, race/ethnicity, education level, Charlson Comorbidity Index,[20] number of office visits (natural log transformed, both linear and quadratic terms), number of inpatient stays, inpatient length of stay, number of emergency department visits, dementia, mild cognitive impairment, depression, stroke, myocardial infarction, coronary artery disease, breast cancer, prostate cancer, renal cell carcinoma, colorectal cancer, and baseline medical costs (evidence of any costs and total medical costs). Block matching on cost deciles was required owing to the skewed nature of cost, which can result in poorly matched cost distributions. Within each block, caliper matching was used to match persons with untreated hearing loss to the closest person without hearing loss with a propensity score within 0.2 SDs. Unmatched participants were excluded from analysis. The quality of the matched cohorts was assessed using absolute standardized differences (ASD). Following matching, no variable exhibited an ASD greater than 10%, indicating that persons with or without untreated hearing loss were balanced on baseline variables, including follow-up time.

Descriptive statistics were reported for all study measures and baseline covariates. Univariate comparisons were conducted according to the distribution of the data, using *t* tests, χ^2 tests, and Mann-Whitney *U* tests when appropriate. Statistical significance was assessed at the 2-sided 5% level unless otherwise indicated. Given the large sample size, it was expected a priori that formal statistical tests would show evidence of statistically significant but not clinically significant differences in baseline variables between patients with and without hearing loss even after matching.

Differences in means and proportions and associated 95% CIs are reported. The output of event modeling is also presented as incidence rate ratios, risk ratios, and absolute risk differences.[21] In addition to specifications with the cohort indicator only, multivariable analysis was conducted on the matched cohorts to evaluate whether residual confounding remained after matching. Covariates in these models included sociodemographics (eg, age, sex, geographic region, race/ethnicity, net worth), insurance type, and indicators of comorbidity and health-service use measured during the 12-month baseline period. Medical cost variables were analyzed using generalized linear models, assuming a gamma-distributed error and log link.[22] This assumption was tested using the modified Park test. The incremental cost of untreated hearing loss was calculated using recycled predictions to facilitate interpretation.[23] Negative binomial regression was used to model the number of inpatient hospitalizations and total days hospitalized. The 30-day hospital readmission and emergency department visits were modeled using a modified Poisson regression with robust standard errors and are presented as relative risks (RRs) with 95% CIs.[24] Marginal effects, standard errors, and 95% CIs for all multivariable models were calculated using the delta method.[25]

Analytic files were created using SAS software, version 9.4 (SAS Institute). All analyses were performed using R 3.3.2 (R Core Team, 2016), including R packages ggplot2, data.table, tableone, Rcpp, Zelig, attribrisk, lmtest, sandwich, modmarg, car, ggfortify, and survival; additional R code was custom created. Matching was done in C++ and R; the code is original and was written by one of us (A.D.K).

Results

Matching

Prior to propensity score matching, there were 77 310 participants with untreated hearing loss and 3 251 863 potential participants without hearing loss. Prior to matching, a greater proportion of persons in the untreated hearing loss cohort were MA enrollees, had greater net worth and education levels, and exhibited a greater level of comorbidity during the 12-month baseline period compared with persons with no evidence of hearing loss. These differences agree with previous research on characteristics of persons with hearing loss and access to hearing care.[1] Differences between cohorts were resolved via the matching process. All but 103 persons with hearing loss were matched, and unused data from 3 174 656 unexposed potential participants were dropped. Compared with persons who were included in the study, those persons without hearing loss who were excluded from the study were less likely to be MA enrollees (31.1% vs 17.5%), were younger (63.8 vs 59.5 years), were less likely to be in the highest net-worth bracket (25.5% vs 19.9%), were less likely to be white (60.4% vs 54.5%), and were less likely to be college educated (15.4%, vs 12.0%). Excluded individuals also had fewer office visits on average (13.4 vs 18.6 visits) and lower average medical costs ($7799 vs $8480) during the baseline year than retained participants had.

Demographic Characteristics

Table 1 lists the characteristics of the matched cohorts at 2-, 5-, and 10-year time points. Between 2000 and 2014, there

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Table 1. Participant Baseline Characteristics

Characteristic	No. (%)[a]					
	2-y Cohort		5-y Cohort		10-y Cohort	
	Untreated Hearing Loss (n = 77 207)	No Hearing Loss (n = 77 207)	Untreated Hearing Loss (n = 22 426)	No Hearing Loss (n = 22 426)	Untreated Hearing Loss (n = 2364)	No Hearing Loss (n = 2364)
Age, mean (SD)	63.80 (9.74)	63.79 (9.70)	61.71 (9.22)	61.70 (9.20)	61.03 (9.30)	61.05 (9.28)
Female	37 309 (48.3)	37 155 (48.1)	10 792 (48.1)	10 671 (47.6)	1150 (48.6)	1130 (47.8)
Race						
Asian	1707 (2.2)	1626 (2.1)	385 (1.7)	352 (1.6)	39 (1.6)	34 (1.4)
Black	4367 (5.7)	4420 (5.7)	1312 (5.9)	1373 (6.1)	144 (6.1)	162 (6.9)
Hispanic	3933 (5.1)	4039 (5.2)	1061 (4.7)	1050 (4.7)	89 (3.8)	95 (4.0)
Unknown	20 428 (26.5)	20 452 (26.5)	6282 (28.0)	6389 (28.5)	605 (25.6)	642 (27.2)
White	46 772 (60.6)	46 670 (60.4)	13 386 (59.7)	13 262 (59.1)	1487 (62.9)	1431 (60.5)
Region						
Midwest	21 896 (28.4)	21 951 (28.4)	6903 (30.8)	6796 (30.3)	861 (36.4)	830 (35.1)
Northeast	14 536 (18.8)	14 323 (18.6)	3966 (17.7)	3906 (17.4)	418 (17.7)	436 (18.4)
South	31 820 (41.2)	31 929 (41.4)	9205 (41.0)	9329 (41.6)	882 (37.3)	899 (38.0)
West	8955 (11.6)	9004 (11.7)	2352 (10.5)	2395 (10.7)	203 (8.6)	199 (8.4)
Net worth, $						
Unknown	22 874 (29.6)	22 951 (29.7)	6978 (31.1)	7137 (31.8)	673 (28.5)	718 (30.4)
<25 000	2771 (3.6)	2707 (3.5)	729 (3.3)	682 (3.0)	80 (3.4)	77 (3.3)
24 000-149 000	7610 (9.9)	7447 (9.6)	2038 (9.1)	1998 (8.9)	206 (8.7)	185 (7.8)
150 000-249 000	7678 (9.9)	7815 (10.1)	2047 (9.1)	2043 (9.1)	195 (8.2)	193 (8.2)
250 000-499 000	16 404 (21.2)	16 564 (21.5)	4745 (21.2)	4738 (21.1)	558 (23.6)	560 (23.7)
≥500 000	19 870 (25.7)	19 723 (25.5)	5889 (26.3)	5828 (26.0)	652 (27.6)	631 (26.7)
Education						
<12th grade	231 (0.3)	219 (0.3)	39 (0.2)	37 (0.2)	Masked data[b]	Masked data[b]
High school diploma	14 647 (19.0)	14 568 (18.9)	3937 (17.6)	3890 (17.3)	380 (16.1)	386 (16.3)
<Bachelor's degree	31 981 (41.4)	32 166 (41.7)	9139 (40.8)	9072 (40.5)	992 (42.0)	965 (40.8)
≥Bachelor's degree	12 068 (15.6)	11 886 (15.4)	3621 (16.1)	3594 (16.0)	444 (18.8)	430 (18.2)
Unknown	18 280 (23.7)	18 368 (23.8)	5690 (25.4)	5833 (26.0)	<546	<585
Medicare	24 028 (31.1)	24 028 (31.1)	6025 (26.9)	6025 (26.9)	755 (31.9)	755 (31.9)
Baseline utilization, mean (SD)						
Inpatient stays	0.14 (0.47)	0.14 (0.43)	0.12 (0.42)	0.12 (0.39)	0.10 (0.34)	0.10 (0.33)
Total inpatient, d	0.79 (4.94)	0.82 (4.30)	0.61 (3.31)	0.64 (3.22)	0.54 (2.49)	0.54 (2.36)
Outpatient encounters	18.73 (18.18)	18.63 (17.84)	17.17 (16.07)	17.13 (15.67)	15.55 (14.35)	14.91 (13.33)
ED visits	0.32 (0.77)	0.32 (0.75)	0.27 (0.69)	0.27 (0.66)	0.24 (0.59)	0.22 (0.54)
Medical costs, $	8311.24 (20 645.18)	8479.90 (19 165.55)	7418.90 (17 586.02)	7536.63 (15 933.56)	6365.09 (14 413.20)	6272.95 (11 928.82)
Baseline comorbidities						
Charlson Comorbidity Index, mean (SD)	1.12 (1.71)	1.12 (1.68)	0.89 (1.48)	0.90 (1.47)	0.69 (1.24)	0.68 (1.20)
Acute myocardial infarction, No. (%)	324 (0.4)	301 (0.4)	87 (0.4)	76 (0.3)	13 (0.5)	14 (0.6)
Depression	8358 (10.8)	8325 (10.8)	2147 (9.6)	2109 (9.4)	201 (8.5)	192 (8.1)
Dementia	2104 (2.7)	2189 (2.8)	381 (1.7)	411 (1.8)	14 (0.6)	18 (0.8)
Stroke	1963 (2.5)	1953 (2.5)	466 (2.1)	437 (1.9)	35 (1.5)	30 (1.3)
Mild cognitive impairment	107 (0.1)	113 (0.1)	Masked data[b]	Masked data[b]	Masked data[b]	Masked data[b]
Coronary artery disease	8744 (11.3)	8850 (11.5)	2119 (9.4)	2195 (9.8)	208 (8.8)	224 (9.5)

Abbreviations: ASD, absolute standard difference; ED, emergency department.

[a] Absolute standard difference was less than 10% for all comparisons.

[b] Sample size masked owing to small sample size.

were 154 414, 44 852, and 4728 participants with and without untreated hearing loss who met study inclusion criteria and had 2, 5, and 10 years of follow-up, respectively. As detailed in Table 1, across the 3 samples of matched persons at 2-, 5-, and 10-year follow-up, the mean age range was 61 to 64 years, 47.6% to 48.6% of participants were women, and 59.1% to

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Table 2. Postpropensity Score Matching, Unadjusted Health-Service Costs and Utilization for Untreated Hearing Loss vs No Hearing Loss Groups

Follow-up Measure	2-y Cohort		5-y Cohort		10-y Cohort	
	Untreated Hearing Loss (n = 77 207)	No Hearing Loss (n = 77 207)	Untreated Hearing Loss (n = 22 426)	No Hearing Loss (n = 22 426)	Untreated Hearing Loss (n = 2364)	No Hearing Loss (n = 2364)
Medical costs, mean (SD), $	18 744.36 (40 628.30)	14 892.70 (32 038.23)	41 386.64 (64 387.99)	30 239.23 (4259.55)	70 631.60 (84 918.08)	48 198.08 (60 954.44)
Difference (95% CI)	3851.70 (3486.82-4216.59)		11 147.4 (10 086.34-12 208.47)		22 433.52 (18 218.61-26 648.43)	
Non–hearing loss medical costs, mean (SD), $	18 362.40 (40 613.22)	14 892.70 (32 038.23)	40 916.95 (64 371.86)	30 239.23 (49 259.55)	70 075.82 (84 894.26)	48 198.08 (60 954.44)
Difference (95% CI)	3469.70 (3104.82-3834.59)		10 677.72 (9616.81-11 738.62)		21 877.74 (17 663.61-26 091.87)	
Inpatient stays, mean (SD)	0.28 (0.78)	0.24 (0.69)	0.62 (1.34)	0.48 (1.08)	1.24 (2.05)	0.86 (1.60)
Difference (95% CI)	0.04 (0.03-0.05)		0.14 (0.12-0.16)		0.38 (0.27-0.48)	
Inpatient days, mean (SD)	1.57 (6.78)	1.31 (5.43)	3.25 (9.83)	2.50 (8.25)	6.56 (14.81)	4.46 (10.88)
Difference (95% CI)	0.26 (0.20-0.33)		0.75 (0.58-0.92)		2.1 (1.36-2.84)	
Outpatient visit days, mean (SD)	40.18 (36.49)	32.72 (35.18)	90.76 (72.64)	68.62 (62.21)	168.05 (123.25)	115.85 (95.37)
Difference (95% CI)	7.47 (7.11-7.83)		22.14 (20.89-23.39)		52.19 (45.91-58.48)	
Non–hearing loss office visit days, mean (SD)	39.62 (36.17)	32.47 (35.00)	89.69 (71.99)	68.10 (61.76)	166.00 (121.14)	115.13 (94.79)
Difference (95% CI)	7.15 (6.80-7.51)		21.59 (20.35-22.83)		50.87 (44.67-57.07)	
ED visits, mean (SD)	0.64 (1.37)	0.52 (1.30)	1.39 (2.85)	1.10 (2.14)	2.61 (3.61)	1.81 (2.77)
Difference (95% CI)	0.11 (0.10-0.12)		0.29 (0.24-0.33)		0.8 (0.62-0.98)	
30-d Readmission, No. (%)	1542 (2.0)	1198 (1.6)	829 (3.7)	646 (2.9)	164 (6.9)	114 (4.8)
Difference (95% CI)	0.45 (0.31-0.58)		0.82 (0.48-1.15)		2.12 (0.73-3.50)	

Abbreviation: ED, emergency department.

62.9% of participants were white. The percentage of patients with MA insurance ranged from 26.9% to 31.9% (Table 1). Average Charlson comorbidity index scores ranged from 1.12 in the 2-year cohort to 0.68 in the 10-year cohort. Health care utilization was similar across the 3 samples, with the exception that the 10-year cohort had fewer outpatient encounters (mean, 15.55 in the untreated hearing loss group and 14.91 in the no hearing loss group) compared with the 2-year cohort (mean, 18.73 in the untreated hearing loss group and 18.63 in the no hearing loss group) and the 5-year cohort (mean, 17.17 in the untreated hearing loss group and 17.13 in the no hearing loss group).

Health Care Cost

Table 2 details the postmatching unadjusted mean health care cost and resource utilization at 2-, 5-, and 10-year time points, differences between cohorts, and associated 95% CIs. Compared with no hearing loss, untreated hearing loss was associated with higher medical costs across all 3 cohorts. Unadjusted total cumulative medical costs were 25.9%, 36.9%, and 46.5% higher over the 2-, 5-, and 10-year periods for individuals with untreated hearing loss compared with that of those without hearing loss. This amounted to a mean difference of $3852 (95% CI, $3487-$4217), $11 147 (95% CI, $10 086-$12 208), and $22 434 (95% CI, $18 219-$26 648) higher total health care costs for the individuals with untreated hearing loss compared with health care costs for those without hearing loss (**Figure 1** and **Table 3**). Unadjusted OOP costs were 19.1%, 23.3%, and 34.0% higher over the 2-, 5-, and 10-year periods, respectively, for patients with untreated hearing loss than for patients with no hearing loss. Notably, among the untreated hearing loss cohort, mean costs specifically related to hearing loss were relatively minor within health care expenditures of $382, $470, and $556 at 2, 5, and 10 years, respectively. Results from adjusted multivariable models were substantively unchanged.

Health Resource Utilization

Participants with untreated hearing loss experienced significantly more inpatient stays compared with participants without hearing loss at 2 years (incident rate ratio [IRR], 1.20; 95% CI, 1.15-1.25), 5 years (IRR, 1.30; 95% CI, 1.23-1.38), and 10 years (IRR, 1.47; 95% CI,1.29-1.68) following the index date. Moreover, participants with untreated hearing loss spent more days in the hospital on average with 0.26 (95% CI, 0.20-0.33), 0.75 (95% CI, 0.58-0.92), and 2.10 (95% CI, 1.36-2.84) more days spent in the hospital over the 2-, 5-, and 10-year periods, respectively (Table 2). Similar results were found for outpatient visits. Over the 2 years following the index date, participants with untreated hearing loss had an average of 7.5 (95% CI, 7.1-7.8) more outpatient visit days. By 10 years, patients with untreated hearing loss had 52.2 (95% CI, 45.9-58.5) more outpatient visit days. Participants with untreated hearing loss had a 16.9% increased risk of an emergency department visit within 2 years (RR, 1.17; 95% CI, 1.15-1.19), a 16.8% increased risk over 5 years (RR, 1.17; 95% CI, 1.15-1.19), and a 17.0% increased risk over 10 years (RR, 1.17; 95% CI, 1.12-1.22). **Figure 2** displays the unadjusted difference in risk of 30-day readmissions. Partici-

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pants with untreated hearing loss had a 29% increased risk of a 30-day hospital readmission within 2 years (RR, 1.29; 95% CI, 1.19-1.39), a 28% increase in risk over 5 years (RR, 1.28; 95% CI, 1.16-1.42), and a 44% increase in risk over 10 years (RR, 1.44; 95% CI, 1.14-1.81). Results of the adjusted multivariable analysis were similar to those of the unadjusted analyses.

Discussion

In a matched cohort study of up to 154 414 individuals in a large administrative claims database, untreated hearing loss was associated with higher health care costs, increased risk of 30-day hospital readmission, more inpatient and outpatient stays, increased risk of emergency department visits, and longer length of hospital stays at 2, 5, and 10 years following initial hearing loss diagnosis. Over a 10-year period, persons with untreated hearing loss incurred an average $22 434 more in health care costs than persons without evidence of hearing loss. Importantly, the magnitude of most of these associations appears to compound over time. These findings suggest that persons with untreated hearing loss experience significantly higher health care costs and higher health care utilization rates than those without hearing loss. To our knowledge, this is the first 10-year analysis of the association of untreated hearing loss with health care cost and utilization measures using real-world claims data.

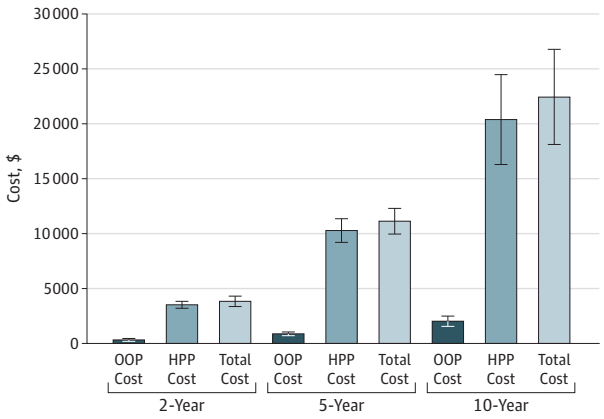
Research on health care costs related to hearing loss is sparse and varies because studies have often examined the overall societal economic influence of hearing loss on projected medical expenses and lost labor productivity rather than on the direct and indirect health care costs that were actually incurred.[16,26] On the basis of a simulated model from California Medicaid data, medical costs directly related to hearing loss diagnosis and treatment 1 year after diagnosis were $1292 per person older than 65 years with any type of hearing loss (ie, mild to functionally deaf).[27] Furthermore, according to data from the 2000 to 2010 Medical Expenditure Panel Surveys (pooled), which includes self-reported hearing loss, persons older than 65 years with hearing loss had, on average, an estimated $392 (95% CI, $277-$392) in excess medical expenditures.[8] These simulated results are relatively low compared with the present study's results.

In the only other, to our knowledge, claims-based study examining hearing loss and medical expenditures, health care costs in patients with hearing loss were substantially higher than those of patients without hearing loss.[17] Researchers conducted a matched analysis of 561 764 individuals with and without hearing loss claims (based on *ICD-9-CM* codes V41.2, V72.1x, 388.00, 388.01, 388.40, 388.43, 388.44, 388.5, 389.1x, and 389.2x) over an 18-month period using the Truven Health MarketScan database. They found that those with hearing loss spent more, on average, in health care costs ($14 165; 95% CI, $14 091-$14 239) than did persons without hearing loss ($10 629; 95% CI, $10 576-$10 681). The difference of $3536 over a 1.5-year period is relatively similar to the difference of $4764 over the 2-year period observed in the present study.

The association between hearing loss and health care service utilization remains mostly unexplored. Two studies found that hearing loss was associated with an increased risk of hospitalization based on objective audiometric measures and self-reported hospitalization rates.[9,28] In 1 study, individuals with hearing loss had a 16% (HR, 1.16; 95% CI, 1.04-1.29) and 21% (HR, 1.21; 95% CI, 1.06-1.38) greater risk of hospitalization compared with those without hearing loss.[9] In addition, the previously noted study of Medical Expenditure Panel Survey data reported increased odds of emergency department visits associated with hearing loss.[8] Our results are broadly consistent with those of these earlier studies and further suggest that hearing loss is associated with increased average length of hospital stay and risk of 30-day readmissions.

The observed associations between hearing loss and health care utilization and costs is possibly explained by the potential influence of hearing loss on cognitive (eg, particularly dementia),[3,4,29,30] physical (eg, falls),[5] and psychosocial[6,31] function. The association between hearing loss and health outcomes may be further mediated by the effects of hearing loss on patient-clinician communication.[32,33] Poor communication has previously been associated with poorer health care

Figure 1. Difference in Unadjusted Mean Patient-Paid, Plan-Paid, and Total Costs for Patients With Untreated Hearing Loss vs Patients With No Hearing Loss



Error bars represent the 95% CI. HPP indicates health plan–paid costs; OOP, out-of-pocket costs.

Table 3. Difference in Unadjusted Mean Costs for Untreated Hearing Loss vs No Hearing Loss Groups

Cohort	Out-of-Pocket Costs (95% CI), $	Health Plan–Paid Costs (95% CI), $	Total Costs (95% CI), $
2-Year	334 (310-358)	3518 (3164-3871)	3852 (3487-4217)
5-Year	876 (792-961)	10 271 (9255-11 287)	11 147 (10 086-12 208)
10-Year	2030 (1624-2436)	20 403 (16 446-24 360)	22 434 (18 219-26 648)

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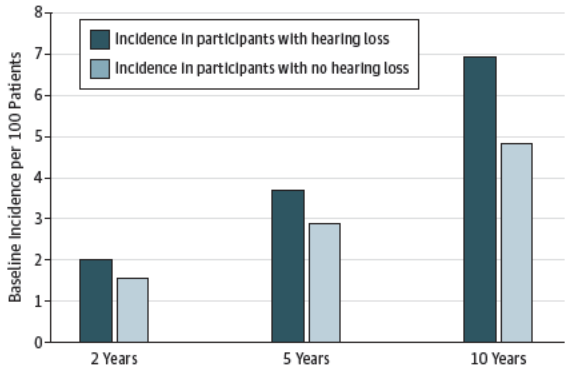
outcomes, poor treatment adherence, lower patient satisfaction, and increased health care costs.[34,35] This study supports the need for future research to understand the role of hearing loss on patient-clinician communication and the potential influence of hearing care, including devices and services, in mitigating the overall association between hearing loss and health care cost. Importantly, given the minimal risk involved and the potential reward, health care clinics and/or institutions could consider awareness and communication training for clinicians and screening programs to identify and address hearing loss as a potential communication barrier.

Limitations

This study used a large, deidentified, geographically diverse database of administrative claims that includes health encounter information for more than 125 million commercial and MA insurance enrollees in the United States. There are several limitations inherent to claims data, including its reliance on coding processes designed for billing purposes rather than research. Capturing the exposure (ie, untreated hearing loss) in a population is likely limited to individuals who feel that hearing loss is a great burden on their lifestyle, those with the means to seek and continuously maintain health care, and those with coverage for hearing services. Because of limitations in the coding and reimbursement for hearing care and hearing devices under some health plan policies, and because some individuals do not seek care for hearing loss, the group without hearing loss diagnosis may include individuals with uncoded hearing loss. However, such a bias would likely lead to underestimation of the differences between these cohorts. Furthermore, hearing device use as a covariate in these data would be unreliable given that many sales occur outside the medical claims data and that access is highly related to socioeconomic status; thus both cohorts may include individuals with treated hearing loss. Again, this resultant bias may underestimate the differences between cohorts. Finally, claims data do not account for indirect costs of untreated hearing loss, such as lost productivity and wages.

Other limitations not related to the data source exist. Though examination of ASDs suggests well-matched cohorts, after matching, a few statistically significant differences were still present between cohorts. However, these differences are to be expected based on the large sample size, and likely do not represent clinically meaningful differences between cohorts. As with most analyses of observational data, despite careful matching, it is possible that residual unmeasured confounding exists owing to a lack of randomized treatment allocation, prohibiting causal inferences from these data. Furthermore, findings may be affected by detection bias because individuals with hearing loss may have frequent interaction with the health care system. Finally, survival bias in the 10-year cohort and a lack of Medicaid and uninsured participants in the database may limit generalizability.

Figure 2. Unadjusted Difference in 30-Day Readmissions for Participants With Untreated Hearing Loss vs Participants With No Hearing Loss



Bar graph represents the unadjusted difference in baseline incidence of 30-day readmissions in the 2- (risk difference [RD], 0.45; 95% CI, 0.31-0.58), 5- (RD, 0.82; 95% CI, 0.49-1.15), and 10- (RD, 0.45; 95% CI, 0.49-1.15) year cohorts with untreated and no hearing loss.

Conclusions

The present study suggests that hearing loss is associated with increased health care expenditures and resource utilization. Notably, hearing loss was associated with an average 46.5% increase in health care costs and a 44% increase in risk of 30-day readmission over a 10-year period. Awareness of the burden that hearing loss places on individuals, insurers, and hospitals contributes to the growing evidence of hearing loss as a public health concern.

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Acquisition, analysis, or interpretation of data: Reed, Altan, Deal, Yeh, Kravetz, Wallhagen.
Drafting of the manuscript: Reed, Altan, Kravetz, Wallhagen.
Critical revision of the manuscript for important intellectual content: Reed, Altan, Deal, Yeh, Wallhagen, Lin.
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Healthcare Costs for Insured Older U.S. Adults with Hearing Loss

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OBJECTIVES: To measure 18-month healthcare cost difference attributable to hearing loss (HL) in older adults.
DESIGN: Matched cohort.
SETTING: Retrospective analysis of administrative healthcare bills of insured older Americans.
PARTICIPANTS: Older U.S. adults with health insurance in 3 cohorts matched based on HL diagnosis using propensity score methods (N 904,750).
MEASUREMENTS: Comparison groups were defined as those with and without HL diagnosis using *International Classification of Diseases, Ninth Revision*, diagnosis codes from billing records. Outcomes measured include 18-month total healthcare payments and healthcare payments broken down according to payment type (inpatient, outpatient, prescription, hearing services). Three comparison cohorts were examined for these outcomes: individuals covered by Medicare plus supplemental private insurance (Cohort 1, n 782,216), those covered only under Medicare (Cohort 2, n 105,296), and those within the Medicare sample that were dually eligible for Medicare and Medicaid coverage (Subcohort 3, n 17,238). The quality of the propensity score match was examined using standardized differences in means or proportions between all matched covariates, and cost outcomes were analyzed using multiple generalized linear regression models.
RESULTS: Fully adjusted models showed significantly higher 18-month healthcare payments for individuals with a diagnosis of HL without indication of use of hearing services than in those without a HL diagnosis in the 3 samples (payment differences: $3,587 Cohort 1, $3,779 Cohort 2, $4,657 Subcohort 3; all p<.001). Payment differences were also found between individuals with HL and indications of hearing services and those without HL.
CONCLUSION: We observed more than 20% higher total healthcare payments over 18 months for a group of insured individuals with HL regardless of insurance type or hearing services use, indicating that negative health-related effects of HL may increase healthcare use unrelated to HL. Thus, clinical care to ameliorate HL may improve overall health. J Am Geriatr Soc 66:1546–1552, 2018.

Key words: healthcare costs; hearing loss; age-related hearing loss; presbyacusis

Presbyacusis, or age-related hearing loss (HL), is a prevalent medical problem in older adults[1] that has been found to be associated with perceived problems in access to medical care,[2] negative life events such as incident dementia,[3,4] higher rates of falls,[5] poorer cognitive functioning,[6] higher risk of death in men,[7] poorer health-related quality of life,[8–10] and social isolation.[11]

HL is among the most common chronic conditions of aging, with 26.2 million individuals aged 50 and older reporting HL.[3] HL is estimated to affect 63% of the Medicare eligible population aged 70 and older,[1] but only approximately 17% of older U.S. adults with HL use hearing aids.[12] Given these statistics, we might expect HL to be defined as an important public health problem and the target of efforts to improve population health, particularly in view of the projected increases in the aging population, but Healthy People 2020, which identifies the U.S. nationwide health improvement priorities, reports for 2007 that only 162.7 individuals per 1,000 people aged 20 to 69 with HL had ever used a hearing aid.[13] The stated 2020 goal is to increase this rate to 179 per 1,000 individuals by 2020[13]—an increase of 0.8% per year, indicating that this condition is not a high priority target for the nation's health. It is possible that HL in older adults is so common that it is not perceived as a problem or is simply considered a normal consequence of aging that requires diagnosis

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and intervention only if the individual requests it. An alternative view is that decision-makers, such as payors, legislatures, and providers, have a pervasive and persistent lack of understanding of the potential broader health ramifications of HL.

Identification of associations between HL and medical care use is an important health policy step for reclassifying HL from a "condition" to that of a "problem" in the minds of U.S. health policy-makers. This is an essential step for policy changes aimed at increasing awareness of HL and the need for better identification of individuals with HL and improving access to and use of hearing healthcare services.

HL has been associated with social isolation in older adults[11] and frustration.[9] Recent evidence indicates that individuals with HL have significantly higher odds of rating their satisfaction with communication with their physicians below the median (doctor explained things clearly, listened carefully, showed respect for what they had to say, afforded them adequate time) and were less likely to rate the overall quality of their healthcare above the median.[14]

People with HL may feel dissatisfied with communication with their physician and may choose not to make medical visits because they are stressful and frustrating.[15,16] This is an important satisfaction concern that may become an access-to-care barrier.[17] Less-timely healthcare-seeking behavior could lead to a longer time between visits and exacerbate healthcare conditions.[18] These gaps in care may result in increases in use of more-acute, more-expensive healthcare services, resulting in higher healthcare costs.[18] Few studies have examined healthcare cost differences according to HL. To begin to measure the effect of HL on overall healthcare use, our group recently published a cost and usage study of middle-aged privately insured adults that found 33% higher average healthcare services costs over 18 months in a well-matched group of individuals with HL as compared to those without HL.[19]

To examine whether similar results may be found in an older publically insured population, the current study compared the average healthcare costs of a U.S. sample of older adults with and without HL matched on all potential and available cost risk factors and chronic diseases.

METHODS

We extracted information on 2 cohorts of individuals aged 65 and older with an *International Classification of Diseases, Ninth Revision* (ICD-9) code fo HL (V41.2, V72.1x, 388.00, 388.01, 388.40, 388.43, 388.44, 388.5, 389.1x, 389.2x; Supplementary Table S1) and propensity score matched[20] them to a comparison group based on age, sex, ethnicity, U.S. region, insurance type, beneficiary status, Charlson Comorbidity Index score,[21] outpatient services use, and baseline presence of 22 chronic conditions (conductive heart failure, congestive heart failure, pulmonary heart disease, chronic obstructive pulmonary disease, asthma, diverticulitis, renal failure, rheumatoid arthritis, systemic lupus erythematosus, diabetes, human immunodeficiency virus, hepatitis, cystic fibrosis, sickle cell anemia, dementia, schizophrenia, Parkinson's disease, multiple sclerosis, epilepsy, heart valve disorder, carditis or cardiomyopathy, and hypertension with complications).

Information on the cohort of individuals with Medicare plus private insurance (Cohort 1) was extracted using participants the 2009 to 2013 Truven Health MarketScan Research database with at least 18 months of continuous coverage. Information on the second (Cohort 2) and third (Subcohort 3) cohorts was extracted from the 2012–2013 Medicare Limited Data Set standard analytic files national 5% sample. The Medicare (Cohort 2) cohort included individuals who had Medicare coverage as their primary source of insurance. The dually eligible (Subcohort 3) subgroup included individuals within the Medicare group who were dually eligible for Medicaid. Exclusion criteria, variable definitions, matching, and analysis methods were consistent across the 3 samples, with the exception of race, which was unavailable in the Market Scan data (Cohort 1). Each cohort was propensity score matched based on covariates likely to influence selection into a HL group or if those baseline variables that may disproportionally influence cost of care (i.e. confound cost as an outcome).[22] Matching was based on the nearest-neighbor greedy-matching algorithm without caliper distance limits and without replacement.[23] Goodness of match was examined and confirmed for each matched cohort by statistically comparing all matching characteristics using descriptive statistics and with standardized differences in means and proportions of each matching variable being less than 0.2.[24]

Six months of lookback period data were used for each individual to develop the baseline variables for matching. Individuals with diagnoses of late effects of stroke, coma, or paralysis were excluded. Healthcare bills for up to 18 months postbaseline follow-up were summed according to participant to calculate total payments for inpatient, outpatient, prescription medication, and hearing services. Hearing services were defined as ICD-9 procedure codes 9548, 69710, 69711, V532, V5014, V5267, V5298, V5010, V5011, or V5275 (Supplementary Table S2).

Statistical Analysis

Descriptive statistics and crude outcome estimates for the HL and comparison groups were compared using chi-square tests for categorical variables and t-tests (normally distributed) or Mann-Whitney U- or Wilcoxon tests (nonnormally distributed) for continuous variables. P-values for descriptive statistics are not shown because sample sizes were so large as to result in statistically significant differences even if they were not clinically important. Differences between matched groups were tested using standardized differences in means or proportions.

Outcomes analysis for total payments and payment type subgroups were compared according to group using gamma-distributed generalized linear log-linked multivariable regression models, adjusting for baseline covariates. The use of a gamma-distributed generalized linear model with a log-transformed link function has been shown to be a good was to estimate healthcare cost distributions

Table 1. Characteristics According to Hearing Loss (HL)

Characteristic	Cohort 1		Cohort 2		Subcohort 3	
	HL, n = 391,108	No HL, n = 391,108	HL, n = 75,148	No HL, n = 75,148	HL, n = 8,729	No HL, n = 8,509
Age, meant ± SD	75.9 ± 7.8	75.9 ± 7.8	77.1 ± 8.0	77.0 ± 7.9	79.0 ± 8.2	78.6 ± 8.1
Charlson Comorbidity Index, meant ± SD	0.1 ± 0.4	0.1 ± 0.4	0.2 ± 0.7	0.1 ± 0.7	0.3 ± 1.0	0.2 ± 0.9
Follow-up, days, meant ± SD	540.0 ± 29.3	537.5 ± 33.2	450.7 ± 91.5	437.5 ± 95.0	440.4 ± 97.2	432.1 ± 97.7
Sex, n (%)						
Male	192,038 (49.1)	194,133 (49.6)	29,221 (38.9)	29,265 (38.9)	2,343 (26.8)	2,298 (27.0)
Female	199,070 (50.9)	196,975 (50.4)	45,927 (61.1)	45,883 (61.1)	6,386 (73.2)	6,211 (73.0)
White, n (%)	NA	NA	66,669 (88.7)	66,958 (89.1)	5,304 (60.8)	5,288 (62.2)
Hearing services, n (%)	109,968 (28.1)	0 (0.0)	2,873 (3.8)	0 (0.0)	262 (3.0)	0 (0.0)
Chronic conditions, n (%)						
Hypertension with complications	51,411 (13.1)	48,711 (12.5)	47,346 (63.0)	47,647 (63.4)	6,506 (74.5)	6,339 (74.5)
Diabetes mellitus	21,520 (5.5)	20,538 (5.3)	20,147 (26.8)	20,222 (26.9)	3,398 (38.9)	3,238 (38.1)
Conductive heart failure	16,499 (4.2)	15,146 (3.9)	16,504 (22.0)	16,431 (21.9)	2,058 (23.6)	1,890 (22.2)
Heart valve disorder	8,802 (2.6)	7,737 (2.0)	8,364 (11.1)	8,051 (10.7)	1,005 (11.5)	905 (10.6)
Chronic obstructive pulmonary disease, asthma, diverticulitis	8,522 (2.2)	7,561 (1.9)	7,958 (10.6)	8,016 (10.7)	1,405 (16.1)	1,335 (15.7)
Congestive heart failure	4,195 (1.1)	3,518 (0.9)	5,545 (7.4)	5,237 (7.0)	1,229 (14.1)	1,034 (12.2)
Pulmonary heart disease	1,024 (0.3)	845 (0.2)	1,551 (2.1)	1,366 (1.8)	178 (2.0)	153 (1.8)
Asthma	4,943 (1.3)	4,313 (1.1)	3,946 (5.3)	3,930 (5.2)	624 (7.2)	584 (6.9)
Diverticulitis	4,625 (1.2)	4,213 (1.1)	4,082 (5.4)	4,026 (5.4)	410 (4.7)	374 (4.4)
Chronic renal failure	3,791 (1.0)	3,467 (0.9)	4,889 (6.5)	4,691 (6.2)	819 (9.4)	717 (8.4)
Dementia, schizophrenia	2,827 (0.7)	2,473 (0.6)	4,428 (5.9)	4,250 (5.7)	1,254 (14.4)	1,103 (13.0)
Rheumatoid arthritis	2,082 (0.5)	1,778 (0.5)	1,947 (2.6)	1,880 (2.5)	275 (3.2)	246 (2.9)
Carditis, cardiomyopathy	1,909 (0.5)	1,550 (0.4)	1,829 (2.4)	1,702 (2.3)	222 (2.5)	187 (2.2)
Epilepsy	888 (0.2)	731 (0.2)	846 (1.1)	793 (1.1)	181 (2.1)	167 (2.0)
Parkinson's disease	833 (0.2)	700 (0.2)	902 (1.2)	897 (1.2)	167 (1.9)	148 (1.7)
Systemic lupus erythematosus	688 (0.2)	620 (0.2)	633 (0.8)	602 (0.8)	55 (0.6)	53 (0.6)
Hepatitis	382 (0.1)	334 (0.1)	490 (0.7)	390 (0.5)	156 (1.8)	110 (1.3)
Multiple sclerosis, epilepsy	193 (0.1)	174 (0.0)	84 (0.1)	81 (0.1)	9 (0.1)	5 (0.1)
Schizophrenia	104 (0.0)	82 (0.0)	192 (0.3)	153 (0.2)	113 (1.3)	93 (1.1)
Human immunodeficiency virus	62 (0.0)	43 (0.0)	46 (0.0)	35 (0.0)	13 (0.2)	13 (0.2)
Cystic fibrosis	12 (0.0)	10 (0.0)	10 (0.0)	8 (0.0)	1 (0.0)	2 (0.0)
Sickle cell anemia	12 (0.0)	12 (0.0)	9 (0.0)	8 (0.0)	2 (0.0)	0 (0.0)

Cohort 1 is Medicare plus privately insured cohort, Cohort 2 is Medicare only cohort, Subcohort 3 is subgroup of Cohort 2 also eligible for Medicaid.
SD standard deviation; NA not available.

that are generally right skewed, especially when the log-transformed dependent variables do not have heavy tails or excessive heteroscedasticity.[25] Adjustors considered for inclusion in each outcome model include demographic characteristics, chronic conditions, Charlson Comorbidity Index score, number of days in the follow-up period, and use of hearing services. Variables removed from the final models included only those with little to no predictive or confounding effect and no influence on model fit (Akaike Information Criterion) or primary estimate (beta), which resulted in final models including all covariates except the rarer chronic conditions (multiple sclerosis, schizophrenia, human immunodeficiency virus, cystic fibrosis, sickle cell anemia).[26] Sensitivity analyses to assess the effect of hidden bias for each outcome were performed using previously defined methods[27] that provide a way to quantify the robustness of the results when potential selection bias due to unmeasured confounders is simulated. SAS version 9.4 (SAS Institute, Inc., Cary, NC) was used for analysis with p-values considered statistically significant for $\alpha<.05$. The Medical University of South Carolina institutional review board reviewed the study protocol and deemed that it constituted nonhuman research.

RESULTS

Members of Cohort 1 had an average age of 76±7.8, had low comorbidity, and were split evenly between men and women in the HL and no-HL groups (Table 1). Just over 28% of Cohort 1 members with HL received hearing services (Table 1). This cohort had the lowest proportion of chronic illnesses of the 3 groups. The matched Cohort 2

Table 2. Unadjusted 18-Month Healthcare Payments and Hospital Length of Stay

Cohort	HL	HL with Hearing Services	No HL
	Mean ± Standard Deviation		
Cohort 1			
Total, $	21,164 ± 39,824	20,078 ± 45,248	17,569 ± 37,708
Hospital, $[a]	25,837 ± 45,079	19,446 ± 37,846	24,216 ± 44,267
Length of stay, days[a]	6.5 ± 10.7	5.8 ± 7.9	7.4 ± 11.5
Outpatient, $	10,947 ± 24,229	10,551 ± 35,751	8,499 ± 22,717
Hearing services, $	0	2,056 ± 1,194	0
Cohort 2			
Total, $	13,129 ± 21,983	11,848 ± 19,074	10,036 ± 19,789
Hospital, $[a]	18,557 ± 23,831	17,268 ± 18,063	17,814 ± 22,456
Length of stay, days[a]	9.3 ± 12.9	8.8 ± 10.5	9.4 ± 12.8
Outpatient, $	4,655 ± 5,776	3,919 ± 4,544	2,989 ± 1,919
Hearing services, $	0	3,414 ± 3,325	0
Subcohort 3			
Total, $	18,193 ± 29,070	14,658 ± 20,894	13,453 ± 23,376
Hospital, $[a]	21,662 ± 29,828	16,380 ± 19,539	19,588 ± 23,556
Length of stay, days[a]	11.5 ± 15.5	9.1 ± 12.4	10.9 ± 13.8
Outpatient, $	5,428 ± 6,933	3,978 ± 4,259	3,376 ± 5,188
Hearing services, $	0	1,296 ± 1,929	0

Cost of healthcare services estimated as sum of insurance and patient payments in real 2010 2013 US$.
Cohort 1 is Medicare plus privately insured cohort, Cohort 2 is Medicare only cohort, Subcohort 3 is the subgroup of Cohort 2 also eligible for Medicaid.
[a]Includes only participants admitted to the hospital.
HL hearing loss.

had an average age of 77 and was 61.1% female and 89% white (Table 1). Members of Cohort 2 with HL included only 3.8% of participants with an indication of billed hearing services.

Members of the Cohort 2 were more likely that those in Cohort 1 to have a number of chronic conditions. For example, 63% of Cohort 2 and 13% of Cohort 1 have a hypertension diagnosis (Table 1).

Subcohort 3, a subgroup of the Medicare matched cohort, were slightly older (mean 79), more likely to be female (73%), and more racially diverse (63% white, 37% non-white) than Cohort 2. This subgroup had the highest proportion of chronic conditions, with a particularly high proportion of dementia diagnoses (>13%) (Table 1). The propensity score matching within Cohorts 1 and 2 produced very similar groups at baseline. Subcohort 3, although not formally matched, have similar baseline characteristics between the HL diagnosed and not diagnosed comparison groups.

Total unadjusted mean hospital payments were consistently highest in the HL group and lowest in the no-HL group in each of the 3 cohorts, with the HL group with hearing services falling between the 2 (Table 2). When comparing total 18-month healthcare payments of the 3 cohorts, Cohort 1 had the highest (average $21,164 per person), followed by Subcohort 3 ($18,193), and then ($13,129) (Table 2).

Adjusted models of matched cohorts showed significantly higher healthcare payments for individuals with a diagnosis of HL during follow-up than for those with no diagnosis of HL (Table 3). The subgroup of individuals with a diagnosis of HL who received hearing services had significantly lower overall mean costs ($1,431 lower for Cohort 1, $1,648 lower for Cohort 2, $3,431 lower for

Table 3. Adjusted 18-Month Total Healthcare Payments According to Hearing Loss (HL)

Cohort	HL	HL with Hearing Services	No HL
	$, Adjusted Mean (95% Confidence Interval)		
Cohort 1[a]	20,304 (20,211–20,398)	18,873 (18,735–19,012)	16,717 (16,652–16,782)
Cohort 2[b]	11,957 (11,815–12,101)	10,309 (9,713–10,942)	8,178 (8,083–8,275)
Subcohort 3[b]	16,281 (15,737–16,843)	12,850 (10,599–15,579)	11,624 (11,237–12,024)

Estimates are adjusted for age, sex, race (when available), and 17 chronic conditions.
Cohort 1 is the Medicare plus privately insured cohort, Cohort 2 is the Medicare only cohort, and Subcohort 3 is the subgroup of Cohort 2 that is also eligible for Medicaid.
[a]Includes prescription payments
[b]Does not include prescription payments.
All p<.001 within cohort (reference no HL), except within Subcohort 3, in which HL with hearing services was not significantly different (p 26) from no HL.

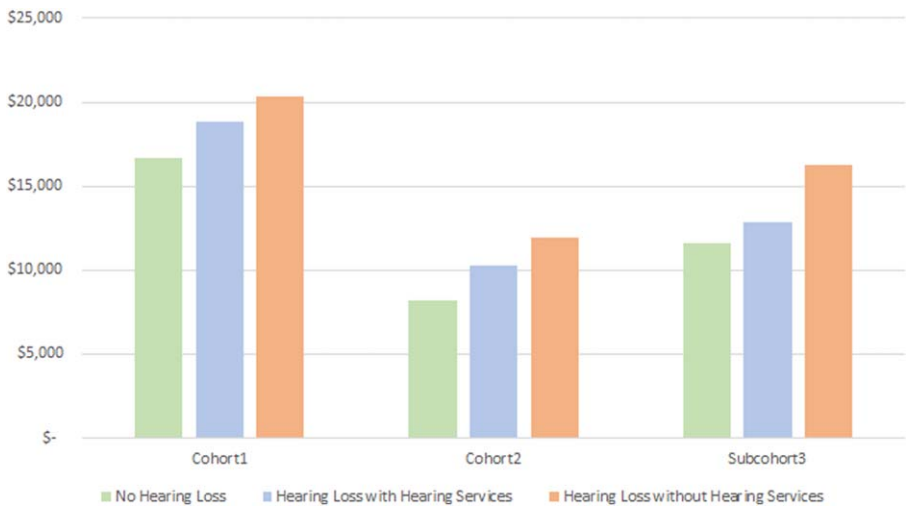

Figure 1. Adjusted 18 month total healthcare payments according to hearing loss.

Subcohort 3, all p<.001) than those who did not receive hearing services after adjusting for the cost of hearing services in each of the 3 cohorts. Payment differences were substantially higher for individuals with HL than for those with no diagnosis of HL for all three cohorts ($3,587 lower for Cohort 1, $3,779 lower for Cohort 2, $4,657 lower for Subcohort 3, all p<.001) after propensity score matching and covariate adjustment (Table 3, Figure 1). Higher hospital and outpatient costs may have led to these differences (Table 2).

DISCUSSION

The objective of this study was to compare average healthcare costs in U.S. older adults with and without HL. We used data from two sources: Medicare billing data for individuals aged 65 and older with supplementary private health insurance and a 5% random sample of Medicare data that the Centers for Medicare and Medicaid Services selected as a representative limited sample of all U.S. Medicare beneficiaries. The use of these data sources enabled us to examine healthcare costs for Medicare beneficiaries with substantially different levels of financial resources. The data sets have different benefits and limitations. The Medicare plus supplemental private insurance (Cohort 1) dataset contains all Medicare bills, including bills for prescription payments but does not include race. The Medicare 5% (Cohort 2) sample does not include prescription payments but includes race and allowed us to examine individuals with dual Medicare and Medicaid eligibility (Subcohort 3), a subgroup of individuals who meet Medicaid income eligibility criteria. Within the 3 datasets defined according to insurance type, we observed similar differences in mean cost for the 18-month observation period; individuals with untreated HL had the highest cost, followed by those with treated HL, and then those without HL. We also observed a consistent cost pattern across the 3 comparison groups in all 3 insurance cohorts. Cohort 1 had the highest mean cost, in part because this dataset included the cost of all prescription medications, and Cohort 2 had the lowest cost.

The primary findings of this study of 21.5% higher (Cohort 1) 18-month costs in older adults with Medicare and supplemental insurance with a diagnosis of HL than in those without a diagnosis of HL are similar to the findings of our recently published study in a sample of adults aged 55 to 64 in whom we found 33% greater costs in individuals with HL compared with a matched group without HL.[19] Although the cost difference in the older group reported here is less than observed in the younger sample, the same pattern of decreasing costs between those with HL (highest costs) and those with HL and hearing services (middle costs) compared to those with no indication of HL (lowest costs) remained consistent. A previous study reported $392 (95% confidence interval (CI) $277–513) in excess annual medical expenditures for individuals with HL in an analysis of Medical Expenditure Panel Survey data from 2000 to 2012.[28] Our annualized expenditure differences associated with HL were $2,391, but the previous analysis depended on the combination of 12 years of data and a much smaller sample that could not be matched at baseline, so it is possible that unmeasured differences in comorbid conditions and age is obscuring expenditure differences due to reported HL. In a systematic review of the economic effects of HL, another study found consistently higher costs and expenditures for individuals with HL, with a very high cost of forgone earnings and lifetime expenditures.[29] Most studies focus on total cost to society and lifetime effects of HL on earnings, although one study found mean expenditures of $1,012 for hearing services in the first year of reported HL, which is similar our finding of $1,296 of the added cost of hearing services.[30]

Although these new findings are an important early step in providing the evidence needed to raise awareness of HL from an annoyance or a normal consequence of aging to a public health concern, there are inherent limitations to the use of retrospective billing data. The use of administrative claims to ascertain diagnoses and identify resource use and costs with complete accuracy is difficult, because these data are collected not for clinical research but to determine healthcare payments.[31] In addition, there

are known variations in coding practices,[31] which are likely to change over time and differ between institutional settings. Perhaps most importantly in this study, these data lacked clinical information, including confirmatory diagnosis of HL and use of hearing services. Because limited reimbursement rules of insurers, including Medicare and private insurance, govern hearing testing and hearing services, there is likely to be significant undercoding of diagnoses and services billed,[31] so we might expect to find only a certain group of individuals with hearing services on their Medicare bills. These individuals may differ in systematic ways from others who receiving hearing health care but are paying out of pocket or the larger number of individuals with hearing deficits who do not seek care. Examination of marginal cost differences between 2 populations using the same data, using propensity methods, reduces the likelihood of a significant confounding effect on internal validity because many of these limitations related to administrative data will be equal in both groups, resulting in valid differences.

Propensity score methods in combination with well-specified, controlled outcomes modeling help to reduce selection bias and confounding due to imbalances in measured baseline covariates between the comparison groups, but these methods cannot control for bias that might occur because of unmeasured confounders, unless unmeasured confounders are correlated with those that were measured.[32] The degree to which unmeasured factors may influence the results of the study can be estimated using sensitivity analyses.[27,33]

The results of this study appear to be insensitive to unmeasured confounders when we examine the case of the primary difference in cost between individuals with and without HL in Cohort 1 ($3,587; the smallest difference between the three comparators). If an unmeasured confounder increased average cost by $4,396, which is equal to the largest predictor in the outcome model, having chronic renal failure, and if the prevalence of an unmeasured confounder, such as high level of treatment-seeking behavior, is 10% higher in the HL group than in those without HL, the estimated unbiased difference between these groups would be $3,147 (95% CI $3,118–3,306). Even if we were to change the prevalence assumption to an unlikely 60% difference between groups, the estimated unbiased difference in cost between individuals with and without HL would be $949 (95% CI $920–1,108). Thus, it seems unlikely that an unmeasured confounding variable could have an effect on the outcome large enough to invalidate the qualitative conclusion that 18-month healthcare costs are substantially higher in individuals with HL than in those without.

CONCLUSION

Older adults with a diagnosis of HL have substantially higher healthcare costs than a matched comparison group of individuals without a HL diagnosis regardless of type of insurance or indication of use of hearing healthcare services. The lack of audiometry confirmation of HL and our inability to differentiate between successful and unsuccessful HL interventions limit this study, although after propensity score matching and covariate adjustment, we observed more than 20% higher payments over an 18-month period for a group of insured individuals with HL. This finding indicates that negative health-related effects of HL may increase healthcare use unrelated to HL. There is currently no Medicare coverage for hearing aids or for most hearing healthcare services; private insurance coverage and Medicaid are limited, and Medicaid coverage varies widely according to state. Future studies are needed to determine whether greater coverage for hearing healthcare or use of hearing aids results in cost savings for Medicare and other insurers in potentially avoidable healthcare use and better quality of life.

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Author Contributions: A. Simpson, K. Simpson, Dubno: study design, data interpretation, draft, critical and final review of manuscript. A. Simpson, K. Simpson: data analysis.

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SUPPORTING INFORMATION

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Table S1. ICD-9 Diagnosis Codes for Defining Hearing Loss

Table S2. ICD-9 Procedure Codes for Defining Hearing Services

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Public Comment on BCBS rate increase
Comment by: Rebecca Chalmers
Date: July 22, 2019
Docket No. GMCB-005-19rr

SERFF No. MVPH-131934219 - Updated July 15, 2019

Most MVP health insurance plans **completely exclude** the primary health care need of **hearing disabled Vermonters**. This practice is unjust, unfair, and inequitable. Exclusion of my disability populations' primary, defining health care is unfairly discriminatory to the hearing disabled. The practice is completely unsubstantiated by medical or science research. The practice provides inadequate health care coverage and is detrimental to the public good. It reduces the quality of care across Vermont.

Hearing loss is a national health care problem. Hearing loss "has been associated with negative health outcomes, including cognitive decline,[3] incident dementia,[4] falls,[5] depression,[6] reduced quality of life,[7] and an increased number of emergency department visits[8] and hospitalizations.[9] However, fewer than 20% of adults with hearing loss report using hearing aids.[10] Hearing loss recently received recognition as a national public health concern.[11-15] Reports from the President's Council of Advisors on Science and Technology[12] and the National Academies of Science, Engineering, and Medicine[11] have called for policy changes to better understand the influence of hearing loss on health in the United States and to address the condition." (Reed et al 2018).

Preventative medicine is always cheaper than waiting for problems to develop to critical levels. Hearing health care is no different. The **cost benefit of covering hearing health** is at least $1,431. "The subgroup of individuals with a diagnosis of HL who received hearing services had significantly lower overall mean costs ($1,431 lower for Cohort 1, $1,648 lower for Cohort 2, $3,431 lower for Subcohort 3, all p<.001) than those who did not receive hearing services after adjusting for the cost of hearing services in each of the 3 cohorts." (Simpson et al 2018). "Untreated hearing loss was associated with $22 434 … or 46% higher total health care costs over a 10-year period compared with costs for those without hearing loss" (Reed 2018).

I urge the GMCB to **deny the rate increase until** the company has ceased excluding the basic health care needed by the hard of hearing population and fully included hearing health via:

a) **full coverage of hearing health at the same rate** as other durable medical equipment and medical services. Any payment to the patient of a lesser copay/limit is a plain face discriminatory practice that essentially creates a much higher copay for people with a disability.
b) covering hearing health devices including hearing aids, bone anchored hearing aids, batteries or rechargers, and remote microphones designed to couple with hearing aids
c) covering hearing health services, including hearing tests, counseling, hearing aid fitting, and aural rehabilitation

I urge the GMCB to consider asking actuaries to revise analyses to include cost savings of covering hearing health. The claims cost benefit of covering hearing health is at least

$1,431 (Simpson et al 2018). This is not even the benefit to Vermont of having healthier people able to work longer and communicate better, this is just the raw claims data.

Vermont has one actuarial report that shows the minimal cost of covering hearing aids--and it does not even include the claims cost benefit of $1,431 or better! Please note, the actuarial report uses the figure of $1,500 which might be a rough average cost. A $1,500 price *limit* on hearing aids is not equitable or medically substantiated as a cap. Some individuals (typically those with severe hearing loss) require more technically advanced hearing aid prosthetics, whereas others (typically with milder hearing losses) might be successful with cheaper hearing aids. A base price of a set of binaural hearing aids averages $3,300-$6,000 (Strom 2013) and lowest-priced pair of devices average $2,070 per pair (Strom 2018). Prices are getting lower in some venues, for example Costco just released a pair of hearing aids for $1,499 (Hearing Health and Technology Matters 2019). Over The Counter hearing aids will be released after federal regulations are finalized in 2020 (Bailey 2018). OTC aids are expected to be considerably cheaper.

People **with hearing loss have lower lifetime earnings** due to their hearing disability and are thus especially vulnerable to rate increases. "In a systematic review of the economic effects of [hearing loss] HL, [a] study found consistently higher costs and expenditures for individuals with HL, with a very high cost of forgone earnings and lifetime expenditures.[29] " (Simpson 2018). Hearing health costs are much lower than many health care costs; it is only high for the disabled individual and not for the health care system as a whole. Other routinely-covered services and medicine costs substantially more: arthritis treatment costs 40k a year (Faher 2019), while hearing health care coverage saves money.

Treating hearing loss allows patients to **hear their doctors** and pharmacists accurately, a necessity for informed consent and a bedrock of quality care. Treated hearing loss allows Vermonters to stay in the work force, stay connected to other people, and avoid dementia and other debilitating ailments. The "marginalizing effects of hearing loss, such as social isolation, may be creating higher rates of substance use disorders" Michael McKee, M.D., MPH (Gavin 2019).

Many states already cover hearing health for patients of all ages. New Hampshire has for many years! Arizona does (2017-2021 EHB Benchmark Plan Information), as do Hawaii, Nevada, New York, Rhode Island, Texas, and Wisconsin. Federal BCBS plans routinely cover hearing health. Why short-shrift Vermonters?

A substantial rate increase, coupled with complete lack of coverage of the primary health care need of our disability population, exacerbated by the lowered income of hard of hearing individuals, is devastating to hearing disabled Vermonters.

I urge GMCB to reject rate increases until a successful rate increase package is submitted: one that provides improved quality of care, improved equity, and reduced costs—via full coverage of hearing health.

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SOME TYPE OF
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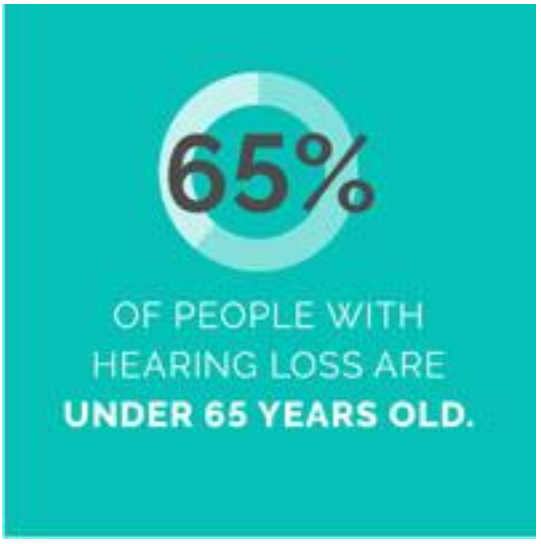
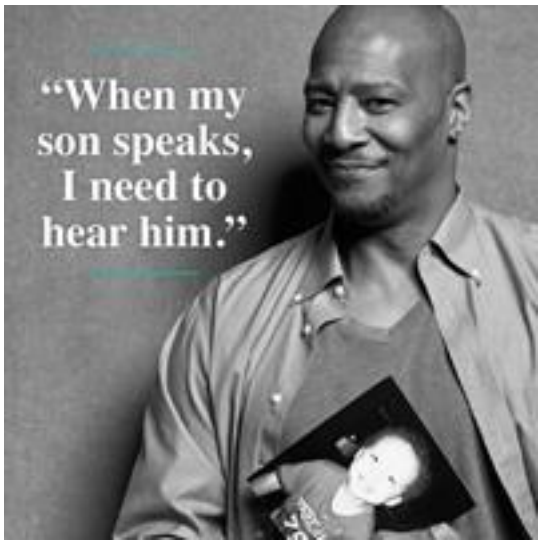

65%
OF PEOPLE WITH
HEARING LOSS ARE
UNDER 65 YEARS OLD.

"Hearing the softness goes right to the soul."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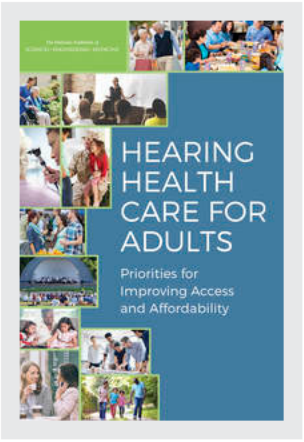

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HEARING HEALTH CARE FOR ADULTS

Priorities for Improving Access and Affordability

Committee on Accessible and Affordable
Hearing Health Care for Adults

Dan G. Blazer, Sarah Domnitz, and Catharyn T. Liverman, *Editors*

Board on Health Sciences Policy

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Reviewers

This report has been reviewed in draft form by individuals chosen for their diverse perspectives and technical expertise. The purpose of this independent review is to provide candid and critical comments that will assist the institution in making its published report as sound as possible and to ensure that the report meets institutional standards for objectivity, evidence, and responsiveness to the study charge. The review comments and draft manuscript remain confidential to protect the integrity of the deliberative process. We wish to thank the following individuals for their review of this report:

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Although the reviewers listed above have provided many constructive comments and suggestions, they did not see the final draft of the report before its release. The review of this report was overseen by **Nancy Fugate Woods,** University of Washington, and **Enriqueta C. Bond,** QE Philanthropic Advisors. They were responsible for making certain that an independent examination of this report was carried out in accordance with institutional procedures and that all review comments were carefully considered. Responsibility for the final content of this report rests entirely with the authoring committee and the institution.

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Preface

For those who can hear, auditory connection to the world is usually taken for granted. Hearing is a complex physiologic process, and when lost or diminished, it can have effects on health, independence, well-being, quality of life, and daily function as well as on everyday communication. This study—focused on improving accessibility and affordability of hearing care for adults—occurs at an opportune time for progress in this field. Hearing technologies are evolving at ever-increasing rates, care is moving into a variety of retail and online settings, and the pricing structures for hearing aids and associated services are being reexamined. Our committee makes its recommendations acknowledging these changes and urging further and immediate action.

The committee grappled with the questions of how and why hearing loss has been relegated to the sidelines of health care. The barriers to access that have been reported include high costs, lack of insurance coverage, the stigma associated with hearing difficulties and wearing hearing aids, and limited awareness of available options. The goals of this report and its recommendations are to increase transparency, expand treatment options, provide the evidence necessary for consumers to make informed decisions about their hearing health care, and examine various health care delivery and payment models. Hearing loss is a significant public health problem that requires actions throughout the health care and broader community.

Our committee's work greatly benefited from the insights provided by the workshop speakers and feedback from the report reviewers as well as from comments from many others who provided information to the committee. We especially thank the study sponsors for their work on hearing

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health and for their support of this study (listed alphabetically): the Centers for Disease Control and Prevention, the Department of Defense, the Department of Veterans Affairs, the Food and Drug Administration, the Hearing Loss Association of America, the National Institute on Aging, and the National Institute on Deafness and Other Communication Disorders.

I am truly grateful for having had the opportunity to work with this dedicated committee which undertook this study with great energy, intellect, and commitment. This was a complex task full of details and nuances, and the committee members stepped up to meet the challenge—so much so that even a blizzard did not stop them—meeting by Web conferencing and then rearranging their schedules to meet in person 2 weeks later. Their level of engagement in the study and their reasoned and thoughtful discussions made this report possible. Committee members balanced their deeply held individual views with the overarching goal of improving hearing health care. We were all fortunate to work with an intrepid and skilled team of the National Academies of Sciences, Engineering, and Medicine staff, and we deeply thank Sarah Domnitz, Cathy Liverman, Claire Giammaria, Sophie Yang, and Judy Estep, led by Andrew Pope, board director. Without their outstanding support, this report would have been impossible. We also thank Andrea Schultz for her writing and editing work and Ellen Kimmel of the Academies library staff for her assistance throughout the study process. The committee greatly appreciates the efforts of Teresa Meyer-Clemens and Deanna Baker in providing captioning.

As noted above, improving communication for individuals with hearing loss was the goal of the committee's work. It is the committee's hope that the many organizations, agencies, and individuals working on or interested in hearing health care will find this report a source of common ground from which they can work together to keep moving this field forward.

Sincerely,

Dan G. Blazer, *Chair*
Committee on Accessible and Affordable
Hearing Health Care for Adults

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Abbreviations and Acronyms

AAA	American Academy of Audiology
ACA	Patient Protection and Affordable Care Act
ACL	Administration for Community Living
ADA	Americans with Disabilities Act
AHRQ	Agency for Healthcare Research and Quality
ANSI	American National Standards Institute
ASA	Acoustical Society of America
ASHA	American Speech–Language–Hearing Association
BLSA	Baltimore Longitudinal Study of Aging
BMHS	Blue Mountains Hearing Study
BMI	body mass index
CDC	Centers for Disease Control and Prevention
CFR	Code of Federal Regulations
CI	confidence interval
CMS	Centers for Medicare & Medicaid Services
CQI	continuous quality improvement
CTA	Consumer Technology Association
CVAA	Twenty-First Century Communications and Video Accessibility Act of 2010
dB	decibel
dB HL	decibel hearing level
dB SNR	signal-to-noise ratio in decibels

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dB SPL	decibel of sound pressure level
DoD	Department of Defense
DOJ	Department of Justice
EHLS	Epidemiology of Hearing Loss Study
EMC	electromagnetic compatibility
EPSDT	Early and Periodic Screening, Diagnostic, and Treatment (program)
ERISA	Employee Retirement Income Security Act of 1974
FCC	Federal Communications Commission
FDA	Food and Drug Administration
FDCA	Federal Food, Drug, and Cosmetic Act
FM	frequency-modulated
FR	Final Rule
FTC	Federal Trade Commission
HEDIS	Healthcare Effectiveness Data and Information Set
HIPAA	Health Insurance Portability and Accountability Act
HHS	Department of Health and Human Services
HLAA	Hearing Loss Association of America
HMO	health maintenance organization
HR	hazard ratio
HRSA	Health Resources & Services Administration
Hz	hertz
ICF	*International Classification of Functioning, Disability and Health*
IOM	Institute of Medicine
kHz	kilohertz
LACE	Listening and Communication Enhancement (program)
NHANES	National Health and Nutrition Examination Survey
NHS	National Health Service
NIA	National Institute on Aging
NIDCD	National Institute on Deafness and Other Communication Disorders
NIH	National Institutes of Health
NIOSH	National Institute for Occupational Safety and Health

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OSHA	Occupational Safety and Health Administration
OTC	over the counter
PCAST	President's Council of Advisors on Science and Technology
PMA	premarket approval
PQRS	Physician Quality Reporting System
PSAP	personal sound amplification product
PTA	pure tone average
QSR	quality system regulation
RERC	Rehabilitation Engineering Research Center
SE	standard error
UIB	user instructional brochure
USPSTF	U.S. Preventive Services Task Force
VA	Department of Veterans Affairs
WHO	World Health Organization

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Summary

The loss of hearing—be it gradual or acute, mild or severe, present since birth or acquired in older age—can have significant effects on one's communication abilities, quality of life, social participation, and health. Despite this, many people with hearing loss do not seek or receive hearing health care. The reasons are numerous, complex, and often interconnected. For some, hearing health care is not affordable. For others, the appropriate services are difficult to access, or individuals do not know how or where to access them. Others may not want to deal with the stigma that they and society may associate with needing hearing health care and obtaining that care. Still others do not recognize they need hearing health care, as hearing loss is an invisible health condition that often worsens gradually over time. Finally, others do not believe that anything can be done to help them or they feel that the perceived benefit or value of intervention will not be significant enough to overcome the perceived barriers to access.

In the United States, an estimated 30 million individuals (12.7 percent of Americans ages 12 years or older) have hearing loss. Globally, hearing loss has been identified as the fifth leading cause of years lived with disability. Age-related hearing loss is of increasing public health concern as the older adult population grows. The prevalence of hearing loss rises steeply with age, from approximately 3 percent among adults 20 to 29 years of age to an estimated 45 percent among the 70- to 74-year age group and more than 80 percent in the 85-years-and-older age group. The unmet need for hearing health care is high. Estimates of hearing aid use are that 67 to 86 percent of adults who may benefit from hearing aids do not use them.

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This study focuses on improving the accessibility and affordability of hearing health care for adults of all ages. This report uses the term "hearing health care" to encompass the range of services (e.g., diagnosis and evaluation, auditory rehabilitation) and hearing technologies (hearing aids and hearing assistive technologies) relevant to hearing loss. Hearing health care is viewed through the social-ecological model that emphasizes the multiple levels of support and action needed throughout society to promote hearing and communication and reduce hearing loss and its effects. The report does not address surgical devices such as cochlear implants.

To address the statement of task, the National Academies of Sciences, Engineering, and Medicine appointed a 17-member committee with expertise in hearing health care services, audiology, otology, hearing loss advocacy, primary care, geriatrics, health economics, technology policy and law, and epidemiology. The study was sponsored by (alphabetically) the Centers for Disease Control and Prevention, the Department of Defense, the Department of Veterans Affairs, the Food and Drug Administration, the Hearing Loss Association of America, the National Institute on Aging, and the National Institute on Deafness and Other Communication Disorders.

In examining the complex issues around hearing loss in adults and hearing health care, the committee developed a set of principles that helped shape its work:

- *Prioritize the needs of individuals with hearing loss*
- *Emphasize hearing as a public health concern with societal responsibilities and effects*
- *Move toward equity and transparency*
- *Recognize that hearing loss may require a range of solutions*
- *Improve outcomes with a focus on value, quality, and safety*
- *Work toward an integrated approach that provides options*

UNDERSTANDING THE EXTENT AND IMPACT OF HEARING LOSS

Hearing loss may develop at any time during the life course. The onset can be sudden or gradual, and it can affect one or both ears. Hearing loss can result from a variety of causes (e.g., trauma, infection, genetic syndromes, aging, excessive noise exposure), and the pathological changes can occur in one or more regions of the auditory system. Although some hearing loss can be temporary or treatable using medical or surgical methods, most hearing loss in adults is permanent and managed as a chronic condition. Presbycusis, or age-related hearing loss, has been documented in many mammalian species and is characterized in humans by increased hearing thresholds, impaired processing of higher-level sounds (including reduced

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frequency and temporal resolution), and difficulty understanding speech, especially in noisy or complex listening environments.

Much remains to be learned about the extent and impact of hearing loss, particularly from a population perspective. The effects of hearing loss on communication and, as a consequence, social interactions and functional abilities have serious public health implications for adults of all ages. Among older adults—a growing demographic in the United States and globally—hearing loss is a common, chronic disability that escalates especially in those over 80 years of age. A link between hearing ability and cognitive function and dementia has long been recognized but has only recently begun to be systematically studied. Cross-sectional studies have examined the association of hearing loss with falls, declines in physical functioning, and hospitalization, but population-based longitudinal studies are lacking. The potential economic impacts of hearing loss, including reduced income and increases in unemployment or underemployment, have been modeled, but population-based longitudinal data are needed.

Goal 1: *Improve Population-Based Information on Hearing Loss and Hearing Health Care*

Recommendation 1: The National Institutes of Health, the Centers for Disease Control and Prevention, the Patient-Centered Outcomes Research Institute, the Department of Defense, the Department of Veterans Affairs, state public health agencies, and other relevant government agencies, as well as nonprofit organizations, hearing health care professional associations, academic institutions, and researchers, should strengthen efforts to collect, analyze, and disseminate prospective population-based data on hearing loss in adults and the effects of hearing loss and its treatment on patient outcomes.

Specifically,

- Support and conduct studies to develop, evaluate, strengthen, and align metrics for hearing loss and communication abilities;
- Support and conduct studies, including longitudinal studies, in diverse populations to better understand
  - the risk and natural history of hearing loss,
  - risk factors and comorbidities of hearing loss,
  - hearing health care needs, and
  - the impact of hearing loss and its treatment on health, function, economic productivity, and quality of life; and
- Develop and strengthen research training programs to address hearing loss as a public health concern with attention to cross-disciplinary training on sensory disorders, epidemiological methods,

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advanced biostatistics, and health services and health economics research methods.

HEARING HEALTH CARE SERVICES: IMPROVING ACCESS AND QUALITY

Although it is widely recognized that hearing aids and hearing assistive technologies can be key components to improving hearing and communication abilities, the critical role that hearing-related services can play in hearing health care is often overlooked. These services include the systematic and comprehensive assessment of an individual's hearing and communication difficulties (e.g., at home, in the workplace, participating in the community), the diagnosis of underlying medical conditions, evaluation of the individual's hearing loss and treatment needs, auditory rehabilitation, and counseling and other services that help the individual to maximize his or her hearing and communication abilities.

Navigating the hearing health care system can be confusing. Entry into the hearing health care system can occur through multiple pathways (audiologists, hearing instrument specialists, otolaryngologists, primary care providers, self service, and others). Consumers can be left with no clear guidance on what will best fit their financial, health, social, and hearing needs. When consumers are left to traverse this complex system, they can find the process and outcomes to be frustrating and unsatisfactory. For the most part, little is known about the relative effectiveness or quality of these services. Guidelines, standards, and metrics must be regularly reviewed and updated to ensure that the most recent evidence is translated into best practices for hearing health care professionals and is disseminated to people with hearing loss and their families.

Goal 2: *Develop and Promote Measures to Assess and Improve Quality of Hearing Health Care Services*

Recommendation 2: The Centers for Medicare & Medicaid Services, the National Institutes of Health, the Department of Defense, the Department of Veterans Affairs, other relevant federal agencies, hearing health care professional associations and providers, advocacy organizations, health care quality improvement organizations, health insurance companies, and health systems should collaborate to

- **Align and promote best practices and core competencies across the continuum of hearing health care, and implement mechanisms to ensure widespread adherence; and**
- **Research, develop, and implement a set of quality metrics and measures to evaluate hearing health care services with the end goal of improving hearing- and communication-focused patient outcomes.**

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Although the hearing health care system is intended to help individuals maximize their hearing and communication abilities, manage their health and well-being, and find ways to compensate for their hearing loss through the use of services and technologies, many individuals report dissatisfaction with the U.S. hearing health care system. Multiple barriers prevent the system from being person centered and person directed. Instead, much of the direction lies in the hands of hearing aid manufacturers and hearing health care professionals, which results in challenges for individuals who want to switch providers, and in challenges for professionals trying to help individuals who seek their assistance with a hearing device that can only be programmed by certain providers. Individuals who need hearing health care services and technologies should be at the center of their own care, with the option to make decisions about what is the most appropriate care for them. In examining the Food and Drug Administration's (FDA's) requirements for physician evaluation prior to obtaining hearing aids, the committee finds no evidence that the required medical evaluation or waiver of that evaluation provides any clinically meaningful benefit. In weighing the rareness of the medical conditions, the incidence of hearing loss in adults, the widespread need for hearing health care, and the wide use of the medical waiver, the committee recommends removing this regulation to serve consumers' best interests. Relatedly, individuals should be able to obtain their hearing health care records, including audiogram and hearing aid programming history, from their hearing health care professional to enable them to be better informed about their health and change providers if they so choose.

Goal 3: *Remove FDA Regulation for Medical Evaluation or Waiver to Purchase a Hearing Aid*

Recommendation 3: The Food and Drug Administration should remove the regulation that an adult seeking hearing aids be required to first have a medical evaluation or sign a waiver of that evaluation and should ensure consumers receive information about the medical conditions that could cause hearing loss through continued inclusion of that information in hearing aid user instructional brochures.

Goal 4: *Empower Consumers and Patients in Their Use of Hearing Health Care*

Recommendation 4: Hearing health care professionals, professional associations, advocacy organizations, and relevant government agencies such as the Office for Civil Rights at the Department of Health and Human Services should ensure patients are aware of, and understand how to exercise, their rights of access to information about themselves

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under the Health Insurance Portability and Accountability Act Privacy Rule (45 C.F.R. Section 164.524), including their audiograms and hearing aid programming history.

Similar to many other sectors of the U.S. health care system, hearing health care does not reach all who need it. Residents of rural and low-income urban areas are at a particular disadvantage in accessing care. Furthermore, the minimal diversity in the hearing health care workforce does not mirror the wide diversity in the population of adults this workforce serves. With the high incidence of hearing loss in the adult population and the low utilization of the hearing health care system, efforts should be made to provide easier access for all, especially those for whom socioeconomic barriers exist.

Goal 5: ***Improve Access to Hearing Health Care for Underserved and Vulnerable Populations***

Recommendation 5: The Health Resources & Services Administration, state health departments, advocacy organizations, and hearing health care professional schools and associations should

- **Collaborate and partner with health care providers to ensure hearing health care accessibility throughout rural and underserved areas using mechanisms such as telehealth, outreach clinics (including federally qualified community health centers), and community health workers;**
- **Support and promote programs, including incentives such as tuition assistance, to increase diversity in all sectors of the hearing health care workforce; and**
- **Promote the training of cultural competency in the hearing health care workforce and incentivize practice in underserved communities.**

Effective communication is key both for emotional well-being and for participating in making decisions about one's own health care plan. Hearing is often overlooked in adult medical and wellness visits because of the large number of other health conditions and concerns that must be assessed or, in the case of older adults, because of the assumption that hearing loss is typical and cannot be helped. However, increasing evidence shows that hearing is important for health, and the potential for miscommunication with health care providers due to hearing loss demonstrates the importance of paying attention to hearing ability during medical and wellness visits. Furthermore, health care providers should be aware of the importance of hearing and the need to emphasize, rather than dismiss, hearing concerns during health care visits.

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Goal 6: *Promote Hearing Health Care in Wellness and Medical Visits*

Recommendation 6: Public health agencies (including the Centers for Disease Control and Prevention and state health departments), health care systems (including those of the Department of Defense and the Department of Veterans Affairs), health care professional schools and associations, advocacy organizations, health care providers, and individuals and their families should promote hearing health in regular medical and wellness visits (including the Medicare Annual Wellness Visit).

Specifically,

- Use patient visits to assess and discuss potential hearing difficulties that could affect doctor–patient communication and overall patient well-being, to encourage individuals and their family members and caregivers to discuss hearing concerns, to raise awareness among older adults about age-related hearing loss, and to encourage referral when appropriate; and
- Develop and disseminate core competencies, curricula, and continuing education opportunities focused on hearing health care, particularly for primary care providers.

HEARING TECHNOLOGIES

The hearing technology landscape is ever-evolving and encompasses a wide range of products from traditional hearing aids regulated as medical devices to consumer-technology products and hearing assistive technologies. The broad spectrum of types and severity of hearing loss necessitates a wide range of technologies to meet each individual's needs while also meeting requirements for safety and interoperability with other technologies (e.g., cell phones, televisions, and emergency alert systems).

Hearing aids, currently the primary set of devices used for the treatment of hearing loss, are regulated by FDA as Class I or Class II medical devices. In the United States, as in many countries, hearing aid use is low compared to the high prevalence of hearing loss. Estimates of hearing aid use are that 67 to 86 percent of adults who might benefit from hearing aids do not use them. Among the numerous reasons given by individuals for not using hearing aids are the high cost; a lack of effectiveness; challenges with fit, comfort, and use; side effects such as rashes or itching; stigma; challenges with care and maintenance (e.g., changing batteries); and not recognizing that there is a need for hearing assistance.

FDA has established regulations for hearing aids, including quality system regulation requirements, mandatory labeling, and pre-purchase medi-

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cal evaluation (or a documented waiver). These regulations, along with a number of state regulations, have largely restricted the availability of hearing aids to being mainly dispensed through medical, audiology, or hearing instrument specialist venues. To date, proposals for over-the-counter (OTC) or direct-to-consumer hearing aids have not been approved. Consumer technology products, including personal sound amplification products (PSAPs), have been developed. PSAPs are not considered medical devices, and FDA guidance documents specify that PSAPs cannot be marketed in the United States as products intended for improving hearing loss.

The committee identified the need for FDA to create a category of OTC wearable hearing devices intended for use by individuals with mild or moderate hearing loss. These devices would need to meet specific safety and quality standards and labeling specifications. This regulatory approach would be similar to FDA's regulatory approach of creating separate device classification regulations for prescription eyeglasses and reading glasses (a parallel drawn here specifically to the regulatory approach and not the performance of the devices). A category of OTC wearable hearing devices could provide an additional, easy-to-access option with the potential for lower cost to meet the hearing needs of adults with mild or moderate hearing loss.

Individuals with hearing loss frequently use hearing aids with telecoils or other hearing assistive technologies that couple with cell phones and a range of other communications systems. Efforts are needed to standardize the interfaces and connection of hearing aids, hearing assistive technologies, and OTC wearable hearing devices with other types of technologies and communications systems.

Goal 7: ***Implement a New FDA Device Category for Over-the-Counter Wearable Hearing Devices***

Recommendation 7: The Food and Drug Administration (FDA) should establish a new category of over-the-counter (OTC) wearable hearing devices. This device classification would be separate from "hearing aids." OTC wearable hearing devices would be defined as wearable, OTC devices that can assist adults with mild to moderate hearing loss.

These devices would

- Explicitly be defined by FDA as intended for OTC sale;
- Be able to be marketed as devices that may assist with hearing loss and be sold OTC, by mail, or online; and would include mobile apps and associated wearable technologies intended to function as an OTC wearable hearing device for mild to moderate hearing loss;
- Be subject to regulatory requirements that would explicitly preempt current state laws and regulations for hearing aids and dispensing

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and preempt potential future state laws and regulations seeking to limit OTC access;
- Be exempt from 510(k) premarket review to the extent that the technology is not fundamentally different from air conduction hearing aids;
- Include thorough consumer labeling, including information on
  - frequency gain characteristics,
  - adequate directions for use,
  - communication challenges for which it may be helpful to seek professional consultation, and
  - medical situations, symptoms, or signs for which to consult with a physician;
- Meet minimum safety requirements and standards, including but not limited to
  - safe maximal sound output (e.g., upper limit for dB SPL [decibel of sound pressure level] peak output) at levels to be determined in conjunction with national experts in hearing conservation,
  - criteria for ear tips (e.g., maximum depth for insertion into the ear canal),
  - amplification via air conduction only (wireless technology for programming and connectivity should be permitted), and
  - American National Standards Institute or other voluntary standards for audio characteristics and performance as determined by FDA, as appropriate for this category;
- Be subject to quality system regulation (QSR) requirements, but be considered for exemption from certain QSR requirements as determined by FDA to be appropriate for this category; and
- Have the option to include accessory tests for self-assessment of mild to moderate hearing loss for purposes of selecting and fitting an OTC hearing device.

To further clarify the types of hearing technologies and their oversight and regulation:

- FDA should retain a guidance document on personal sound amplification products (PSAPs) that describes PSAPs as products that are not to be offered or promoted to address hearing loss and are subject to the electronic product provisions of the Federal Food, Drug, and Cosmetic Act through its 2009 PSAP guidance document or a revision of its 2013 PSAP draft guidance document. The PSAP guidance document would establish the distinction between PSAPs for normal hearing and the OTC wearable hearing device category for hearing loss.

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- The Consumer Product Safety Commission and the Federal Trade Commission should exercise their respective authorities in the regulation of consumer products marketed as PSAPs.

Currently, the settings on many hearing aids can only be adjusted by hearing health care professionals who have an agreement with a given manufacturer or distributor to sell that brand of hearing aid. Furthermore, many hearing health care professionals only sell one or a few different brands of hearing aids. A consumer who purchases a hearing aid from one hearing health care professional may find that the manufacturer or distributor has restricted access for adjusting the settings, and thus, the consumer may have to seek all additional programming services from the same distributor that originally sold him or her the product. An open platform approach would provide consumers with greater portability in their hearing health care including increasing the options for choosing their hearing health care professional. Consumers should be notified prior to the point of sale regarding the portability of hearing aid programming.

Greater public awareness and user-friendly instructions about the availability, portability, connectivity, and use of hearing aids and hearing assistive technologies, as well as comparable details on product features, are needed to enable informed decision making.

Goal 8: *Improve the Compatibility and Interoperability of Hearing Technologies with Communications Systems and the Transparency of Hearing Aid Programming*

Recommendation 8: The Federal Communications Commission, the Federal Trade Commission, the Food and Drug Administration, the National Institutes of Health, and other relevant federal agencies; the American National Standards Institute and other standards-setting organizations; manufacturers; and industry, professional, and consumer advocacy organizations should

- **develop standards that ensure that hearing aids and over-the-counter wearable hearing devices are compatible and interoperable with other technologies and communications systems;**
- **increase public awareness and consumer-friendly information on the availability, connectivity, and use of hearing aids and hearing assistive technologies; and**
- **develop and implement standards for an open platform approach for hearing aid programming that allows any hearing health care professional (or, as evolving technology allows, the device owner) to program the device settings, and require point-of-sale information about the programming features and programming portabil-**

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ity of hearing aids in order to enable more informed purchasing decisions.

IMPROVING AFFORDABILITY OF SERVICES AND TECHNOLOGIES

For many people cost can be a key factor in making health care decisions; for some people cost can be the driving factor, including determining whether to forego the care entirely. The cost of hearing health care includes the cost of services and technologies, and these costs may be incurred multiple times over a period of many years in order to maintain and replace hearing aids and other technologies, to continue to monitor hearing status, and to retain the benefit from auditory rehabilitation and other services. The average retail price for a pair of hearing aids in 2013 was $4,700 (bundled price including the costs of services).

In the hearing health care system that serves adults, nearly all costs are covered by the individual. Third-party payment for hearing health care is limited and many employers do not offer hearing health care insurance options. Currently Medicare Part B covers only diagnostic hearing tests; it does not cover other services or technologies, although some Medicare Advantage plans do. Only some state Medicaid programs offer hearing health care benefits, and several of those that do offer it have strict limitations on eligibility. Vocational rehabilitation programs offer a tremendous benefit for those with hearing loss who are seeking employment, but many individuals are not even aware that this program exists. Furthermore, young adults who have had hearing loss since childhood can face unique financial challenges in transitioning from programs that provided them with hearing aids and services as children and youth to receiving limited, if any, benefits as adults. Given the high numbers of Americans who have hearing loss and the high cost of hearing health care, changes to the cost of hearing health care are needed.

Goal 9: ***Improve Affordability of Hearing Health Care***

Recommendation 9: The Centers for Medicare & Medicaid Services (CMS), other relevant federal agencies, state Medicaid agencies, health insurance companies, employers, hearing health care providers, and vocational rehabilitation service agencies should improve hearing health care affordability for consumers by taking the following actions:

- **Hearing health care professionals should improve transparency in their fee structure by clearly itemizing the prices of technologies and related professional services to enable consumers to make more informed decisions;**

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- **CMS should evaluate options, including possible statutory or regulatory changes, in order to provide coverage so that treating hearing loss (e.g., assessment, services, and technologies, including hearing aids) is affordable for Medicare beneficiaries;**
- **CMS should examine pathways for enhancing access to assessment for and delivery of auditory rehabilitation services for Medicare beneficiaries, including reimbursement to audiologists for these services;**
- **State Medicaid agencies should evaluate options for providing coverage for treating hearing loss (e.g., assessment, services, and hearing aids and hearing assistive technologies as needed) for adult beneficiaries;**
- **Vocational rehabilitation agencies should raise public awareness about their services that enable adults to participate in the workforce, and they should collaborate with other programs in their respective state to raise this awareness;**
- **Hearing health care professionals and professional associations should increase their awareness and understanding of vocational rehabilitation programs and refer as appropriate; and**
- **Employers, private health insurance plans, and Medicare Advantage plans should evaluate options for providing their beneficiaries with affordable hearing health care insurance coverage.**

There are many unknowns in the hearing health care system. The comparative effectiveness of different care delivery models, the health and economic benefits of identifying and treating adult hearing loss early, and the potential for new technologies to disrupt and improve care are just a few of the areas where more research and evaluation are needed. An understanding of these issues will be necessary to continue making strides forward in improving accessibility to and affordability of hearing health care for all.

Goal 10: *Evaluate and Implement Innovative Models of Hearing Health Care to Improve Access, Quality, and Affordability*

Recommendation 10: The Centers for Medicare & Medicaid Services, the Patient-Centered Outcomes Research Institute, the Agency for Healthcare Research and Quality, the National Institutes of Health, the Centers for Disease Control and Prevention, the Health Resources & Services Administration, the Department of Defense, the Department of Veterans Affairs, researchers, and health care systems should prioritize and fund demonstration projects and studies, including randomized controlled trials, to improve the evidence base for current and innovative payment and delivery models for treating hearing loss.

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Specifically,

- Innovative models to be evaluated should include, but not be limited to, community health workers, telehealth, mobile health, retail clinics, and self-administered hearing health care. These projects and studies should include outcomes that are patient centered and assess value, comparative effectiveness, and cost effectiveness.
- Demonstration projects should evaluate the health impact of beneficiary direct access to audiologist-based hearing-related diagnostic services, specifically to clarify impact on hearing health care accessibility, safety, and the effectiveness of the medical home. This excludes direct access to audiologic testing for assessment of vestibular and balance disorders and dizziness, which require physician referral. Successful outcomes would provide evidence of effective communication and coordination of care with primary care providers within a model of integrated health care, and evidence of appropriate identification and referral for evaluation of medical conditions related to hearing loss and otologic disease.
- Models that are found to be most effective should be widely implemented.

ENGAGING A WIDER COMMUNITY: AWARENESS, EDUCATION, AND SUPPORT

Hearing plays a vital role in how individuals experience, interact with, and relate to the people and environment around them. Hearing is sometimes referred to as the "social sense" because of its function in developing and maintaining intimate relationships and social connections with family, friends, coworkers, and acquaintances. Supporting individuals with hearing loss requires adaptable solutions that span society—not just solutions within the context of a medical model that revolves around delivery of care and services in a health care setting. These solutions should reduce stigma and negative media perceptions and ensure that consumers understand their hearing test results and have the information they need to compare devices and products and to determine pathways to accessing hearing health care services.

People with hearing loss can experience a variety of challenges in terms of employment and the workplace, including obstacles related to finding employment, career development, promotion and career advancement, equitable compensation, and the balance between job demands and a sense of control and confidence in managing work-related situations. The Americans with Disabilities Act and related laws have provisions that improve access to hearing assistance in some settings, but it is not always adequate, and technology in public venues is not always functional.

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For people with hearing loss, the acoustics of the places where they live, work, learn, and socialize, the availability of hearing aids and hearing assistive technologies, and the ability to connect to other communications-enhancing systems may mean the difference between participating in and engaging with their community and feeling isolated. Raising public awareness of hearing health and of the range of options to facilitate communication is key and will require the collaboration of many groups. In addition, individuals, family members, employers, and communities can take actions to maximize hearing and facilitate communication for the benefit of all.

Goal 11: ***Improve Publicly Available Information on Hearing Health***

Recommendation 11: The National Institutes of Health, the Centers for Disease Control and Prevention, the Food and Drug Administration, the Department of Defense, the Department of Veterans Affairs, the Administration for Community Living, state public health agencies, other relevant government agencies, advocacy organizations, hearing health care professional associations, hearing technology manufacturers, hearing health care professionals, and media organizations should improve public information on hearing health and hearing-related technologies and services and promote public awareness about hearing and hearing health care.

Specifically,

- Strengthen publicly available, evidence-based information on hearing through multiple avenues (e.g., centralized websites, community-based services, local councils on aging) that explain hearing and related health concerns for adults of all health literacy levels, and address the breadth of services and technologies, including their comparative effectiveness and costs;
- Work through media, social marketing, and public education campaigns to disseminate and evaluate key evidence-based messages about hearing and hearing health and to promote accuracy in media portrayals;
- Implement and support a consumer-based metric to enable individuals to understand and track their communication abilities and hearing needs and a consumer-oriented format for audiogram and other hearing test results;
- Adopt standardized terminology across manufacturers about the features and capabilities of hearing aids and hearing assistive technologies so that consumers and hearing health care professionals can make easy, clear, unambiguous comparisons; and
- Develop and disseminate criteria that individuals and families can use to evaluate and compare hearing-related products and services.

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Goal 12: ***Promote Individual, Employer, Private-Sector, and Community-Based Actions to Support and Manage Hearing Health and Effective Communication***

Recommendation 12: Individuals, families, community-based organizations, advocacy organizations, employers, private-sector businesses, and government agencies (local, state, federal) should take actions to support and manage hearing health and foster environments that maximize hearing and communication for all individuals.

- Individuals and their family members can
  - Reduce exposure to noise that is at high volume levels for extended periods of time and use hearing protection as appropriate,
  - Be aware of and recognize difficulties in hearing and communication and seek information and care through the range of available services and technologies when appropriate, and
  - Seek out peer-support groups and other opportunities for those living with hearing loss, when appropriate.
- Community-based organizations, advocacy organizations, employers, private-sector businesses, and government agencies (local, state, federal) should promote work and community environments that are conducive to effective communication and that support individuals with hearing loss. Specifically, they should
  - Ensure compliance with the Americans with Disabilities Act and other related laws supporting people with disabilities and strive to exceed their minimum requirements and
  - Research and incorporate features into buildings and public spaces that improve hearing and communication (e.g., universal design, hearing assistive technologies).

OPPORTUNITIES FOR ACTION

With the positive changes in patient engagement and empowerment occurring throughout the health care system and with the rapid pace of evolution in technology, it is an opportune time to explore and implement changes in the way hearing itself is viewed and the way hearing health care as a whole is delivered, valued, and evaluated. With the benefit of key institutional, technological, and regulatory changes to improve access and affordability, hearing health care is poised to undergo advances that will help individuals with hearing loss and their families find and fully utilize the appropriate, affordable, and high-quality services, technologies, and support they need. Fully developing the array of options for adults of all ages and with all levels of hearing loss (mild, moderate, severe, and pro-

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found) requires that hearing loss be recognized as a public health concern that demands multidisciplinary and collaborative efforts by all stakeholders working together with the common goal to improve hearing and communication abilities for individuals and across the population (see Box S-1).

Box S-1 KEY MESSAGES FOR IMPROVING ACCESSIBILITY AND AFFORDABILITY OF HEARING HEALTH CARE FOR ADULTS[a]

Findings:

- Hearing is vital to communications, health, function, and quality of life. Individuals need to be alert to their hearing health, as hearing loss can range from mild to profound and tends to increase with age, onset can be gradual, and each individual's hearing needs are unique.
- Hearing health care involves a wide range of services and technologies with ever-expanding and evolving options; however, many people do not have access to these options or cannot afford them.
- Hearing loss is a public health and societal concern; engagement and action are needed across the spectrum of relevant stakeholders, including individuals and families, professionals, nonprofit organizations, industries, government, and the health care community.

Recommended Actions:

- Improve population-based information on hearing loss and hearing health care
- Develop and promote measures to assess and improve quality of hearing health care services
- Remove FDA regulation for medical evaluation or waiver of that evaluation prior to hearing aid purchase
- Empower consumers and patients in their use of hearing health care
- Improve access to hearing health care for underserved and vulnerable populations
- Promote hearing health care in wellness and medical visits for those with concerns about their hearing
- Implement a new FDA device category for over-the-counter wearable hearing devices
- Improve the compatibility and interoperability of hearing technologies with communications systems and the transparency of hearing aid programming
- Improve affordability of hearing health care by actions across federal, state, and private sectors
- Evaluate and implement innovative models of hearing health care to improve access, quality, and affordability
- Improve publicly available information on hearing health
- Promote individual, employer, private-sector, and community-based actions to support and manage hearing health and effective communication

[a]All findings and recommendations are of equal importance and are not prioritized.

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1

Introduction

The loss of hearing—be it gradual or acute, mild or severe, present since birth or acquired in older age—can have significant effects on one's communication abilities, quality of life, social participation, and health. Despite this, many people with hearing loss do not seek or receive hearing health care. The reasons are numerous, complex, and often interconnected. For some, hearing health care is not affordable. For others, the appropriate services are difficult to access, or individuals do not know how or where to access them. Others may not want to deal with the stigma that they and society may associate with needing hearing health care and obtaining that care. Still others do not recognize they need hearing health care, as hearing loss is an invisible health condition that often worsens gradually over time. Finally, others do not believe that anything can be done to help them or feel that the perceived benefit or value of the service or technology will not be significant enough to overcome the perceived barriers to access.

In the United States, an estimated 30 million individuals (12.7 percent of Americans ages 12 years or older) have hearing loss.[1] Globally, hearing loss has been identified as the fifth leading cause of years lived with disability (Global Burden of Disease Study 2013 Collaborators, 2015). The unmet need for hearing health care is high. Estimates of hearing aid use are that 67 to 86 percent of adults who might benefit from hearing aids do not use

[1]The study, based on data from the National Health and Nutrition Examination Survey, found that these estimates of bilateral hearing loss increase to 48.1 million Americans (20.3 percent) when those with unilateral hearing loss were included (Lin et al., 2011).

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them.[2] Data on the use of hearing health care are difficult to obtain given the current structure of the hearing health care model.

Successful delivery of hearing health care enables individuals with hearing loss to have the freedom to communicate in their environments in ways that are culturally appropriate for them and that preserve their dignity and function. Key goals in improving hearing health care are that it be affordable, accessible, effective, accountable, person centered, person directed, and transparent while being supported by a larger society that prioritizes communication, reduces stigma, and provides social and environmental supports for hearing health. Embracing such a system goes well beyond the medical model and acknowledges and demonstrates respect for individuals' needs, concerns, and goals.

SCOPE OF THE STUDY AND STUDY PROCESS

This report examines the hearing health care system, with a focus on nonsurgical technologies and services, and offers recommendations for improving the access to, the affordability of, and the quality of hearing health care for adults of all ages.

To address the study's statement of task (see Box 1-1), the National Academies of Sciences, Engineering, and Medicine appointed a 17-member committee with expertise in hearing health care services, audiology, otology, hearing loss advocacy, primary care, geriatrics, health economics, technology policy and law, and epidemiology. Brief biographies for each of the 17 members of the committee can be found in Appendix B. The study was sponsored by (alphabetically) the Centers for Disease Control and Prevention, the Department of Defense, the Department of Veterans Affairs, the Food and Drug Administration, the Hearing Loss Association of America, the National Institute on Aging, and the National Institute on Deafness and Other Communication Disorders.

The committee held six meetings during the course of its work; the first four meetings included public sessions with speakers providing their expertise on a variety of topics relevant to the statement of task (see Appendix A). The committee also held a public conference call with invited speakers. In addition, the committee gathered information from the scientific literature and reviewed information submitted by members of the public and from various agencies and organizations.

[2] These estimates are based on studies of hearing aid use in older Americans. Bainbridge and Ramachandran (2014) reported that 33.1 percent of potential hearing aid candidates (70 years and older) reported using hearing aids. Chien and Lin (2012) reported that 14.2 percent of Americans with hearing loss (50 years and older) use hearing aids.

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Box 1-1 STATEMENT OF TASK

An ad hoc committee will address how to improve accessibility to and affordability of hearing health care for adults, excluding surgical devices and related services. Specifically, the committee will

- Provide a contextual background addressing the importance of hearing to individual and societal health, productivity, and engagement. This may include issues such as isolation, social connectivity and well-being, and economic productivity.
- Address federal regulations for hearing aid dispensing. The current federal regulations include the requirement for a medical evaluation by a licensed physician (or a signed waiver of this requirement) prior to the dispensing of a hearing aid in order to promptly identify treatable medical conditions that cause hearing loss.
  - Do the current regulations provide a clinically meaningful benefit to adults with hearing loss?
  - If so, does this benefit outweigh any current barriers to accessibility or affordability that may be associated with the current regulations?
  - What should be the required federal regulatory paradigm for the dispensing of hearing aids?
- Address hearing health care access and affordability:
  - How can affordability of hearing health care, including consideration of third-party payment and alternate hearing assistive technologies and services, be improved?
  - How can current delivery models (system and provider) be utilized or modified to improve access to hearing health care?
  - What innovative health care delivery approaches (e.g., telehealth, mobile health, team-based care) can be used to increase both the access to and affordability of hearing health care?
  - What are the specific challenges for select populations (e.g., older adults, transitioning young adults)?
- Provide recommendations aimed both at solutions that are implementable and sustainable in the short term as well as those that may require a longer timeframe for implementation. In the circumstance where robust evidence is lacking or absent, the committee is encouraged to make recommendations based on sound scientific reasoning in the context of the current health care environment.

  The committee will not address pharmacological therapies for hearing health care.

OVERVIEW OF HEARING AND HEARING LOSS

Sound is produced by waves of air pressure that vary in frequency, amplitude, and direction. When working without impairment, the human auditory system—through a series of complex processes that are carried out in the ear and the brain—can quickly detect, distinguish, and interpret complex mixtures of sound waves from spoken, musical, and other types of audible communications (see Box 1-2).

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Box 1-2 BASIC PHYSIOLOGY OF HEARING

The ear, the primary auditory sensory organ, converts sound pressure in the air into neural-electrical signals that are interpreted by the brain as speech, music, etc. The three parts of the ear—outer, middle, and inner—have different roles in this process. The pinna of the outer ear collects and focuses sound waves into the external auditory canal. The sound waves travel through the external auditory canal (approximately 2.5 cm) to reach the ear drum (tympanic membrane). The sound waves cause the ear drum to vibrate. The middle ear is an air-filled cavity in which the vibrations of the eardrum are amplified by three tiny bones, the malleus (hammer), incus (anvil), and stapes (stirrup), collectively known as the ossicles. Thus, the sound waves generated by this process are transmitted as pressure waves to the inner ear.

The inner ear plays a role in the vestibular system (vital to balance and equilibrium) as well as in hearing. The inner ear's cochlea consists of fluid compartments with sensorineural hair cells that translate the vibrations generated by sound into electrical signals, which activate fibers of the eighth (auditory) cranial nerve, which in turn transmits signals to the brain, where the signals are processed by the auditory cortex into understandable sound.

SOURCES: Conners, 2003; IOM, 2004; NIDCD, 2014, 2015.

Two dimensions of sound are its frequency (roughly analogous to *pitch*, measured in hertz [Hz]) and its intensity (the main determinant of the loudness of the sound measured in decibels [dB]) (see Table 1-1). Typically, humans can hear sounds from low to high pitch with frequencies between 20 and 20,000 Hz and at levels as low as 0 dB hearing level[3] (dB HL). At high levels of intensity (and depending on the duration of the sound and proximity to the source) there is a risk of permanent or temporary pain or damage to hearing ability (CDC, 2015a). Results of a hearing test are shown in an audiogram, which is a graph that shows the lowest levels in each ear that an individual is able to hear sounds at each of several different frequencies. Other tests of hearing may also be conducted to differentiate between various causes of hearing loss and to better understand an individual's communication challenges and needs (see Chapter 3).

The World Health Organization defines hearing loss as "not able to hear as well as someone with normal hearing—hearing thresholds of 25 dB HL or better in both ears" (WHO, 2015). The threshold is the minimum sound level at which an individual can detect any sound. Hearing loss is often cat-

[3]The term "dB hearing level" (db HL) is a unit of sound used for pure tone audiograms and is referenced to levels of normal hearing specified in national and international standards. Decibel measurements may also be provided using sound pressure level measures, a logarithmic measure of sound pressure relative to a reference value.

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TABLE 1-1
Examples of Sound Frequencies and Intensities

Sound Frequencies (measured in hertz [Hz])	
250 to 1,000	Vowel sounds, such as the short "o" in the word "hot"
1,500 to 6,000	Consonant sounds, such as "s," "h," and "f"
20 to 20,000	Typical range of human hearing
Sound Intensities (measured in decibels [dB])	
10	Normal breathing
25 to 30	Whisper
45 to 60	Typical talking
85	Lawnmower
90	Sounds can become uncomfortable to hear
110 to 140	Rock concert (varies)
120 or louder	Sounds may be painful
0 to 140	Typical range of human hearing

SOURCES: CDC, 2015a; NIDCD, 2010.

egorized as mild, moderate, severe, or profound. Individuals with mild to moderate hearing loss may develop strategies to improve communication, such as facing the speaker or speech (lip) reading, and they may use hearing aids and hearing assistive technologies. Hearing aids are the most widely used intervention for adults with mild to severe sensorineural hearing loss. People with severe to profound hearing loss may be candidates for cochlear implants (a surgical intervention not addressed by this committee).

The committee focused on hearing loss, the major population-based hearing concern in adults, but recognized that there are a number of other conditions, such as tinnitus, which affect hearing health. Many of the recommendations in this report will be of benefit to the care of a range of hearing-related conditions.

Causes and Types of Hearing Loss

Hearing loss can be present from birth or can have an onset at any age. The causes of hearing loss are often categorized based on whether they are congenital or acquired. Congenital causes are those that lead to hearing loss or deafness at birth or soon thereafter. Examples of congenital causes of hearing loss or deafness are genetic syndromes; maternal rubella, syphilis,

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or certain other infections during pregnancy; low birth weight; lack of oxygen at birth; certain drugs used during pregnancy (e.g., aminoglycosides, cytotoxic drugs, antimalarial drugs, and diuretics); and severe jaundice in the neonatal period (birth to 1 month). Genetic factors are responsible for an estimated 50 to 60 percent of childhood hearing loss in developed countries (Morton and Nance, 2006). Universal newborn hearing screening has been the standard of care throughout the United States since the early 1990s (CDC, 2015b; Morton and Nance, 2006).

Acquired hearing loss may be sudden or gradual in onset and may be caused by meningitis; measles and mumps; otosclerosis (progressive fusion of the ossicles of the middle ear); chronic ear infections; autoimmune or inflammatory disorders; fluid or infection in the ear (otitis media); tympanic membrane (ear drum) thickening or perforations; the use of some antibiotic, antimalarial, or cancer chemotherapeutic medications; some head injuries or other trauma; long-term exposure to excessive noise; cerumen (ear wax) or foreign bodies blocking the ear canal; or aging (presbycusis) (WHO, 2015). Some of these conditions (including otitis media, ear canal blockages, and some forms of otosclerosis) can result in conductive hearing loss, which affects the outer or middle ear, and are often medically or surgically treated. Sudden or fluctuating forms of sensorineural hearing loss may improve with medical or surgical treatment. However, most sensorineural hearing loss is the result of permanent changes to the cochlea, auditory nerve, or central auditory nervous system and cannot be repaired using current medical or surgical interventions. Thus, the most common interventions for sensorineural hearing loss are those that amplify sound to provide sufficient audibility of speech and other sounds. These interventions may include technologies, such as hearing aids and hearing assistive technologies, and auditory rehabilitation services, including auditory and speech perception, speech (lip) reading training, and training to improve communication and coping strategies.

Age-related hearing loss (presbycusis) has been documented in many mammalian species and is characterized in humans by increased hearing thresholds, the impaired processing of higher-level sounds (including reduced frequency and temporal resolution), and difficulty understanding speech, especially in noisy or complex listening environments (Yamasoba et al., 2013). The primary pathology of the process is unknown, but age-related hearing loss is a cumulative disorder which may involve both intrinsic and extrinsic factors, including genetic mutations, the degeneration of cellular structures in the cochlear lateral wall, age-related loss of auditory nerve fibers, and neural changes in the brain affecting signal processing and interpretation. All of these affect the ability of the inner ear and higher neural centers to process acoustic signals and effectively separate the primary speech signal from interfering speech and noise. Regardless

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of which auditory pathways are affected, the functional consequences will likely include an inability to hear some sounds (particularly high-frequency sounds); an inability to understand subtle differences in spoken words (e.g., "desk" and "debt"), especially in noisy environments; a poorer ability to process acoustic information quickly; and difficulty identifying sources of sound (Roth, 2015; Yamasoba et al., 2013). Generally, individuals present with symmetrical loss which is more apparent with high-frequency sounds and which is commonly more severe in men than in women (Van Eyken et al., 2007; see Chapter 2). Age-related hearing loss is very common, but its rate varies across populations (see Chapter 2), and some people retain excellent hearing well into late ages. There is strong evidence that genetic susceptibility contributes to the variation (Cruickshanks et al., 2010). The etiology of age-related hearing loss is not known, but there is emerging evidence that many potentially modifiable factors (e.g., smoking, adiposity, and vascular disease) are associated with the risk of developing age-related hearing loss (see Chapter 2).

DEFINITIONS AND TERMINOLOGY

As it began its work, the committee recognized the need to determine and then convey the definitions it was using for the key terms in its charge ("affordability" and "accessibility") as well as for various hearing-related terms used in the report. This report uses the term "hearing health care" to encompass the range of services (e.g., diagnosis and evaluation, auditory rehabilitation; see Chapter 3) and hearing technologies (hearing aids and hearing assistive technologies; see Chapter 4) relevant to hearing loss. The committee viewed hearing health care through the social-ecological model (discussed later in this chapter) to emphasize the multiple levels of support and action needed throughout society to promote hearing and communication and reduce hearing loss and its effects. For the purposes of this report the term "hearing health care professionals" is used broadly to encompass those who work in hearing health care (including audiologists, hearing instrument specialists, and otolaryngologists). The term is used throughout the report primarily for ease—that is, one collective term rather than listing each group repeatedly throughout the report—and is not meant to imply any other meaning outside of the report context. The committee also notes that its use of the phrase "mild to moderate hearing loss" is inclusive of the spectrum from mild through moderate hearing loss.

Defining Affordability and Accessibility

Because the committee's charge focused on improving the affordability and accessibility of hearing health care, clear definitions of these two

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terms are critical to the discussions in this report. Access has been defined as "the timely use of personal health services to achieve the best possible health outcomes" (IOM, 1993, p. 33). This definition focuses on both the use of appropriate health services and on improved health outcomes from such services. The 1993 Institute of Medicine (IOM) report goes on to state, "The test of equity of access involves determining whether there are systematic differences in use and outcome among groups in society and whether these differences are the result of financial or other barriers to care" (IOM, 1993, p. 33). Thus, affordability is a part of access. If health care—be it determining the need for health care, visits to the health care provider, or the prescribed treatment—is too expensive for the individuals affected, it will not be accessible. The definition of access used by Healthy People 2020 incorporates four components: reimbursement coverage, services, timeliness, and workforce (HHS, 2015). As will be discussed in this report, if hearing health care (services and technologies) is to become truly accessible, it will be vital to address the geographic, language, and cost barriers to such care.

It is challenging to define affordability in the context of a specific product or service. *Merriam-Webster's Dictionary* defines *afford* as "to be able to pay for (something); to be able to do (something) without having problems or being seriously harmed" and *affordable* as being "within someone's ability to pay; reasonably priced" (Merriam-Webster, 2015). Affordability at the individual or family level thus largely depends on household income versus necessary expenditures. For example, the Department of Housing and Urban Development notes that families who "pay more than 30 percent of their income for housing are considered cost burdened and may have difficulty affording necessities such as food, clothing, transportation and medical care" (HUD, 2015). An estimated 12 million U.S. households (renter and homeowner) pay more than 50 percent of their annual income for housing (HUD, 2015).

As discussed in Chapters 4 and 5, the price of hearing aids (often bundled with the price for hearing health care services) have often been cited as deterrents to purchase and access, and because there is a general lack of options for hearing health care coverage for most adults (e.g., private insurance, Medicare, Medicaid) these products and services are not affordable for many potential users. The median household income in the United States was estimated by the U.S. Census Bureau to be $53,657 in 2014, with 33.7 percent of all American households having an annual income of less than $35,000 (DeNavas-Walt and Proctor, 2015). Among Medicare beneficiaries, half had an annual income below $24,150 in 2014 (Jacobson et al., 2015). The decision of whether to purchase hearing aids and the associated services (often the initial price is several thousand dollars or more, plus there are ongoing maintenance and, eventually, replacement costs; see

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Chapter 5) must compete with decisions about whether to purchase other necessities. Thus, many individuals must make choices about what will fit into their budget and may forego hearing health care to meet other needs.

Hearing-Related Terminology

The hearing abilities of individuals can vary widely across the life span. Some individuals are born without the ability to hear any sound, while others may experience hearing loss either acutely or gradually, with the extent of the hearing loss ranging from mild to profound. Thus, appropriately defining and categorizing those various abilities and their effects on communication can be a challenge.

Individuals who are considered to be deaf generally have profound loss of hearing at most or all frequencies. The term "deaf" when used with a capital "d," *Deaf*, often is used to refer to a community and culture of individuals who share a language (American Sign Language) and cultural values and priorities (NAD, 2015; Padden and Humphries, 1988). How individuals choose to refer to themselves is often influenced by the type and nature of the individual's hearing challenges, age of onset of hearing loss, preferred communication methods, personal preferences, and support community (NAD, 2015).

The term "hearing impaired" has been used extensively, especially by professionals who use it as a single term to cover all types and degrees of hearing loss, but for the individual with hearing loss the term may bring with it the connotation of focusing on limitations and functional challenges (NAD, 2015). Although the term "hearing loss" is generally used to indicate hearing function that is poorer than normal in the population, the term may not apply to individuals who were born with some degree of hearing difficulties that remain unchanged over time, as they did not lose an ability they never had (NAD, 2015). The term "hard of hearing" has also been used, often as a way of differentiating the degree of hearing loss from deafness (e.g., "deaf or hard of hearing"), but the committee did not find it to be descriptive of the condition.

This report makes every attempt to use hearing-related terms in a manner that is conscientious and respectful of all people who are touched by hearing-related challenges. The committee's task (see Box 1-1) is to focus on adults who use nonsurgical methods to address their hearing conditions; therefore, the committee chose to primarily use the term "hearing loss," while acknowledging that some people who use hearing aids or other nonsurgical services and technologies have had hearing difficulties since birth. The report addresses issues of importance to individuals with deafness and to the Deaf community; however, deafness is not the focus of this report.

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Another question of terminology relates to the different roles people are in when they address hearing loss and interact with hearing health care professionals. A person with hearing loss may at various times be a *patient* seeking care and treatment options, a *consumer* making purchasing decisions, or an *individual* participating in his or her community and seeking the best ways to meet his or her communication needs. A person can be in one, two, or all three of these roles at the same time. The committee uses the terms interchangeably to some extent, while trying to use the terms as appropriately as possible in a given context.

WHY FOCUS ON ACCESSIBILITY AND AFFORDABILITY OF HEARING HEALTH CARE NOW?

Hearing health care is in the midst of many of the same major challenges that the health care system, public health, and society in general are now facing. The following overview briefly explores several reasons why there is a critical need for a comprehensive study of hearing health care focused on improving its accessibility and affordability. Many of the issues discussed here are examined in greater depth in the chapters that follow.

Changing Demographics: Intersection of Hearing Loss and Aging

In the United States, as in many other countries, the median age of the population is increasing, and older individuals are living increasingly longer, during which time aging-associated chronic conditions—and, often, multiple such conditions in a given individual—may emerge and challenge health and social systems (Halter et al., 2009). As a result, it is likely that larger numbers of people will have hearing loss and require and seek care in the coming years. The demographic composition of the U.S. population has been influenced by several factors, including increased life expectancy, improved health care and nutrition, and changes in birth and mortality rates. In 1900, 4.1 percent of the U.S. population (just more than 3 million people) was 65 years or older; by 2012 that age group accounted for 13.7 percent of the population (more than 40 million people); and it is projected that by 2060, individuals 65 years and older will constitute 24 percent of the U.S. population (see Figure 1-1; ACL, 2016; Colby and Ortman, 2015; West et al., 2014). Similar aging trends are occurring around the world (NIA and WHO, 2011).

Hearing loss is a common chronic disability in older adults, can escalate with age, especially in those over 80 years of age (see Chapter 2), and its effects on verbal communication and, as a consequence, on social interactions and functional limitations have serious public health implications. Limitations in activity associated with chronic conditions, including hearing

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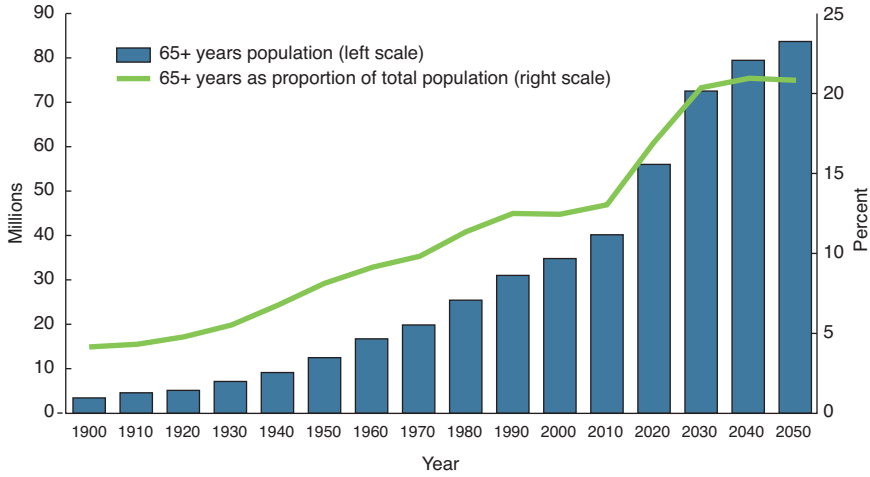

FIGURE 1-1 Population of adults ages 65 years and older in the United States, 1900–2050. SOURCE: West et al., 2014.

loss, affect greater numbers of older adults as age increases, and the functional impact of hearing loss may be magnified by the coexistence of other such conditions. As the population ages, more people may have moderate to severe hearing loss, which could require more services and potentially more complex services.

Recognizing Hearing Loss as a Public Health Priority and a Societal Responsibility

Long seen as an issue for individuals (and to some extent their families and friends), there is a growing realization that hearing loss is a significant public health concern that is influenced and affected by decisions and actions at multiple levels of society. Loss of hearing may lead to a reduction in quality of life due to communication challenges that can affect interactions with others and that have the potential for effects on cognition, behavior, and other aspects of health (see Chapter 2). However, the application of successful strategies to overcome the functional challenges of hearing loss and enhance communication capabilities can increase an individual's participation in meaningful activities (see more on the *International Classification of Functioning, Disability and Health* in Chapter 3).

Centered on the individual, the social-ecological model (see Figure 1-2) illustrates the relationships and interactions among personal and environmental factors across society that play a role in hearing health: indi-

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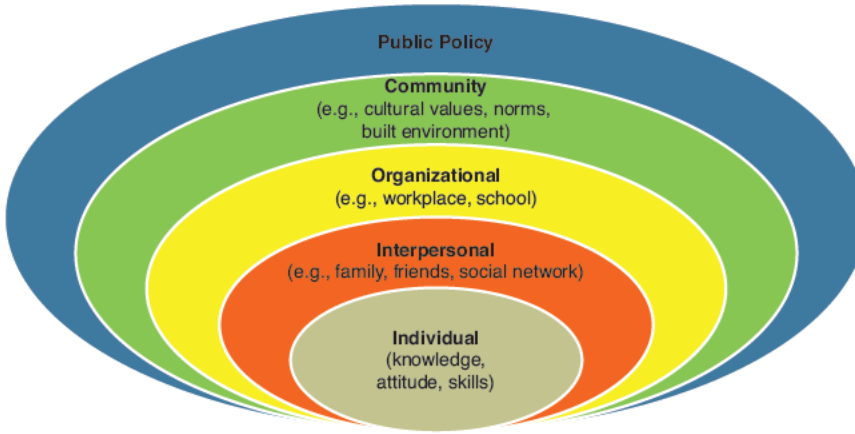

FIGURE 1-2 Social-ecological model.
SOURCE: NIH, 2016. Reprinted with permission.

vidual; family, friends, and other interpersonal relationships (including peer-support groups); organizational (including supports through school, post-secondary education, and workplace); community (ranging from the built environment and acoustics in public spaces to destigmatizing hearing loss); and public policy and regulation (regulations on technologies or policies regarding health insurance coverage or other issues).

The social-ecological model has been more fully developed for other health issues, such as obesity prevention, where factors outside of the individual (e.g., available foods, access to opportunities for physical activity, and public policies on school lunches) play a role in choices, behaviors, and actions (CDC, 2013; IOM, 2005). The relevance of this model to hearing loss can be found in the breadth of responsibilities and actions that encompass successful hearing health care. The committee emphasizes the social-ecological model throughout this report, with particular attention in Chapter 6 to the multiple levels of supports and actions involved in hearing health care.

Rapidly Changing Technologies

The pace of technology change and adoption is accelerating at ever-increasing rates (McGrath, 2013). As discussed in Chapter 4, hearing-related technologies are rapidly evolving and moving toward more wearable and integrated systems. Recently, the President's Council of Advisors on Science and Technology released a report on devices and products for older

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adults who have mild to moderate hearing loss in which they noted "the unnecessarily high price of hearing aids for individuals and the conspicuously slow pace of innovation by their manufacturers compared with other consumer electronics" (PCAST, 2015, p. 9; also see Chapter 4).

"Hearables" is a relatively new term used to denote a wide range of hearing- and ear-based technologies with various and often multiple purposes which include communication, entertainment, fitness tracking, and physiologic measures in addition to enhancing hearing capabilities. Technologies specific to hearing include hearing aids as well as personal sound amplification products and hearing assistive technologies that connect the user with the television, the telephone, and public sound systems. It is critical that all sectors of hearing health care are fully engaged in these advances and are fully utilizing effective technologies to improve hearing and communication and to assure interoperability and connectivity. These new opportunities and technologies necessitate a call for a critical review of current policies and approaches and increased attention to fully informing the public, particularly those with hearing loss, about the range and capabilities of the options.

Changes in Health Care Paradigms

The hearing health care system is largely unknown to or difficult to penetrate by the general public. Routes for accessing hearing health care go through both business-driven and health care-driven pathways, with sparse information available on the appropriate pathways for individuals to gain access to the services and technologies best suited to meet their needs (see Chapter 3). Health care in general is also undergoing transformations that can propel hearing health care forward, and priorities have been identified which can be applied and incorporated into hearing health care (see Box 1-3).

Efforts are focused on patient-centered care that is evidence-based with attention to quality, safety, and value. Team-based care is also a priority, with teams that include the patient and family in addition to the relevant health care professionals. Principles identified as key to team-based health care are shared goals, clear roles, mutual trust, effective communication, and measurable processes and outcomes in a continuous loop of improvement (Mitchell et al., 2012). Additionally, emphasis on a learning health care system will be of great benefit to hearing health care. As defined, a learning health care system is "one in which science and informatics, patient–clinician partnerships, incentives, and culture are aligned to promote and enable continuous and real-time improvement in both the effectiveness and efficiency of care" (IOM, 2013, p. 17).

Health care encompasses a broad network with widely varying resources and skills applied to a vast array of health concerns. Neverthe-

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Box 1-3 HEALTH CARE GOALS

Health care should be

- *Safe*—avoiding injuries to patients from the care that is intended to help them.
- *Effective*—providing services based on scientific knowledge to all who could benefit and refraining from providing services to those not likely to benefit (avoiding underuse and overuse, respectively).
- *Patient centered*—providing care that is respectful of and responsive to individual patient preferences, needs, and values and ensuring that patient values guide all clinical decisions.
- *Timely*—reducing waits and sometimes harmful delays for both those who receive and those who give care.
- *Efficient*—avoiding waste, including waste of equipment, supplies, ideas, and energy.
- *Equitable*—providing care that does not vary in quality because of personal characteristics such as gender, ethnicity, geographic location, and socioeconomic status.

SOURCE: IOM, 2001.

less, progress is being made and efforts put forward that coordinate and integrate hearing health care into the evolving broader health care system. Hearing health care, throughout all of its diverse professional and patient care pathways, offers a wealth of opportunities for fully engaging in changing the paradigms and embracing the quality measures and actions that can improve care for individuals with hearing loss. Opportunities include the exploration and evaluation of diverse delivery and payment systems (see Chapters 3 and 5).

GUIDING PRINCIPLES

In examining the complex issues around hearing loss in adults and hearing health care, the committee developed a set of principles that helped shape its work.

- *Prioritize the needs of individuals with hearing loss*—The committee's priority was concern for individuals with hearing loss and, in particular, on ensuring that these individuals have opportunities for accessible and affordable services and technologies to meet their communication needs. Accordingly, the committee's work focused solely on what it deemed best for consumers/patients/individuals and not on meeting the needs of specific professions or industries.

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- *Emphasize hearing as a public health concern with societal responsibilities and effects*—Actions needed to improve hearing and promote communications for individuals with hearing loss require a public health approach that involves efforts across multiple levels of communities and society. The impacts of hearing loss on individuals, families, and society require broad attention to this public health issue, including reducing the stigma often associated with hearing loss. Efforts to improve hearing environments and promote communication can yield benefits for all members of society.
- *Move toward equity and transparency*—Opportunities for improving hearing health care will require that services and products are available to those who need them across the socioeconomic and geographic spectra. Options for selecting those services and products need to be provided in transparent and itemized formats that meet the various health literacy levels of all adults and with data that compare effectiveness based on outcomes and cost using peer-reviewed research.
- *Recognize that hearing loss may require a range of solutions*—No one solution will work for everyone with hearing loss, and therefore the committee emphasizes the range of needs, solutions, and opportunities across the various levels of severity in hearing loss, types of hearing loss, and ways to mitigate hearing loss, maximize hearing, and improve the hearing environment. The goal is a person-centered, person-directed continuum of care across the life span.
- *Improve outcomes with a focus on value, quality, and safety*—Changes are occurring at a rapid rate in hearing health care technologies and in the delivery of hearing health care services, and actions will be required to ensure that these efforts are coordinated, safe, evaluated, and focused on best practices that provide value in improving hearing and communication capabilities for individuals with hearing loss.
- *Work toward an integrated approach that provides options*—The committee provides an approach to hearing health care that integrates services and technologies as appropriate to meet each person's needs. Accessibility, affordability, and awareness are some of the key barriers that contribute to individuals not being able to optimally use hearing health care. Hearing aids and hearing assistive technologies are tools that benefit from careful and unbiased diagnostic and functional assessments of an individual's needs and that can be supplemented by auditory rehabilitation services as appropriate. Creating a variety of options can help enable individuals with hearing loss overcome the specific barriers they face.

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ORGANIZATION OF THIS REPORT

This report covers the breadth of the committee's statement of task. Chapter 2 focuses on population-based studies and provides an overview of the evidence on the extent and impact of hearing loss. The focus of Chapter 3 is on hearing health care services, with overviews of the range of hearing health care professionals and the services they provide and with particular attention paid to improving the accessibility of hearing health care services. Hearing technologies are the area of emphasis in Chapter 4, which includes details on current regulations and the committee's recommendations for change. The affordability of hearing health care (technologies and services) is examined in Chapter 5, with discussions of current coverage and exploration of the opportunities to make hearing health care more affordable. Chapter 6 explores issues spanning multiple areas of the community and society that affect access to and use of hearing health care. The report concludes in Chapter 7 with a call to action on hearing health care that will require efforts and collaborations across the range of involved parties, including individuals; families; health care professionals and organizations; employers; insurers; hearing technology industries; government agencies at the local, state, and federal levels; and the general public.

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2

Hearing Loss: Extent, Impact, and Research Needs

Hearing loss may develop at any time during the life course. The onset can be sudden or gradual, and one or both ears can be affected. Hearing loss can result from a variety of causes (e.g., trauma, infection, genetic syndromes, aging, or excessive noise exposure), and the pathological changes may occur in one or more regions of the auditory system. Although some hearing loss might be temporary or treatable using medical or surgical methods, most hearing loss in adults is permanent or slowly progressive. When evaluating the burden of hearing loss in a population, it is important to recognize the heterogeneity in the nature and severity of hearing loss. Individuals also vary in the extent to which auditory rehabilitation, hearing aids, and hearing assistive technologies can improve their communication function (see Chapters 3 and 4). Lessening the effects of hearing loss and improving health and function are the goals of this report's discussions. This chapter begins with an overview of data on the incidence and prevalence of hearing loss in adults and a discussion of the factors associated with the risk for hearing loss in adults and methods for prevention. Subsequent sections discuss the impact of hearing loss on individuals, their families, and society. The chapter ends with the committee's recommendations for next steps in this area.

To develop a full understanding of the public health burden of hearing loss in adults in the United States, the committee gathered information from multiple sources in order to determine the extent to which the U.S. population is affected by hearing loss and the impact of those losses. The committee conducted extensive literature searches, with a focus primarily on articles that relied on audiometric measures of hearing; studies using self-

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report were included only when they were deemed essential. Cross-sectional epidemiological studies that measure the sensitivity of the auditory system at only one point in time rarely distinguish the pattern of onset or subtype of hearing loss. Because childhood onset of hearing loss as well as most types of acquired hearing loss in adolescence and the early adult years are relatively rare, and because the most common type of hearing loss among aging adults is a slowly developing, symmetrical sensorineural hearing loss called age-related hearing loss or presbycusis, population-based cohorts primarily focus on age-related hearing loss.

Box 2-1 OVERVIEW OF SELECTED STUDIES

Baltimore Longitudinal Study of Aging (1958 to ongoing)—This longitudinal study of adults (531 individuals in the Baltimore–Washington Metropolitan area at baseline) assesses physical and cognitive changes associated with aging (Brant et al., 1996).

Beaver Dam Offspring Study (2005 to ongoing)—The middle-aged adult offspring of participants in the Epidemiology of Hearing Loss Study (described below) were invited to participate in this study which focuses on age-related sensory impairments. The baseline study (2005–2008) had 3,285 participants (Nash et al., 2011). Audiologic assessments were conducted in 2005–2008 with 5-year follow-up in 2010–2013 (Fischer et al., 2015).

Blue Mountains Hearing Study (1997 to 2004)—This population-based study of age-related hearing loss was conducted with a cohort of adults aged 49 years or older living west of Sydney, Australia. From 1997 to 1999, 2,956 individuals underwent audiometric testing, and of those 870 without hearing loss and 439 participants with hearing loss were reexamined from 2002 to 2004 (Mitchell et al., 2011).

Epidemiology of Hearing Loss Study (1993 to ongoing)—Population-based sample of residents of Beaver Dam, Wisconsin, who were 43–84 years of age in 1987–1988. Audiometric examinations to measure the prevalence of hearing loss are ongoing and were conducted in 1993–1995 (n = 3,753), 1998–2000 (n = 2,800), 2003–2005 (n = 2,395), and 2009–2010 (n = 1,812) (Cruickshanks et al., 1998, 2003, 2010a, 2015b).

Framingham Heart Study (1948 to ongoing)—Designed to focus on cardiovascular health in a cohort of residents of Framingham, Massachusetts, with an original cohort of 5,209 individuals who were 30 to 62 years old. Audiologic assessments were conducted in 1978–1979 and 1983–1985 (Gates et al., 1990; Mościcki et al., 1985).

Health, Aging, and Body Composition Study (Health ABC Study) (1997 to ongoing)—This clinical research study is examining changes in body composition and a range of health conditions in older adult residents in the Pittsburgh, Pennsylvania and Memphis, Tennessee areas. At baseline (1997–1998), the sample of 3,075 adults,

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DISTRIBUTION OF HEARING LOSS

Studies examining the incidence and prevalence of hearing loss include those that track a number of health outcomes in a cohort (e.g., the Framingham Heart Study, Baltimore Longitudinal Study of Aging) and a few population-based studies that are focused on hearing (e.g., Blue Mountains Hearing Study, Epidemiology of Hearing Loss Study) (see Box 2-1). Information on the extent of hearing loss in military personnel and veterans has been explored in several recent Institute of Medicine reports (IOM, 2006, 2014).

ages 70 to 79 years, had about equal numbers of men and women (33 percent of the men were African American, as were 46 percent of the women) (Kalogeropoulos et al., 2009). Audiometry was included in the examination from 2001 to 2002.

Hispanic Community Health Study/Study of Latinos (2008 to 2011)—This population-based study examined the prevalence and potential risk factors associated with hearing impairment among self-identified Hispanic/Latino adults of ages 18 to 74 years from randomly selected households in four U.S. communities: Bronx, New York; Chicago, Illinois; Miami, Florida; and San Diego, California. Audiometric examinations of 16,415 adults were conducted in 2008–2011 (Cruickshanks et al., 2015a).

Hispanic Health and Nutrition Examination Survey (1982 to 1984)—This multistage sampling study used audiometric and medical examinations to investigate hearing loss and hearing aid use in 1,682 Mexican Americans (Arizona, California, Colorado, New Mexico, and Texas), 441 Cuban Americans (Miami, Florida), and 628 Puerto Ricans (New York City, New York) aged 20–74 (Lee et al., 1991).

Longitudinal Study of Hearing (1983 to 1986)—Using data from two longitudinal studies (one from Great Britain, and one from Denmark), researchers examined the progression of hearing impairment in adults over time. From the Great Britain sample, 98 of the original 432 participants completed the three visits. The second visit was, on average, 2 years after the first, and the third visit was 4.6 years after the first. For the Denmark sample, 206 middle-aged men completed an audiometric assessment at the first visit, 158 at the second visit (3 years after the first), and 135 at the third visit (8 years after the first) (Davis et al., 1990).

National Health and Nutrition Examination Survey (1959 to ongoing)—This program of studies examines the health and nutritional status of adults and children in the United States through interviews and examinations. Each year a representative sample of approximately 5,000 individuals participates in the study (CDC, 2015c). Audiometric assessments of hearing have been included in some years of the examination.

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Incidence of Hearing Loss

In addition to providing estimates of the risk of developing a disorder, studies of incidence measure the relative risk associated with such characteristics as age, sex, and race as well as potentially modifiable exposures and other factors that may add prospective evidence for identifying causal pathways. The few studies that have measured the incidence of hearing loss are summarized in Table 2-1. Study designs and methods varied across studies, with only two of the cohorts using traditional population-based designs (Cruickshanks et al., 2003, 2010a, 2015b; Mitchell et al., 2011) and one (Fischer et al., 2015) based on the offspring of one of the population-based cohorts. The other studies employed selection criteria at baseline that may have resulted in a healthier than average sample (Brant and Fozard, 1990; Brant et al., 1996; Gates and Cooper, 1991; Gates et al., 1990; Mościcki et al., 1985) or used very small samples not intended to be representative of the general population of adults (Davis et al., 1990). All but the Baltimore Longitudinal Study of Aging (BLSA), which used Békésy audiometry (a form of automated audiometry), used traditional audiometric assessments of hearing thresholds. The definitions of hearing loss cases varied slightly by frequencies included in the pure tone average. They also differed in that some required bilateral hearing loss (defined by hearing loss in both ears based on the better ear) while others (using the hearing in the worse ear to define cases) included unilateral and bilateral cases. The length of follow-up time varied from 2 to 15 years, with most reporting 5-year event rates. The Epidemiology of Hearing Loss Study (Cruickshanks et al., 2003) and the Beaver Dam Offspring Study (Fischer et al., 2015) cohorts had predominately non-Hispanic white participants. Other cohorts did not report the race/ethnic distributions of their samples, and no data were presented stratifying on race/ethnicity, which suggests, given the demographics of their catchment areas, that the majority of participants also were non-Hispanic white. The committee is not aware of any other published reports of the incidence of hearing loss measured by audiometry in minority populations in the United States.

The reported incidence rates, standardized to annual rates per 1,000 individuals (see Table 2-1), vary from 12 per 1,000 individuals per year in Great Britain to 42.8 per 1,000 individuals per year in Beaver Dam, Wisconsin, and were higher in studies focused on middle-aged and older adults and lower in studies that included younger adults or excluded less healthy participants. The Blue Mountains cohort in Australia was designed to be comparable to the Beaver Dam cohort, and the incidence rates appear remarkably similar when comparing rates using the same pure tone average definition (42.2 per 1,000 individuals per year in the Blue Mountain Hearing Study and 42.8 per 1,000 individuals per year in the Epidemiology of Hearing Loss Study) (Cruickshanks et al., 2003; Mitchell et al., 2011).

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However, these comparisons are limited, as no adjustments have been made across cohorts for the actual age and sex distributions of the participants. Nonetheless, the risk of hearing loss was high in all studies of older adults, as can be seen in Table 2-1. Comparing these rates to those for cardiovascular disease (34.6/1,000/year for men and 20.0/1,000/year for women ages 65 to 74 years in the Framingham Heart Study) (NHLBI, 2006), diabetes (7.8/1,000/year) (CDC, 2014), and cancer (4.548/1,000/year) (NCI, 2016) reveals that the risk of hearing loss is up to 2-fold higher than the risk of cardiovascular disease, approximately 5-fold higher than the risk of diabetes, and about 10-fold higher than the risk of cancer. The risk of bilateral hearing loss is approximately 7-fold higher than the risk of bilateral vision impairment (Klein et al., 2001).

Age and Sex

Figure 2-1 shows the age- and sex-specific 5-year incidence of hearing loss in either ear from the Epidemiology of Hearing Loss Study and for bilateral hearing loss in the Blue Mountains Hearing Study (Cruickshanks et al., 2003; Mitchell et al., 2011). Among non-Hispanic white participants in these studies, the incidence of hearing loss was higher at older ages and, within each age group in the Epidemiology of Hearing Loss Study, higher among men than among women. The data on the 80-years-and-older groups have broader confidence intervals because there were fewer participants who did not have hearing loss at baseline and who did have follow-up data.

Although incidence data are scarce and limited to non-Hispanic white populations, the data suggest that the risk of hearing loss increases across the life span and throughout older age and that men have a higher risk of hearing loss than women do. Based on the Epidemiology of Hearing Loss Study data, 18 percent of women aged 60–69 and 35 percent of men aged 60–69 developed hearing loss within 5 years (Cruickshanks et al., 2003).

By 15 years of follow-up, when the participants were 75–84 years of age, 71 percent of the women and 84 percent of the men had developed hearing loss (Cruickshanks et al., 2015b). In models that adjusted for age and sex, the risk of hearing loss nearly doubled with every 5 years of age (hazard ratio [HR] = 1.90, 95 percent confidence interval [CI] = 1.79, 2.02), and men were more than twice as likely as women to develop hearing loss during 15 years of follow-up (HR = 2.23, 95 percent CI = 1.86, 2.66) (Cruickshanks et al., 2015b).

Prevalence of Hearing Loss

In contrast to the limited data on the incidence of hearing loss, numerous cross-sectional studies have described the prevalence of hearing loss.

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TABLE 2-1
Selected Studies of Incidence of Hearing Loss

Study and Number of Participants	Definition of Hearing Loss and Participant Age Range at Baseline	Follow-Up Time	Percent Who Developed Hearing Loss During the Follow-Up Time	Estimated Rate per 1,000 Individuals/ Year
Framingham Heart Study N = 1,475[a] (Gates and Cooper, 1991)	PTA of 0.5, 1, and 2 kHz > 26 dB HL Age of participants: 58–88 years	6 years	8.4 (right ear) 13.7 (left ear)	NA
Longitudinal Study of Hearing Great Britain: N = 404 Denmark: N = 157 (Davis et al., 1990)	PTA of 0.5, 1, 2, and 4 kHz > 25 dB HL in better ear Age of participants: Great Britain: 40–65 years; Denmark: 49–69 years	Great Britain: 2 years; Denmark: 3 years	Great Britain: 2.4 Denmark: 6.9	Great Britain: 12 Denmark: 23
Baltimore Longitudinal Study of Aging N = 531 men (Brant et al., 1996)	PTA of 0.5, 1, 2, and 3 kHz ≥ 30 dB HL in either ear (using Békésy audiometry) Age of participants > 25 years	5.1 to 11.2 years[b]	8.7	NA
Epidemiology of Hearing Loss Study N = 1,678[c] (Cruickshanks et al., 2003, 2010a, 2015b)	PTA of 0.5, 1, 2, and 4 kHz > 25 dB HL in either ear Age of participants: 48–92 years	5, 10, or 15 years	5 years: 21.4 10 years: 37.2 15 years: 56.8	5 years: 42.8 10 years: 37.2 15 years: 37.9
Blue Mountains Hearing Study N = 870 (Mitchell et al., 2011)	PTA of 0.5, 1, 2, and 4 kHz > 25 dB HL in better ear PTA of 0.5, 1, 2, and 4 kHz > 25 dB HL in worse ear Age of participants: > 49 years	5 years	17.9 21.1	35.8 42.2
Beaver Dam Offspring Study N = 1,984[d] (Fischer et al., 2015)	PTA of 0.5, 1, 2, and 4 kHz > 25 dB HL in either ear Age of participants: 21–79 years	5 years	8.3	16.6

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NOTE: dB = decibel (measure of sound intensity or volume); db HL = decibels hearing level; kHz = kilohertz (measure of frequency of sound waves); N = number of participants without hearing loss at baseline; NA = not available; PTA = pure tone average.

[a]Number of individuals followed for progression of hearing decline.

[b]Follow-up times varied by age: < 50 years = mean of 10.9 years; 50–59.9 = mean of 11.2 years; 60–69.9 = mean of 7.8 years; ≥ 70 = mean of 5.1 years.

[c]At baseline, 1,925 individuals had normal hearing. Over the course of the study, 1,678 individuals participated in at least one follow-up examination (1,636 participated in the 5-year follow-up, 1,465 at 10 years, and 1,240 at 15 years).

[d]Number of participants who had 5-year follow-up audiometric testing. Number of participants without hearing loss at baseline = 2,436.

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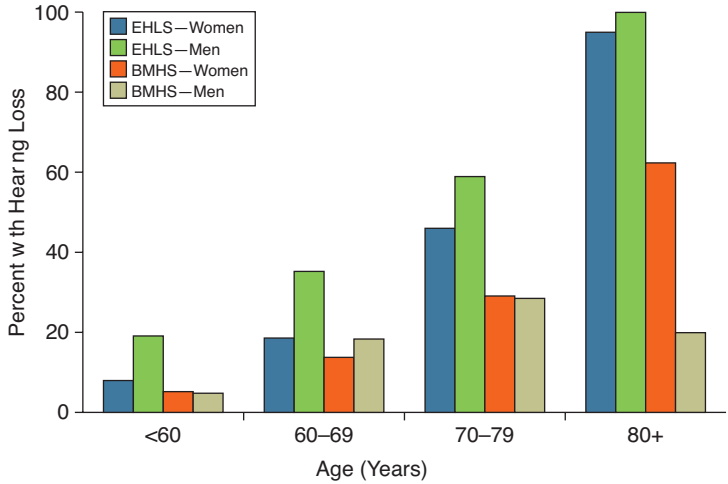

FIGURE 2-1 Five-year incidence in the Epidemiology of Hearing Loss Study and Blue Mountains Hearing Study (Cruickshanks et al., 2003; Mitchell et al., 2011). Incidence rates were found to be greater for men less than 70 years of age than for women in the same age range in the EHLS, but significant gender differences in incident hearing loss were not observed in the BMHS. At the 5-year follow-up examinations, EHLS participants were 53–97 years of age and BMHS participants were 54 years and older.
NOTE: BMHS = Blue Mountains Hearing Study; EHLS = Epidemiology of Hearing Loss Study.

Several large cohort studies carried out in the United States are summarized in Table 2-2. Direct comparisons of the prevalence rates are problematic because of the differences in the age and sex distributions across cohorts. Data from the National Health and Nutrition Examination Survey (NHANES) show that the prevalence of hearing loss rises steeply with age, as shown in Figure 2-2, from 3 percent among adults 20–29 years of age to 49 percent among adults 60–69 years of age (Agrawal et al., 2008). When adults of ages 70 years and older were tested in a more recent wave of NHANES, the prevalence of bilateral hearing loss was found to be 45.6 percent among the 70- to 74-year age group and 80.6 percent in the 85-years-and-older age group (Lin et al., 2011c). These data likely underestimate the true population prevalence since NHANES does not include people living in assisted care facilities, group homes, or nursing homes or those unable to come to the mobile examination center. Insufficient numbers of people from some minority groups and the oldest old are included to produce robust estimates of the prevalence of hearing loss in these subgroups of the population. Using NHANES data, Agrawal and colleagues estimated that 29 million adults ages 20–69 years in the United States have hearing loss, and Lin and colleagues estimated that 30 million people ages 12 and older

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TABLE 2-2
Selected Studies of Prevalence of Hearing Loss

Study, Number, Sex, and Age of Participants	Definition of Hearing Loss	Percent with Hearing Loss (%)
Framingham Heart Study N = 2,293; 40.8% men Age of participants: 57–89 years (Mościcki et al., 1985)	PTA of 0.5, 1, and 2 kHz > 20 dB HL in better ear PTA of 0.5, 1, and 2 kHz > 20 dB HL in worse ear PTA of 0.5, 1, and 2 kHz ≥ 25 dB HL in better ear PTA 0.5,1,2,3 > 25 dB HL in better ear PTA 0.5,1,2,4 > 25 dB HL in better ear	35 53 31 36 47
Framingham Heart Study N = 1,662; 40.7% men Age of participants: 63–95 years (Gates et al., 1990)	PTA of 0.5 to 4 kHz > 26 dB HL in better ear	29
Hispanic Health and Nutrition Examination Survey N = 2,751; % men not reported Age of participants: 20–74 years (Lee et al., 1991)	PTA of 0.5, 1, and 2 kHz > 25 dB HL in either ear	Age-, sex-, and ethnic-background-specific rates varied from 2.3 to 48.1
Epidemiology of Hearing Loss Study N = 3,753; 42.3% men Age of participants: 48–92 years (Cruickshanks et al., 1998)	PTA of 0.5, 1, 2, and 4 kHz > 25 dB HL in worse ear	45.9
Health, Aging, and Body Composition Study (Health ABC) N = 2,052; 47.3% men Age of participants: 73–84 years (Helzner et al., 2005)	Low-frequency: PTA of 0.5, 1, and 2 kHz > 25 dB HL High-frequency: PTA of 2, 4, and 8 kHz > 40 dB HL	59.9 76.9
National Health and Nutrition Examination Survey (NHANES) N = 5,742; 46.6% men Age of participants: 20–69 years (Agrawal et al., 2008)	PTA of 0.5, 1, 2, and 4 kHz > 25 dB HL in either ear High-frequency: PTA of 3, 4, and 6 kHz > 25 dB HL in one or both ears	16 32
NHANES 1971–1973: N = 3,192; 47.3% men 1999–2004: N = 4,486; 49.1% men Age of participants: 25–69 years (Cheng et al., 2009)	PTA of 1, 2, 3, and 4 kHz > 25 dB HL in worse ear	1971–1973: 28.5 1999–2004: 21.1
NHANES N = 717; % men not reported Age of participants: over 70 years (Lin et al., 2011c)	PTA of 0.5, 1, and 2 kHz > 25 dB HL in better ear Speech frequency PTA (0.5, 1, 2, and 4 kHz) in better ear	44.8 63.1

continued

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TABLE 2-2
Continued

Study, Number, Sex, and Age of Participants	Definition of Hearing Loss	Percent with Hearing Loss (%)
NHANES 2005–2008: N = 3,143; 2001–2004: N = 3,630; 2005–2006: N = 717; % men not reported Age of participants: over 12 years (Lin et al., 2011b)	PTA of 0.5, 1, 2, and 4 kHz > 25 dB HL in better or either ear	Better ear: 12.7 Either ear: 20.3
Beaver Dam Offspring Study N = 2,837; 45.6% men Age of participants: 21–84 years (Nash et al., 2011)	PTA of 0.5, 1, 2, and 4 kHz > 25 dB HL in worse ear	14.1
Hispanic Community Health Study/ Study of Latinos 2008–2011 N = 16,415; 47.97% men Age of participants: 18–74 years (Cruickshanks et al., 2015a)	PTA of 0.5, 1, 2, and 4 kHz > 25 dB HL in better ear; worse ear	Better ear: 8.24 Worse ear: 15.06

NOTE: dB = decibel (measure of sound intensity or volume); dB HL = decibels hearing level; kHz = kilohertz (measure of frequency of sound waves); PTA = pure tone average.

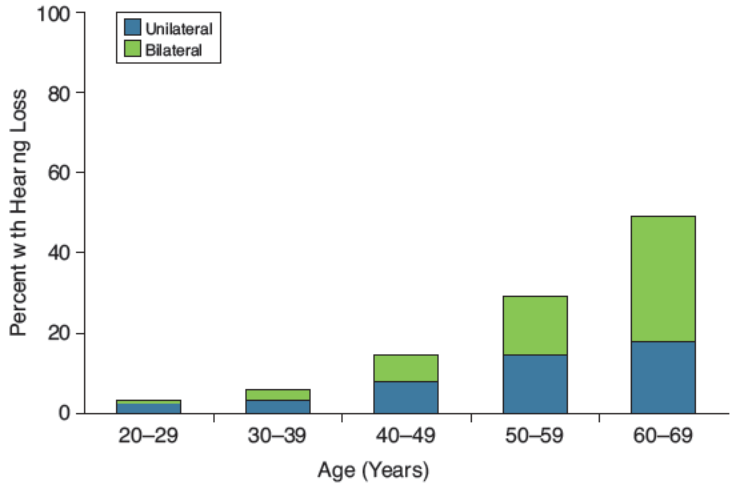

FIGURE 2-2 National Health and Nutrition Examination Survey data on the extent of unilateral and bilateral hearing loss in adults, ages 20–69 years.
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have bilateral hearing loss and 48 million people have poor hearing in at least one ear (Agrawal et al., 2008; Lin et al., 2011c).

In the Epidemiology of Hearing Loss Study cohort, conductive hearing losses were present in 8 percent of participants, with 0.2 percent having a history of otosclerosis (an uncommon but disabling form of hereditary hearing loss that can be aggravated by pregnancy, becomes disabling in mid-life, and in older age is functionally complicated by presbycusis) and 1.9 percent reporting having had an onset of hearing loss before age 20 years (Cruickshanks et al., 1998). Most participants with hearing loss had bilateral symmetrical losses, which is consistent with the predominant type among adults being a sensorineural hearing loss acquired in adulthood.

Severity

The studies described above use a clinically significant cutpoint for defining hearing loss that includes mild losses (26–40 dB HL) as well as moderate and severe or profound losses. The severity of the loss may affect hearing health care needs in various important ways. For example, older adults with profound hearing loss may be candidates for cochlear implants, but this surgical intervention would not be appropriate for someone with a mild loss. Therefore, the committee searched for population-based estimates of the prevalence of hearing loss that were stratified by severity. Cheng and colleagues reported the age–sex–race standardized prevalence of hearing loss by severity in adults 20–69 years of age using data from NHANES I (1971–1973) and NHANES 1999–2004 (Cheng et al., 2009). As shown in Table 2-3, the majority of people with hearing loss had a mild loss, and severe or profound losses were rare in the age range studied, which had an upper limit of 69 years. The Blue Mountains Hearing Study

TABLE 2-3
Age-Sex-Race Standardized Prevalence of Hearing Loss by Severity: Ages 20 to 69 Years

	NHANES I (%)	NHANES 1999–2004 (%)
Normal (< 26 dB)	73.5	78.4
Mild (26–40 dB)	17.3	13.9
Moderate (41–70 dB)	7.8	7.3
Severe or profound (71+ dB)	1.3	0.5

NOTE: dB = decibel; NHANES = National Health and Nutrition Examination Survey.
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also reported that the severity of hearing loss increased with age although mild hearing loss was the most common level except in the oldest age group of 85 years and older (Mitchell et al., 2011). Cluster analyses of NHANES data and data from a rural health study described significant variation and gender differences in the shapes of audiogram profiles which may be a useful approach to classifying severity (Ciletti and Flamme, 2008).

Race and Ethnicity

Racial and ethnic differences in the prevalence of hearing loss have been examined in several cross-sectional studies. In the 1999–2004 NHANES, the prevalence of hearing loss among adults 20–69 years was found to be 50 to 60 percent lower among African American participants than among non-Hispanic white participants, and the prevalence among Mexican American participants was similar to that of non-Hispanic white participants (Agrawal et al., 2008). Among older adults (70 years of age or older), this pattern persisted, with non-Hispanic black participants having a lower prevalence than non-Hispanic white participants (Lin et al., 2011c). Similar results were found in the Health, Aging and Body Composition (Health ABC) study (Helzner et al., 2005). In this study of Medicare beneficiaries in two communities (Pittsburgh, Pennsylvania, and Memphis, Tennessee), hearing was tested at the 5-year follow-up visit. Using a pure tone average of 0.5–2 kHz > 25 dB HL cutpoint, they found that the prevalence of hearing loss was 20 to 60 percent higher among white participants than among black participants (Helzner et al., 2005).

In 1982–1984 the Hispanic Health and Nutrition Examination Survey was launched to measure the health of a representative sample of Mexican Americans from the southwestern United States, Cuban Americans from the Miami, Florida, area, and Puerto Ricans from New York City (Lee et al., 1991). Hearing loss (pure tone average 0.5–1, 2 kHz > 25 dB HL either ear) was common in all three groups, but the prevalence was lower among the Puerto Ricans than among the Mexican Americans or the Cuban Americans. More recently, the prevalence of hearing loss was measured in a diverse Hispanic/Latino population as part of the Hispanic Community Health Study/Study of Latinos (Cruickshanks et al., 2015a). In this population-based study in four communities (Bronx, New York; Chicago, Illinois; Miami, Florida; and San Diego, California), hearing loss was common among older adults, and the prevalence was higher among participants with Puerto Rican background than among those with a Mexican background. The prevalence of hearing loss among participants reporting Dominican, Central American, Cuban, South American, or other backgrounds was similar to the prevalence of hearing loss among those with a Mexican background. The report did not include direct comparisons

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between Hispanic/Latino participants and non-Hispanic white participants. The limited data suggest that there may be a racial/ethnic variation in the prevalence of hearing loss, although the causes and the effects of this difference on individuals' function and activities are not known.

Temporal Population Patterns

A few studies have examined changes in hearing loss prevalence over time in the United States. The evidence from these examinations of temporal trends, secular changes, and birth cohort effects suggests that some cases of hearing loss may be preventable since genetic changes would be expected to accrue quite slowly. Modifiable exposures or risk factors are the more likely explanation for rapid shifts in the risk of developing chronic diseases. Although there are no published longitudinal studies of hearing loss incidence over time, data from the 1971–1973 NHANES and 1999–2004 NHANES suggest that the prevalence of hearing loss (pure tone average 1, 2, 3, 4 kHz) declined 4.8 percent between these two time periods, even after adjusting for age, sex, and race (Cheng et al., 2009).

A strong birth cohort effect was found using data from the Epidemiology of Hearing Loss Study cohort and their offspring (Beaver Dam Offspring Study) (Zhan et al., 2010). In each generation (defined as a 20-year period of births) the odds of hearing loss were about 50 percent lower for men and 24 percent lower for women than in the previous generation (Zhan et al., 2010). Similar results were found using early National Health Examination Survey data from 1959–1962 and NHANES data from 1999–2004 (Hoffman et al., 2010). In this paper, the odds of hearing loss among 25–64-year-olds were reported to be about 44 percent lower among men and 34 percent lower among women in the second time period compared to the first. A second report by this group used national data for older adults (64–74 years of age) from 1959–1962 and 1999–2006 (Hoffman et al., 2012). This study found that the prevalence of hearing loss among older adults declined about 25 percent between the first time period and the second. The reasons for these declines are not known, but the findings are consistent with the possibility that adult-onset hearing loss is at least partially preventable or that the rate of loss may be slowed or the onset postponed. Whether the trend will continue remains to be seen. Longitudinal data are not yet available on the impact of current listening patterns (e.g., listening to loud music using ear buds).

Progression of Hearing Loss

Several large longitudinal studies have examined the change in hearing thresholds over time. In the Baltimore Longitudinal Study of Aging, it was

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noted that the rates of change were faster at older ages (Brant and Fozard, 1990). Gates and Cooper (1991) reported that 4 percent of Framingham Heart Study participants experienced a significant decline in hearing during a 6-year follow-up period. Lee and colleagues (2005) followed participants for 3 to 11 years with an average of 10 visits and found that thresholds changed by 0.7–1.2 dB HL per year, depending on the frequency. The rates of change were similar in the population-based Epidemiology of Hearing Loss Study, which tested participants only at 5-year intervals (Wiley et al., 2008). Among participants in that study who had hearing loss at baseline, 53 percent experienced a decline in hearing (> 5 dB HL change in pure tone average) in 5 years. Taken together, these data indicate that hearing diminishes gradually over time, although at an accelerating rate with advancing age. Many, although not all, adults over 80 years of age have some degree of hearing loss (see Figure 2-3). This finding has important implications for hearing health care, as individual needs for amplification and other auditory interventions are likely to change over time and the prevalence of that need will increase as the proportion of the population over 80 years of age increases. Additionally, the surge of older Americans caused by the aging of the boomer cohort raises concerns about the aggregate demands for hearing health care. The slow gradual changes also can mean that adults may not

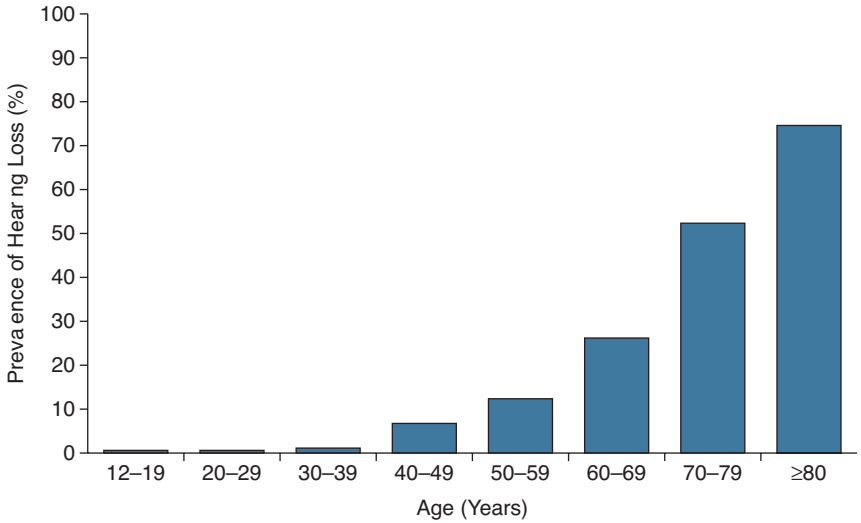

FIGURE 2-3 Prevalence of hearing loss in the United States by age, 2001–2008. Hearing loss is defined by a pure tone average of 0.5–4 kHz thresholds in the better hearing ear > 25 dB HL.
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recognize the deterioration in their hearing and may delay seeking help. More research is needed on the best approaches for improving awareness of gradual hearing loss.

HEARING LOSS: CAUSES AND RISK FACTORS

The complexity of the physiologic and neural mechanisms that undergird hearing and communication in combination with the numerous genetic and environmental factors that can be associated with or the cause of hearing loss makes it a challenging area for research and one in which much remains to be learned. The major causes and risk factors for hearing loss fall into two major categories, congenital and acquired, although there are complex overlaps between the two, including the potential contributions of genetic susceptibilities to certain risk factors.

Congenital and Genetic Hearing Loss

An estimated 2 to 3 of every 1,000 newborn babies in the United States has hearing loss; of those cases, an estimated 50 to 60 percent result from genetic causes (Alford et al., 2014; Kochhar et al., 2007; Mahboubi et al., 2012). More than 100 genes have been identified as having some effect on hearing ability (i.e., nonsyndromic); in addition, more than 400 genetic syndromes result in other clinical abnormalities that may affect hearing ability (Alford et al., 2014; Kochhar et al., 2007). Newborn hearing screening is the standard of care in the United States and in many other countries; in 2013, the Centers for Disease Control and Prevention (CDC) reported that more than 97 percent of newborns in the United States were screened for hearing loss (CDC, 2015a).

The type and degree of hearing loss that appears in newborns vary. Autosomal recessive hearing loss often results from mutations of the GJB2 gene (estimated as 20 percent of all congenital hearing loss), with variations in severity of hearing loss, but individuals often have nonprogressive, severe hearing loss that manifests early in life, usually prelingual (Mahboubi et al., 2012; Venkatesh et al., 2015). The three genes commonly associated with autosomal dominant causes of hearing loss are WFS1, MYO7A, and COCH. WFS1 mutations, for example, affect hearing at high frequencies, while hearing remains normal in the low frequencies (Mahboubi et al., 2012; Venkatesh et al., 2015). For those with mutations in the MYO7A gene, hearing loss is gradual and progressive and manifests in the first 10 years of life. For those with mutations in the COCH gene, hearing loss begins in the 20s, and while the progression is variable, complete deafness often occurs 20 to 30 years later (Mahboubi et al., 2012; Venkatesh et al., 2015).

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Acquired Hearing Loss

As noted in Chapter 1, acquired hearing loss may be sudden or gradual in onset and may be caused by any of a number of exposures, diseases, or health conditions, including meningitis; measles and mumps; otosclerosis (progressive fusion of the ossicles of the middle ear); chronic ear infections; autoimmune or inflammatory disorders; fluid or infection in the ear (otitis media); tympanic membrane (ear drum) thickening or perforations; the use of some antibiotic, antimalarial, or cancer chemotherapeutic medications; some head injuries or other trauma; long-term exposure to excessive noise; cerumen (ear wax) or foreign bodies blocking the ear canal; and aging (presbycusis) (WHO, 2015).

Noise-Induced Hearing Loss

One type of acquired hearing loss is noise-induced hearing loss. Long-term exposure to loud and excessive noise may result in temporary increases in thresholds, or "temporary threshold shifts" (the threshold is the quietest sound that can be heard), and may or may not result in permanent changes in hearing, depending on the level of noise and the length of exposure. Acoustic trauma may result from explosive or impulse noise, with blasts at high intensity levels (~180 dB sound pressure level [SPL]) having the potential to cause hemorrhages, perforation of the ear drum, or impacts on the cochlea (IOM, 2006). As noted in two previous Institute of Medicine reports that reviewed noise exposure data in the context of military service (IOM, 2006, 2014), there are few high-quality prospective studies to quantify the risks associated with these exposures. Most studies of noise in humans have been in occupational cohorts (primarily among men), and few have controlled analyses for factors other than noise or age. One recent report from the Millennium Cohort Study of veterans demonstrated that deployment to combat zones, proximity to improvised explosive devices, and combat-related head injuries were associated with new-onset hearing loss (Wells et al., 2015).

Occupational exposure to noise is regulated in the United States by the Occupational Safety and Health Administration. The National Institute for Occupational Safety and Health (NIOSH) has set recommended occupational exposure limits of 85 dB SPL for an 8-hour time-weighted average (NIOSH, 2015b) and recommends the use of hearing protection measures at higher sound levels. In addition to ear muffs, ear plugs, and other personal hearing protection, workplaces with high noise levels can use environmental (e.g., sound walls or the isolation of loud machinery) and administrative controls (e.g, reduced time worked in noisy environments or increased distance from noise) to reduce exposures (OSHA, 2016). NIOSH

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estimates that between 5 and 30 million workers in the United States are exposed to occupational noise that puts them at risk for hearing loss, with an additional 9 million potentially at risk due to exposure to ototoxic chemicals, such as certain solvents (Fuente et al., 2013; NIOSH, 2015a). A 30-year review of hearing loss data found that the risk of hearing loss may be declining across occupational groups in many industries (Masterson et al., 2015).

The relationship between noise exposure and the incidence of age-related hearing loss is difficult to determine, particularly as most age-related hearing loss affects hearing ability at high frequencies. Several studies have found that a history of noise exposure was not associated with the rate of later declines in hearing acuity (Lee et al., 2005) or the incidence of hearing loss (Cruickshanks et al., 2003, 2010a; Fischer et al., 2015; Mitchell et al., 2011), even in analyses restricted to those currently employed (Cruickshanks et al., 2010a).

In non-occupational, recreational, and home settings, the levels of noise and lengths of exposure vary widely. Distance from the source of the sound is a factor, as is the volume of the sound and the length of continuous exposure. Target shooting and hunting have been associated with acute onset of hearing loss. Other activities with high and often sustained noise levels that may increase risk for hearing loss include listening to music or other sounds at high volume (including through earbuds or headphones that act to increase the proximity to the source of the sound), participating in a music band, attending loud concerts, and using lawnmowers, leaf blowers, or other high-noise tools (NIDCD, 2014). Ongoing research efforts by the National Institute on Deafness and Other Communication Disorders, the Department of Veterans Affairs, the Department of Defense, and many others are examining noise-induced hearing loss and its etiology and treatment (DoD Hearing Center of Excellence, 2016; NIDCD, 2014; VA, 2015).

Reducing time spent in noisy environments and wearing hearing protection to reduce noise exposure to the ear may help prevent noise-induced hearing loss. Much can be done to alleviate background noises and to promote acoustic environments that have widespread benefit for communication (see Chapter 6).

Risk Factors for Age-Related Hearing Loss

The most common form of acquired hearing loss and the focus of the previously reviewed epidemiological studies is age-related hearing loss. Numerous lifestyle factors, cardiovascular risk factors (including diabetes), medications, neurotoxins, and other factors have been found to be associated with the prevalence of hearing loss (Agrawal et al., 2009; Cruickshanks et al., 2015a; Helzner et al., 2011; Nash et al., 2011). This section focuses on

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the results of longitudinal studies that have tested associations with the incidence of audiometrically measured hearing loss or with longitudinal changes in hearing thresholds. Although cross-sectional associations are useful for generating new hypotheses, they are considered weak evidence for potential causal mechanisms and prevention. Observational longitudinal studies have the advantage of providing evidence about exposures that precede the development of the disorder but are not sufficient for determining causal pathways. The strongest evidence would come from randomized controlled trials, a study design that has been rarely used in hearing research.

Socioeconomic Status

Indicators of higher socioeconomic status such as higher levels of education or professional occupational categories have been found to be associated with a lower risk of incident hearing loss (or rate of decline) in many (Cruickshanks et al., 2003, 2010a, 2015b; Fischer et al., 2015; Linssen et al., 2014; Mitchell et al., 2011) but not all prospective studies (Kiely et al., 2012). Generational differences in educational attainment explained part of the birth cohort effect on the prevalence of hearing loss discussed above; the impact of birth year was attenuated, although it remained significant (Zhan et al., 2011). This protective pattern is similar to many other disorders of aging, where more highly educated, wealthier people have lower risk of disease, most likely due to a number of factors, but the full reasons are unclear.

Lifestyle Factors

No longitudinal cohort studies have reported significant associations between alcohol consumption and a risk of hearing loss (Brant et al., 1996; Cruickshanks et al., 2015b; Fischer et al., 2015; Gopinath et al., 2010a). One study found that current smokers had a 31 percent increased risk of developing hearing loss during 15 years of follow-up (Cruickshanks et al., 2015b). The risk for former smokers who had stopped 5 or more years earlier was similar to those who had never smoked. Cigarette smoking was not associated with 5- or 10-year risk of developing a hearing loss in this cohort, suggesting that the effects accrue slowly. Consistent with this hypothesis, other longitudinal studies with only 5 years of follow-up have not found significant associations between smoking and risk of hearing loss (Fischer et al., 2015; Gopinath et al., 2010a; Kiely et al., 2012). The Baltimore Longitudinal Study of Aging involving 531 men also found no association between smoking and a risk of incident hearing loss (Brant et al., 1996).

Few dietary factors have been identified as being associated with the risk of hearing loss. In the Blue Mountains Hearing Study, people who

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consumed fish two or more times per week were 20 percent less likely to develop hearing loss in 5 years of follow-up than those who ate fish less than once a week (Gopinath et al., 2010b). The Nurses' Health Study II found lower risk of self-reported hearing loss among women consuming more fish and long-chain omega-3 polyunsaturated fatty acids (Curhan et al., 2014).

Health Conditions

Blood pressure Population-based longitudinal cohort studies have found no association between blood pressure or hypertension and the risk of hearing loss (Cruickshanks et al., 2015b; Fischer et al., 2015). However, higher systolic blood pressure was found to be associated with hearing loss in the generally healthier Baltimore Longitudinal Study of Aging cohort (Brant et al., 1996). Hypertension was also associated with a faster decline in hearing acuity in a study of Australian participants (Kiely et al., 2012).

Obesity and central adiposity Several longitudinal studies have found obesity or waist circumference—a well-known marker of central adiposity as well as of insulin resistance and cardiovascular risk—to be associated with increased risk of hearing loss (Cruickshanks et al., 2015b; Curhan et al., 2013; Fischer et al., 2015; Linssen et al., 2014). The Maastricht Aging Study reported that a large waist circumference in younger adults and obesity in older adults showed some association with faster deterioration in hearing (Linssen et al., 2014). In the Epidemiology of Hearing Loss Study, there was an 8 percent increased risk of hearing loss for every additional 10 centimeters of waist circumference (Cruickshanks et al., 2015b). Body mass index was significantly associated with a higher (2 percent for every kg/m^2) 5-year risk of hearing loss in the Beaver Dam Offspring Study (Fischer et al., 2015). In the Nurses' Health Study II, body mass index and larger waist circumference were associated with a risk of self-reported hearing loss (Curhan et al., 2013).

Diabetes Although there have been numerous cross-sectional studies reporting a higher prevalence of hearing loss among people with diabetes (Agrawal et al., 2009; Cruickshanks et al., 2010b, 2015a; Helzner et al., 2011; Mitchell et al., 2009), there has been little evidence from longitudinal studies. Diabetes was not associated with incidence of hearing loss in several studies (Cruickshanks et al., 2015b; Fischer et al., 2015; Kiely et al., 2013; Mitchell et al., 2009). However, in the Epidemiology of Hearing Loss Study, highly elevated glycosylated hemoglobin levels were associated with a 2-fold increased risk of developing hearing loss during the 15-year follow-up (Cruickshanks et al., 2015b). As with many other risk factors, it is unknown whether the diabetes itself was the cause or only a correlation.

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Atherosclerosis Research in animal models, small clinical studies, and early ecological studies have suggested that cardiovascular disease risk factors and processes may be involved in the pathophysiology of hearing loss with aging (Cruickshanks et al., 2010b). One prospective study reported that the intima-media thickness of the carotid artery—a well-known measure of generalized atherosclerosis—was positively associated with the 5-year incidence of hearing loss (Fischer et al., 2015). The risk of developing hearing loss increased by 28 percent for every 0.2 mm increase in the intima-media thickness, an effect similar to what is seen with 5 years of aging. Plaque, a more advanced stage of atherosclerosis, also was associated with an increased risk of incident hearing loss.

Lipoprotein profiles A longitudinal study of 837 people followed for an average of 3.2 years found no association between hearing and the ratios of triglyceride levels or total cholesterol to high-density lipoprotein (HDL) cholesterol (Simpson et al., 2013). Non-HDL cholesterol was not associated with the incidence of hearing loss in either the Epidemiology of Hearing Loss Study or the Beaver Dam Offspring Study (Cruickshanks et al., 2015b; Fischer et al., 2015).

Chronic inflammation Higher levels of markers of inflammation have been associated with many age-related disorders (Chung et al., 2009; Danesh et al., 2008; Ferrucci et al., 2005; Jenny et al., 2012; Kizer et al., 2011). High concentrations of high sensitive c-reactive protein (hsCRP; a marker for inflammation) were found to be associated with a 2-fold increased risk of hearing loss over a 10-year period among people under the age of 60 years (Nash et al., 2014). The risk also increased with the number of such inflammatory markers that were elevated (hsCRP, interleukin-6, and tumor necrosis factor-α). However, no association was found among people age 60 years or older at baseline. A cross-sectional population-based cohort study has demonstrated associations between certain genetic polymorphisms for tumor necrosis factor-α and tumor necrosis factor receptors and hearing thresholds but no associations between other inflammatory-related polymorphisms and hearing loss (Uchida et al., 2014). Thus, chronic low-grade inflammation appears to play an important role in many degenerative disorders of aging and may be important in aging changes in auditory function, but additional prospective data are needed to evaluate its contribution.

Medications Many medications have potential ototoxic effects; the best known are certain antibiotics and chemotherapy agents (Cruickshanks et al., 2010b). There have been few reports from longitudinal cohort studies with audiometrically assessed hearing of associations between medication

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usage and the risk of hearing loss. It is not clear if this "absence of evidence" represents a publication bias or the lack of studies assessing medication effects. In the Epidemiology of Hearing Loss Study, no associations were found between the use of nonsteroidal anti-inflammatory medications or lipid-lowering medications (or statins, specifically) and the 15-year incidence of hearing loss (Cruickshanks et al., 2015b). In the study of the offspring of the Beaver Dam participants, statin use also was not associated with the 5-year incidence of hearing loss (Fischer et al., 2015). However, two large cohort studies using self-reported hearing loss outcomes have reported an increased risk of hearing loss to be associated with the use of aspirin, nonsteroidal anti-inflammatory drugs, and acetaminophen (Curhan et al., 2010, 2012). Although it is difficult to study the effects of medications while appropriately accounting for the reasons people use them, for prescription bias, and for polypharmacy, studies are needed to understand the impact of medication usage on changes in auditory function.

IMPACT OF HEARING LOSS

The impact of hearing loss on an individual is highly dependent on the severity of the loss and on the individual's lifestyle, communication needs, and specific environment. Two people with the same degree of hearing loss as measured by audiometry may report very different hearing difficulties. For example, the hearing "demands" may be quite different for a person who lives alone, is retired, and has a group of friends who socialize in only quiet settings than for a person who is working in a noisy office with cubicles, lives with several people, and frequently dines in noisy restaurants with a large group of friends. Additionally, since humans vary in their reactions to challenges and their abilities to find ways to adjust to changes in health, an individual's personality, coping style, resiliency, and duration of hearing loss all may influence how that person perceives his or her hearing abilities. In short, there is tremendous heterogeneity in the challenges in everyday life that are attributed to hearing loss because of the complex interactions of individuals and their environments. This highlights the need for a personalized approach to hearing health care.

From a population perspective, the burden of hearing loss may be hard to detect and quantify even in well-designed prospective studies. Studies that have attempted to measure the impact of hearing loss on communication and quality of life have often used questionnaires that measure the overall health-related quality of life, such as the Medical Outcomes Study-Short Form-36 (Ware and Sherbourne, 1992), which was designed for general population surveys. Other studies have relied on instruments that emphasize difficulties with hearing and communication such as the screening versions of the Hearing Handicap Inventory for Adults or the Elderly

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(Newman et al., 1990, 1991; Ventry and Weinstein, 1982; Weinstein and Ventry, 1983). Which outcome methodology is an appropriate metric for measuring impact is open to discussion, and efforts to identify improved "real-world" measures are needed (see Chapters 3 and 6).

Although the committee understands that it is not possible to have perfectly randomized controlled trials to examine the impact of hearing loss, prospective studies (preferably population-based) could be designed and well controlled to examine the associations between newly detected hearing loss and subsequent effects on quality of life and function. Such studies would represent the highest level of evidence possible. Existing studies that use prevalent hearing loss often fail to control for the baseline differences accrued prior to the hearing loss or during the hearing loss. Some studies include "outcome" data collected prior to the measurement of hearing, which obscures the prospective trajectories. The following section briefly discusses some of the limited data available from large studies to highlight the gaps in what is known about the effect of hearing loss on the individual's communication abilities; quality of life; social, occupational, and physical functioning; and health.

Quality of Life and Communication

In the population-based Epidemiology of Hearing Loss Study, participants with hearing loss at the baseline visit had lower quality of life than those with normal hearing, as measured by the 36 item Short Form Health Survey (Dalton et al., 2003). Greater severity of hearing loss also was associated with more communication difficulties, as measured by the Hearing Handicap Inventory for the Elderly, and more limitations in activities of daily living and instrumental activities of daily living (Dalton et al., 2003). Health-related quality of life also was lower in a study of a random sample of people aged 65 and older who had AARP Medicare supplement plans (Hawkins et al., 2012). However, these cross-sectional studies are inadequate for determining the impact of hearing loss as they include both newly detected and longstanding hearing loss and could not adequately control for differences in quality of life that may have preceded the onset of hearing loss.

A longitudinal analysis of data from the Blue Mountains Hearing Study found no difference in the rate of decline in quality of life over a 10-year period between participants with hearing loss and those with normal hearing at baseline, nor was baseline hearing ability associated with the rate of decline in quality of life (Gopinath et al., 2012). Participants who developed a hearing loss during the 10-year follow-up had greater declines in the physical composite score of the Short Form Health Survey than people who retained normal hearing, but there were no differences in the mental composite score (Gopinath et al., 2012).

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Cognitive and Mental Health and Depression

A large longitudinal study in Australia found no association between sensory impairments (hearing or vision) and the levels or rates of change in depression during 16 years of follow-up, in multivariable models adjusting for age, sex, and comorbidities (Kiely et al., 2013). The English Longitudinal Study of Aging found no association between self-rated hearing and the onset or persistence of depression (Chou, 2008).

Because hearing loss may burden those people who attempt to communicate with someone who has hearing loss, some studies have measured the impact on the mental health of the spouses of individuals with hearing loss. In the Alameda County Study, baseline self-reported hearing difficulties with communication were associated with the partner's poorer mental health and well-being 5 years later (Wallhagen et al., 2004). The study controlled for age, gender, financial problems, number of chronic conditions, and the hearing loss of the partner. In contrast, the cross-sectional analyses in the large Nord-Trøndelag Health Study found no association between hearing loss measured by audiometry and spousal mental health in 13,678 couples (Ask et al., 2010). It is not clear if the difference in results was due to cultural differences between the United States and Norway, the longitudinal versus cross-sectional designs, or the differences in impact between measured hearing loss and complaints of hearing problems. It is possible that the burden to the spouse is limited to families where the person who has hearing loss is struggling with communication or is dissatisfied with his or her hearing function.

A link between hearing and cognitive function and dementia has long been recognized, as signals transmitted by the ear are processed and recognized by the brain as sounds and words (Humes et al., 2012). Early studies and reviews have reported an association between hearing loss and dementias (Albers et al., 2015; Uhlmann et al., 1989). The association may be bidirectional, as the Australian Dynamic Analyses to Optimise Ageing project found that cognitive impairment was an independent predictor of the rate of decline in auditory function (Kiely et al., 2012). The Maastricht Aging Study analyzed the relationship that hearing and change in hearing, along with vision and change in vision, had with changes in cognitive function as measured with a battery of tests (Valentijn et al., 2005). In this study, declines in hearing were associated with 6-year declines in the Visual Verbal Learning Test (total score and recall), but not with any of the six other tests included in the battery. No effect of hearing aids was seen, but only seven people were fitted, so the power to detect an association was low. In one longitudinal study of people with audiometrically measured hearing loss, there was no difference between hearing aid users and nonusers in cognitive function or mental health after 11 years of follow-up (Dawes et al., 2015).

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Several prospective studies of hearing and incident dementia or Alzheimer's disease have been conducted. In a sample of the Baltimore Longitudinal Study of Aging, which excluded people with cognitive impairment at baseline, the risk of dementia was found to be 24 percent higher for every 10 dB of hearing loss after adjusting for age, sex, race, education, diabetes, smoking, and hypertension, and baseline scores on one test of cognitive function (Lin et al., 2011a). Hearing aid use was not found to have an effect on the risk of dementia in this study (Lin et al., 2011a). A smaller association was seen in the Health ABC cohort: The risk of having cognitive impairment increased 7 percent for every 10 dB of hearing loss at baseline (Lin et al., 2013). Baseline hearing loss was also associated with a slightly greater annualized decline in scores on the Modified Mini-Mental State Examination and Digit Symbol Substitution test, although the analyses did not control for baseline scores on those tests, which were worse among those with hearing loss than among those without hearing loss. Hearing aid use was not associated with slower rates of decline or a lower incidence of cognitive impairment in that study (Lin et al., 2013).

A subset of the participants in the Baltimore Longitudinal Study of Aging was followed with magnetic resonance imaging. With a mean follow-up time of 6 years, the rates of whole brain atrophy and atrophy in several regions of the right temporal lobe were greater among people with baseline hearing loss than among normal-hearing participants (Lin et al., 2014). Most participants had only a mild hearing loss, and baseline volumes were similar between those with and without hearing loss. The limited studies published to date provide intriguing evidence suggesting that sensorineural hearing loss and cognitive function changes may co-occur in aging. Mechanisms for these associations are not known although shared pathways such as vascular and inflammatory damage or the effects of hearing loss on social isolation and cognitive load have been suggested (Lin et al., 2011a, 2013, 2014; Panza et al., 2015). Future studies are needed to determine the mechanisms of these possible associations.

Function

Studies using self-reported hearing loss are problematic because of the complex relationship between the severity of loss measured by audiometry and the daily impact on function. It is difficult to separate the effects of the actual hearing acuity from other factors that influence self-perceived problems. In one study that controlled for hearing impairment severity, older adults reported less handicap than younger adults, which may reflect differences in demands on hearing, generational differences in coping, or adaptation to hearing loss over time (Wiley et al., 2000). Future studies based on self-report should include measures of the psychosocial factors

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that may influence reporting and audiometric testing in order to understand the influences on perceived handicap. Improved measures of hearing are needed—and, in particular, measures that better assess the real-world hearing environment.

The evidence to date on the relationship between hearing loss and social isolation is based on small cross-sectional studies. While it is highly likely that people with severe age-related hearing loss may feel isolated and that some people may respond to changes in hearing by altering their lifestyles, prospective studies are needed to provide stronger supporting evidence. Population-based longitudinal studies of hearing and social isolation are needed to measure the amount of time that adults spend engaging with others or spend in difficult listening conditions in order to determine the effects of different severities of hearing loss and value of treatment.

Other approaches to measuring the importance of hearing loss have evaluated the impact on work. One large study reported finding no association, in a multivariable-adjusted model, between difficulty hearing in noise and the use of sick leave (Nachtegaal et al., 2012). In the Epidemiology of Hearing Loss Study, there was no association between hearing loss at baseline and the 15-year risk of retiring after adjusting for age, sex, self-reported health, and chronic diseases (Fischer et al., 2014).

Cross-sectional studies have examined the association of hearing loss with falls, declines in physical functioning, and hospitalization, but population-based longitudinal studies are lacking. In cross-sectional data from the NHANES study, hearing loss was associated with an increased risk of self-reported history of falls in the previous 12 months (Lin and Ferrucci, 2012). In a subset of the Health ABC study, hearing loss at the 5-year follow-up (2002–2003) was associated with frailty that developed between the baseline examination (1997–1998) and the 10-year follow-up (Kamil et al., 2016). In a study examining hospitalization of the participants in the Health ABC study, participants with hearing loss at the 5-year midpoint examination were likely to have been hospitalized earlier (time to first hospitalization) than those with normal hearing and to have had a higher annual rate of hospitalization over the course of the study (median follow-up was 12 years) (Genther et al., 2015b).

One longitudinal study evaluated the effect of hearing impairment on independence and the use of support services. In the Blue Mountains Hearing Study, 1,457 participants at the baseline hearing test visit reported no use of community support services. Baseline hearing loss was not associated with the 5-year incidence of using community support services, with receiving help from a nonspouse family member or friend, or with an inability to go out alone. However, people with moderate to severe hearing loss had a 2.7-fold increased risk of needing help from family and friends (Schneider et al., 2010). These results provide some evidence that people with severe

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levels of hearing loss may have a greater need for services than people with normal hearing.

Two studies using self-reported hearing loss analyzed the impact of hearing loss on access to general health care. The Wisconsin Longitudinal Study found that the odds of reporting difficulties and delays in accessing health care in the previous year were 1.85 times higher in the group reporting hearing loss than in those not reporting hearing loss (Pandhi et al., 2011). In the Medical Expenditure Panel Survey, people with hearing loss were found to have better access to health care than those with other disabilities (Horner-Johnson et al., 2014). Several studies (Contrera et al., 2015; Fisher et al., 2014; Genther et al., 2015a; Gopinath et al., 2013; Wahl et al., 2013) have reported longitudinal associations between hearing and mortality risk; however, most showed no association after controlling for confounding factors (Contrera et al., 2015; Genther et al., 2015a; Wahl et al., 2013). The study authors did not speculate on the reasons for these disparities.

Impact of Early Life Onset of Hearing Loss

One subset of adults with hearing loss that deserves particular attention is those adults who had congenital or childhood-onset hearing loss. Programs exist to identify infants and young children with hearing loss who need treatment. Although hearing health care and hearing aids may be provided to these children through private insurance or state and federal programs, coverage changes as these children transition to adulthood (see Chapter 5). Because hearing aids are frequently used by children with hearing loss, long-term hearing health care is needed to help them continue to thrive as adults. Vocational rehabilitation programs provide assistance for some but may be inadequate to provide support for all who need it (see Chapter 5).

The National Longitudinal Transition Study-2 evaluated post-secondary school outcomes for young adults with disabilities (Newman et al., 2011). No information was collected specific to hearing health care needs or current treatments, but a broad array of outcomes was measured. Most analyses focused on comparing the group with disabilities to the general population and then comparing within the group with disabilities by the type of disability. As seen in Table 2-4, young adults with disabilities were as likely to enroll in post-secondary schools as the general young adult population but were slightly less likely to have graduated within 8 years. Employment rates and duration were similar, as were the number of hours worked, but the average hourly wage was slightly lower, possibly reflecting a higher proportion of part-time workers (Newman et al., 2011). A high percentage were engaged in work, education, or training during this early adult period.

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TABLE 2-4
National Longitudinal Transition Study-2:
Post-High School Outcomes of Young Adults with Disabilities
Up to 8 Years After High School[a]

	General Population	All Disabilities	Hearing Impairment	Deaf-Blindness
	Mean (SE)	Mean (SE)	Mean (SE)	Mean (SE)
Ever enrolled in any post-secondary school	67.4 (0.60)	60.1 (2.63)	74.7 (4.24)	56.8 (7.09)
Graduated any post-secondary school	52.4 (1.02)	40.7 (3.71)	52.9 (6.16)	27.7 (9.14)
Employed at time of interview	66.1 (0.60)	60.2 (2.65)	57.2 (4.89)	30.1 (6.69)
Average duration of employment (months)	21.8 (0.28)	23.5 (1.42)	22.4 (2.59)	19.1 (3.74)
Average hours worked per week	37.1 (0.18)	35.8 (0.88)	31.3 (1.47)	24.7 (2.77)
Average hourly wage	$11.40 ($0.17)	$10.40 ($0.32)	$10.50 ($0.58)	$9.20 ($1.64)
Paid vacation or sick leave	56.6 (0.72)	54.6 (3.31)	49.6 (6.46)	43.8 (10.67)
Health insurance	55.5 (0.79)	47.7 (3.32)	40.4 (6.31)	29.2 (9.78)
Retirement benefits	38.7 (0.78)	39.0 (3.30)	41.5 (6.43)	31.5 (9.99)
Engagement in education, employment, or training since high school		94	95.4 (2.04)	85.0 (5.11)
Lived independently	59.0 (1.63)	44.7 (2.68)	50.5 (5.01)	26.4 (6.56)
Lives semi-independently	1.8 (0.18)	1.7 (0.70)	6.0 (2.38)	8.2 (4.09)
Have had or fathered a child	28.4 (0.57)	29.4 (2.63)	20.6 (4.48)	7.4 (3.95)
Married	19.3 (0.53)	13.4 (1.97)	11.4 (3.50)	3.8 (2.86)
Savings account	63.3 (0.92)	59.0 (2.86)	64.7 (5.32)	64.3 (7.22)
Checking account	73.9 (0.80)	58.7 (2.85)	73.5 (4.89)	46.9 (7.47)
Credit card	61.1 (0.92)	41.4 (2.85)	52.9 (5.59)	29.2 (6.81)
Food stamps			15.1 (5.56)	38.8 (13.13)

continued

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TABLE 2-4
Continued

	General Population	All Disabilities	Hearing Impairment	Deaf-Blindness
	Mean (SE)	Mean (SE)	Mean (SE)	Mean (SE)
Friends outside of school or work weekly		78	76.3 (4.79)	62.3 (7.31)
Communicating by computer daily		32.0 (2.69)	51.4 (5.50)	41.2 (7.37)
Community participation		51.7 (2.73)	59.3 (4.86)	66.9 (6.78)
Driver's license/learner's permit		77.7 (2.40)	83.5 (4.07)	26.9 (6.64)
Registered to vote		71.0 (2.64)	71.0 (5.04)	56.9 (7.42)

NOTE: SE = standard error.

[a]N = 4,810 in Wave 5 that were out of high school when interviewed in 2009; 13- to 16-year-old students were selected in Wave 1, and their average age was 14.4 years in 2000; 40.2 percent of Wave 5 participants were 24 years or older; 65.6 (2.57) percent white, 20.2 (2.17) percent African American, and 14.2 (1.89) percent identified as Hispanic in Wave 5 interviews.

As young adults, they were becoming independent, forming relationships, moving out on their own, driving, and voting at high rates. The set of young adults with hearing loss appeared to be quite similar to the entire study cohort and to the general population on many measures. The majority of both groups saw friends weekly, engaged in community activities, and were registered to vote. In summary, this study showed that children with hearing loss transition to adulthood similarly to young adults without hearing loss in many ways. However, there are very limited data about their hearing health care needs or how its affordability may limit their access and opportunities.

Economic Burden of Hearing Loss

There are no population-based longitudinal data that measure the economic impact of hearing loss. Modeling the economic cost to society of hearing loss has been approached in several ways with varying assumptions. Mohr and colleagues (2000) focused on severe to profound hearing loss and estimated the costs over a lifetime to an individual to be $297,000 (averaged across age at onset), with most of the losses (67 percent) due to reduced work productivity. The study estimated that persons who experience severe to profound hearing loss before retirement are expected

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to earn only 50 to 70 percent of what their peers earn who do not have hearing loss. Ruben (2000) used several sources of labor and disability data to look at the economic effects of communications disorders, with some data focused on hearing loss, and found negative impacts of hearing loss on individual income and significant underemployment of individuals with hearing loss. Stucky and colleagues (2010) used a simulation model based on national estimates of the prevalence of hearing loss in individuals age 65 years and older across the range of hearing loss, as well as several sources of economic data, and estimated that the total costs of first-year treatment of hearing loss in 2002 were approximately $1,292 per person, or $8.2 billion nationally, and projected that by 2030 these costs would increase to approximately $51.4 billion nationally. They also estimated the 2002 lost productivity costs attributable to hearing loss in this age group to be approximately $1.4 billion nationally. Simpson and colleagues (2016) examined health care cost data from privately insured adults age 55 to 64 years and found higher health care costs for a number of chronic health conditions for individuals with a diagnostic code for hearing loss as compared with a matched group without that diagnostic code. Emmett and Francis (2015) examined data from the 1999–2002 cycles of NHANES that included audiometric evaluation and a questionnaire on income. Their study found hearing loss to be associated with a 1.58 times higher odds of low income and 1.98 times higher odds of being unemployed or underemployed in adults age 20 to 69 years. The authors noted that these are cross-sectional data that cannot be used to establish causation and pointed to the need for longitudinal studies.

PREVENTION OF HEARING LOSS

Only one small, randomized controlled trial has been conducted to evaluate interventions (other than hearing technologies) for age-related hearing loss (Durga et al., 2007). This trial of folic acid supplementation in the Netherlands demonstrated that in a group of 50- to 70-year-olds, those participants who received 800 µg/day of folic acid experienced smaller declines in hearing at low frequencies (pure tone average 0.5–2 kHz, both ears) during a 3-year follow-up period than did participants who received a placebo (1.0 dB versus 1.7 dB HL, respectively) (Durga et al., 2007). Although this study is not generalizable to the United States where foods are fortified with folate and thus additional supplementation may provide little additional benefit, it suggests that certain nutritional interventions may delay or slow the deterioration of hearing with aging.

Hearing loss prevention efforts targeting all ages largely focus on reducing exposure to intense noise or to sustained high levels of noise by reducing noise volume or increasing the distance from the noise source; by using ear

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muffs, ear plugs, or other hearing protective devices; and by using other noise-reducing strategies (NHS, 2015; NIDCD, 2008). Additionally, the avoidance of ototoxic medications, some specific chemical exposures, and other environmental exposures of concern can be considered. Whether healthy lifestyles have any benefits in preserving auditory function remains to be seen.

The risk factors and exposures reviewed above preceded the development of hearing loss, but these factors may not cause hearing loss. Evidence that there are modifiable risk factors for hearing loss is limited by the paucity of prospective, population-based data. There is suggestive evidence that socioeconomic status and obesity are associated with a risk of hearing loss. The reported prospective associations summarized above, along with the pronounced decline in hearing loss across generations, suggest there may be ways to reduce the risk or slow the progression of hearing loss with aging. Additional prospective studies are needed to replicate these findings and strengthen the evidence. Randomized controlled trials of interventions to determine the impact of reductions in obesity or waist circumference on hearing may be warranted. Including measures of hearing in trials aimed at reducing hyperglycemia, atherosclerosis, and chronic inflammation for other health reasons may help to elucidate the roles of these conditions in declining hearing acuity among adults.

For age-related hearing loss, there is insufficient evidence to support interventions for primary prevention. However, ongoing research is seeking to identify drugs that act on oxidative stress pathways, inflammation, and hormonal regulation that may have beneficial effects on hearing. Although some surgical and medical treatments are available for some forms of middle-ear disease and sudden-onset hearing loss, there are no medical or surgical treatments to cure age-related hearing loss. At this time, tertiary prevention methods for helping individuals manage their hearing loss and reduce the impact of hearing loss on their quality of life are available (see Chapters 3, 4, and 6).

NEXT STEPS AND RECOMMENDATION

The paucity of data in many areas of hearing health care will be highlighted throughout this report. Given the number of people with hearing loss and the opportunities to improve their function and quality of life, more can be done to strengthen the evidence base. Of the numerous factors that have contributed to hearing health care's lack of a strong research base, the committee describes just a few:

- *Lack of health insurance coverage for hearing health care*—Evidence of improved patient outcomes is a general requisite for

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health insurers, policy makers, and others making decisions about payment for health care interventions. However, because few health insurance plans or programs provide reimbursement for hearing health care (see Chapter 5), there has not been a demand for this research.

- *Nature of the devices and interventions*—Hearing aids are fairly low-risk medical devices, and the Food and Drug Administration's regulatory processes for approval of hearing aids do not require clinical trial data (unless significant changes are sought to previously approved models). Therefore, randomized controlled clinical trials evaluating the efficacy of hearing aids to improve health outcomes have been limited (see Chapter 4).
- *Research training changes and public health emphasis*—In general, hearing loss has not been viewed as a public health concern, and audiologists and others are often not trained in public health research methodologies. Additionally, health services researchers, health economists, and epidemiologists receive little training about sensory disorders. Strengthening the research training programs and encouraging multidisciplinary teams to address the many research needs will improve the quality of the evidence in hearing health care.

The research needed to advance the effectiveness of hearing health care services and technologies, particularly comparative effectiveness studies, is described in Chapters 3 and 4. Chapter 5 discusses cost effectiveness research and details the urgency for demonstration projects and other studies to be conducted to fill the gaps in research on interventions, outcomes, and impacts. In addition, research efforts also need to focus further on improving public awareness, reducing stigma, and engaging community organizations and businesses in ensuring that hearing- and communication-friendly environments are available (see Chapter 6).

Well-designed longitudinal population-based studies that adequately control for confounders are needed to definitively determine the impact of hearing loss on adult individuals, families, and society. Additionally, the gaps in population-based surveillance efforts pertinent to hearing loss include insufficient knowledge about variations in the incidence of hearing loss among and across racial and ethnic populations and across geographic areas and insufficient knowledge about the impact of hearing loss on social function, employment, quality of life, independence, and the need for social services. This absence of evidence is striking given that the Global Burden of Disease project has ranked hearing loss as the fifth leading cause of years lived with disability—higher than other chronic diseases of aging such as diabetes, dementia, and chronic obstructive pulmonary disease

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(Global Burden of Disease Study 2013 Collaborators, 2015). Learning more about the economic burden of hearing loss should be a priority.

Strengthening research in hearing health care will need to involve a more robust set of metrics for assessing and defining hearing loss and communication abilities, with a focus on measures that are applicable to communicating in the complex environments of daily life. This goal has also been identified in the NIDCD Strategic Plan (NIDCD, 2015). As noted above, further collaborative and interdisciplinary efforts in hearing loss research are needed. Additionally, training in research methodologies needs to be strengthened for audiologists and other hearing health care professionals. Accreditation organizations involved with monitoring education programs could incorporate requirements for research training into standards for academic programs.

Data sources and research opportunities also need to be expanded. The current focus of the hearing-related programs at the CDC is on childhood hearing loss and newborn screening (CDC, 2015b). In addition to these vital programs, it is important to expand CDC's role and research in adult hearing loss to ensure that this serious public health concern benefits from the population-based approaches and public health opportunities that are available through CDC and through state public health departments.

Goal 1: ***Improve Population-Based Information on Hearing Loss and Hearing Health Care***

Recommendation 1: The National Institutes of Health, the Centers for Disease Control and Prevention, the Patient-Centered Outcomes Research Institute, the Department of Defense, the Department of Veterans Affairs, state public health agencies, and other relevant government agencies, as well as nonprofit organizations, hearing health care professional associations, academic institutions, and researchers, should strengthen efforts to collect, analyze, and disseminate prospective population-based data on hearing loss in adults and the effects of hearing loss and its treatment on patient outcomes.

Specifically,

- Support and conduct studies to develop, evaluate, strengthen, and align metrics for hearing loss and communication abilities;
- Support and conduct studies, including longitudinal studies, in diverse populations to better understand
  - the risk and natural history of hearing loss,
  - risk factors and comorbidities of hearing loss,
  - hearing health care needs, and

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  - the impact of hearing loss and its treatment on health, function, economic productivity, and quality of life; and
- Develop and strengthen research training programs to address hearing loss as a public health concern with attention to cross-disciplinary training on sensory disorders, epidemiological methods, advanced biostatistics, and health services and health economics research methods.

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3

Hearing Health Care Services: Improving Access and Quality[1]

Although it is widely recognized that hearing aids and hearing assistive technologies can be key components to improving hearing and communication abilities, the critical role that hearing-related services can play in hearing health care is often overlooked. These services include the systematic and comprehensive assessment of an individual's hearing and communication difficulties, diagnosis of any underlying medical conditions, evaluation of the individual's hearing loss and treatment needs, auditory rehabilitation, and counseling and other services that help the individual to maximize his or her hearing and communication abilities. These services are provided by a range of hearing health care professionals.

Hearing health care is facing challenges similar to those being addressed in many other facets of health care in the United States. Hearing health care is often expensive and underutilized by many of the people who need it. Entry into the hearing health care system can occur by multiple pathways (audiologists, hearing instrument specialists, otolaryngologists, primary care providers, self service, and others) (see Box 3-1). Consumers can be left with no clear guidance on what will best fit their financial, health, social, and hearing needs (NIDCD, 2015). When left to traverse this complex system, even those patients who are fortunate enough to have the time,

[1]For accuracy when referring to findings and conclusions in published studies on hearing health care services, only the specific professions included in a given study are referred to in the study-related text of this report. However, following the discussion of such studies, the committee's commentary on the larger implications and applications of the study findings are broadened to include all relevant hearing health care professions.

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Box 3-1 PROFESSIONS INVOLVED IN HEARING HEALTH CARE

Audiologists

Audiologists are nonphysician health care professionals trained in the assessment, treatment, and rehabilitation of hearing, balance, and related disorders of the ear and hearing. Audiologists offer services to identify individuals with hearing difficulties; determine the cause of hearing loss; assess hearing needs; treat needs using hearing aids, hearing assistive technologies, and/or auditory habilitation and counseling services; and educate individuals and family members about hearing loss prevention and accommodation. Currently, audiology professional organizations, academic accreditation bodies, and the majority of state licensure laws require a doctor of audiology graduate degree, which typically requires 4 years to complete, in addition to a bachelor's degree. All states require a graduate degree, a qualifying examination, and supervised experience in a clinical fellowship as well as continuing education. State licensing requirements vary. There are approximately 12,250 practicing audiologists in the United States, and they are primarily located in urban areas (BLS, 2014a).

Hearing Instrument Specialists

Also referred to as *hearing aid specialists*, hearing instrument specialists are qualified to identify individuals with hearing loss, assess their need for hearing aids, dispense hearing aids, and educate individuals and their family members about hearing loss. In most states, state laws require that hearing instrument specialists have, at minimum, a high school diploma, a 2-year apprenticeship, and a license to practice. The licensure requirement varies between states, but most require completing an annual application form and paying a fee. Some states require certification which is offered through the National Board for Certification in Hearing Instrument Sciences. There are approximately 5,570 hearing instrument specialists in the United States, and most are located in large cities (BLS, 2014b).

Otolaryngologists

Otolaryngologists are physicians trained in the medical and surgical management and treatment of patients with diseases and disorders of the ear, nose, throat, and related structures of the head and neck. After an otolaryngology residency, some

finances, knowledge, skills, and patience necessary to navigate the process may find the process and outcomes to be frustrating and unsatisfactory (Pacala and Yueh, 2012). Furthermore, there have been few randomized controlled trials that have examined the degree of relative effectiveness of and the quality of care provided by these various services; much remains unknown. For individuals in need of hearing health care but unable to overcome the time, financial, and information barriers, there is a lack of information about the options available regarding services and technolo-

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otolaryngologists obtain further fellowship training in otology or neurotology to focus exclusively on the medical and surgical conditions of the hearing and balance system. These practitioners are eligible for subspecialty board certification in neurotology. Otolaryngologists are trained to evaluate conditions of the ear that could affect hearing or that require further medical or surgical evaluation. In 2009 just over 10,000 otolaryngologists were estimated to be working in the United States, but there has been a decline in the number of residents seeking board certification since 2006. There have also been changes in their geographic distribution in the United States during this time; from 2004 to 2009, 20.9 percent of counties lost otolaryngologists (Neuwahl et al., 2012).

Primary Care Providers

For most people, primary care providers (such as family practice physicians, geriatricians, nurse practitioners, and physician assistants) are the first point of contact with the health care system (Flocke et al., 1998; Green et al., 2001). Many primary care providers practice within a comprehensive patient-centered medical home (Rosenthal, 2008). They establish long-term relationships with patients and provide care across the spectrum of ages, diseases, and social circumstances (DeVoe et al., 2011; Pandhi and Saultz, 2006; Phillips et al., 2014; Saultz, 2003; Saultz and Albedaiwi, 2004; Saultz and Lochner, 2005; Worrall and Knight, 2006), which can put them in a position to help identify their patient's hearing loss as a possible cause of or confounding factor for social withdrawal, depression, or reduced interactions with family members (Bagai et al., 2006). Primary care providers can be the first to assess and diagnose patients with hearing loss and, in some cases, may be able to treat the patient without a referral to a hearing health care professional. For example, blockage of the ear canal with cerumen can be easily remediated. It is also within a primary care provider's scope of practice to treat outer or middle ear infections as well as to identify and discontinue ototoxic medications, such as certain antibiotics or high-dose nonsteroidal anti-inflammatories. They are also trained to conduct simple hearing screening tests and primary otologic examinations. If the examination identifies hearing loss but does not reveal an obvious cause that is treatable in a primary care setting, referrals are provided to the appropriate specialist (Yueh et al., 2003).

gies and little support to help the consumer understand and compare the potential benefit of various services and technologies.

Access to care has been defined as "the timely use of personal health services to achieve the best possible health outcomes" (IOM, 1993, p. 33), and according to Healthy People 2020, it encompasses the components of coverage, services, timeliness, and workforce (Healthy People, 2016). *Quality of care* is the "degree to which health services for individuals and populations increase the likelihood of desired health outcomes and are

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consistent with current professional knowledge" (IOM, 1990, p. 4). *Equity* is achieved by removing any systematic differences in the use and outcomes among groups regardless of whether these differences result from financial or other barriers to care (IOM, 1993). This chapter will delve into the practice and delivery of hearing health care and the opportunities to improve access, quality, and equity throughout the system.

SERVICES-BASED INTERVENTIONS FOR HEARING LOSS

Understanding the range of hearing health care services can be challenging. Hearing problems sometimes develop rapidly along with other symptoms such as ear pain, dizziness, or tinnitus, which can herald the onset of infection or disease. Sometimes hearing problems develop so slowly that they are not recognized until a family member or friend expresses concern about difficulties carrying on a conversation with someone due to that person's apparent poor listening or inattention. This is often the case in age-related hearing loss. Hearing health care ranges from the identification and management of diseases or conditions that may cause hearing loss, which sometimes require advanced medical or surgical care, to rehabilitation and the use of hearing aids and hearing assistive technologies to minimize the psychosocial and quality-of-life consequences of permanent hearing loss. As a result, the consumers of hearing health care services may require services from physician or nonphysician professionals, depending on the cause of the hearing problem, the ability of modern medicine to treat any underlying condition (if present) and restore hearing, and the person's need for help coping with difficulties experienced in day-to-day listening activities and communication challenges. Individuals with lower levels of health literacy may not understand the different types of, causes of, and service providers for hearing loss, which adds to the confusion these individuals may face when seeking care for hearing problems (Reese and Hnath-Chisolm, 2005). Furthermore, personal preferences, lifestyle, and communication needs, among other things, may drive different individuals with the same type of hearing loss to opt to use different services or different modes of service delivery (e.g., in-person, online, telehealth) to meet their needs.

Understanding the range of hearing health care is also important for identifying key indicators for the quality of care. Hearing loss can be understood in the context of disease, and quality can be defined as accurate diagnosis and appropriate and timely medical treatment within the context of the *International Classification of Diseases*. Hearing loss can also be understood within the context of communicative and psychosocial functioning, and in that case quality can be defined based on the *International Classification of Functioning, Disability and Health* (ICF). Therefore, defining quality depends on the dimension affected by the hearing impair-

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ment. Hearing health care refers to services that can be focused on treating disease, function, or both. If the problem is disease focused, quality can be measured in terms of a timely and successful medical or surgical intervention or reduced morbidity associated with the disease. When the problem is function focused, affecting everyday auditory and communicative activities, social participation, and quality of life, the quality of care can be judged by improvement in hearing and communication abilities and in overall function and quality of life; objective measures are difficult to obtain so an individual's satisfaction remains the primary metric. The quality of audiological management might be defined in terms of the degree of restoration of activities and participation (relative to optimum potential). When the problem is multifactorial, a combined approach is indicated.

Under optimal conditions, hearing health care is a coordinated system, capable of addressing hearing loss from both a medical/disease focus and a functional/rehabilitative focus. Thus, the key to offering efficient and effective hearing health care services is assessing hearing-related problems from both a disease and function perspective and accessing the right services and technologies for the specific needs of the individual, at the lowest cost.

Hearing Health Care Utilization

Most data available on the utilization of hearing health care are from surveys asking people if they have had a recent hearing test or about their use or nonuse of hearing aids. In the 2005–2006 and 2009–2010 National Health and Nutrition Examination Survey datasets, only 39.5 percent of adults ages 70 years and older had had a hearing test in the previous 4 years (Nieman et al., 2016). Overall rates of recent hearing testing were similar for white Caucasians, African Americans, and Mexican Americans (39.1 percent, 43.3 percent, and 41.5 percent, respectively). Within the same study population of adults 70 years of age or older, a multivariable model controlling for age, degree of hearing loss, marital status, and self-reported health conditions found that African Americans, people who were widowed, and those with a college education were more likely to have had hearing tests than were white Caucasians, people who were married, and those with a high school education, respectively. There was no difference in the extent of recent hearing testing between Mexican Americans and white Caucasians. These national data do not address disparities for other minority groups and may not reflect regional or local variations in testing.

In the population-based Epidemiology of Hearing Loss Study cohort, whose participants had an average age of approximately 66 years, 36 percent had never had their hearing tested before the baseline examination in 1993–1995 (Cruickshanks et al., 1998). More recently, in the study which

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followed up on the adult children (with and without hearing loss) of the participants in that study, 78 percent of those adult children had not talked with their doctors about a hearing problem in the past 5 years, and only approximately 34 percent of the adult children ages 21 to 69 years and approximately 55 percent of the adult children aged 70 years and older had had their hearing tested in the previous 5 years (Nash et al., 2013). Among those who had not had hearing testing in the previous 5 years, 9 percent had a mild to severe hearing loss according to the audiometric examination, which was part of the study. Because audiometric testing is not routinely performed in the United States, many adults with hearing loss remain unaware of a decline in their auditory function. With few published studies addressing hearing health care in the general U.S. population, little is known about the factors or types of symptoms or complaints that make individuals more likely to seek hearing health care.

It is well recognized that the prevalence of hearing aid use is quite low in the United States compared with the prevalence of hearing loss. Data on the extent of hearing aid use are discussed in Chapter 4.

Screening and Case Finding

In 2011 the U.S. Preventive Services Task Force (USPSTF) examined the issue of screening for hearing loss as a population-wide measure during primary care visits for asymptomatic adults aged 50 years and older but did not recommend screening due to insufficient evidence to adequately weigh the balance of potential benefits and harms of screening for this asymptomatic population (I Statement[2]) (Chou et al., 2011; USPSTF, 2014). The USPSTF noted that potential harms from screening could include anxiety, labeling, stigma, or other psychosocial effects but that no studies were available at the time of their analysis to evaluate these outcomes. The USPSTF added, "Because screening and confirmatory testing for hearing impairment are noninvasive and serious harms of treatment are rare, there are probably little to no adverse effects of screening for hearing loss" (USPSTF, 2014). The committee for the present report finds that lack of a USPSTF recommendation for population-wide screening for hearing loss in asymptomatic adults (such as has been recommended for colorectal screening) should not diminish the importance of discussing hearing health on an individual basis in primary care visits when patients present with complaints or the provider has reason to be concerned.

[2] An "I Statement" from the USPSTF means that "the USPSTF concludes that the current evidence is insufficient to assess the balance of benefits and harms of the service. Evidence is lacking, of poor quality, or conflicting, and the balance of benefits and harms cannot be determined" (USPSTF, 2013).

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Hearing difficulties can negatively affect communication in any setting, and effective communication is particularly important in the health care setting both for patient safety (Middleton et al., 2010) and to enable the person-centered approach toward which the U.S. health care system is moving. For these reasons, it is important to consider changes in hearing ability during patient wellness and medical visits for those patients who express concern about their hearing and are seeking help (see section on primary care providers later in this chapter).

Because hearing tests are usually not a routine part of primary care visits, the onus often remains on the individual or family to recognize the symptoms and seek appropriate hearing health care. There are ongoing efforts to improve hearing health literacy, including the development of tools to help individuals determine when their hearing problems might stem from a medical condition and whether the problems can be managed by audiologists or other nonphysician professionals. Development is ongoing, but initial results are encouraging (Zapala et al., 2015).

Evaluation and Diagnosis

Individuals presenting for a hearing evaluation may be seeking audiological services for several reasons, including self-recognized concerns about the ear and hearing; a referral following signs of poor hearing found during a medical evaluation; the request of family members or friends who suspect hearing loss; or as part of routine health care. The evaluation may vary somewhat among individuals based on such factors as risk for ear disease. Regardless, the objective of the evaluation is always to identify treatable conditions and to assess the impact of any hearing loss on overall function.

Patient History and Otoscopic Exam

The first step is to obtain a general medical and hearing history in order to gather information about the duration and severity of hearing loss, hearing-related medical history (e.g., previous ear infections, symptoms of ear pain or drainage, family history of hearing loss, prescription and over-the-counter medication history, etc.), and previous use of hearing loss interventions. Further interview questions and standardized questionnaires may be used to assess the impact of hearing loss on the individual's day-to-day life.

Second, an otoscopic examination is performed to evaluate the pinna (outer ear), external auditory canal, and tympanic membrane for any conditions that could be contributing to hearing loss or that may require further evaluation and treatment (e.g., cerumen impaction, an abnormality of the tympanic membrane, etc.). Based on the findings during the history and

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exam, it may be appropriate to refer the patient to a physician for additional evaluation.

Diagnostic Testing

Pure tone audiometry Pure tone audiometry measures the lowest intensity level at which an individual can detect calibrated pure tones at specific frequencies between 250 and 8,000 hertz (Hz). The level at which a person is estimated to detect a calibrated pure tone 50 percent of the time is defined as a "threshold." Intensity levels are calibrated in decibels (dB) relative to average normal hearing (dB hearing level or dB HL) and can range from –10 to 120 dB HL. Typically, pure-tone thresholds between –10 and 20 dB HL are considered within normal limits.

Pure tones can be delivered through headphones to the right and left ears individually so that the sound travels through each ear canal and middle ear to the cochlea within the inner ear (termed "air conduction" hearing). Alternatively, pure tones can also be delivered to the skull using a bone oscillator so that the sound passes through the skull and directly stimulates the cochlea, bypassing the ear canal and middle ear ("bone conduction" hearing). By looking at the patterns of air conduction and bone conduction thresholds, the practitioner can make some conclusions about the nature of the hearing loss. When hearing loss is the result of damage to or disease of the ear canal, eardrum, or middle ear, air conduction thresholds will be higher than bone conduction thresholds—termed a "conductive hearing loss." When air conduction and bone conduction thresholds are similar but fall outside the limits of normal hearing, the hearing loss is called a "sensorineural hearing loss."

Speech audiometry In the United States, speech audiometry uses simple, two-syllable words presented via headphones to each ear individually to determine the lowest intensity level at which 50 percent of the words are correctly repeated, termed a *speech reception threshold*. Speech reception thresholds ranging from –10 to 20 dB HL are considered within normal limits. There are also forms of speech-in-quiet and speech-in-noise testing designed to emulate commonly occurring listening environments, which can contribute to functional needs testing and to evaluating an individual's expected benefits from amplification, described below. Disproportionately poor speech recognition performance in relation to an individual's thresholds for pure tones may suggest changes to the function of the cochlea, auditory vestibular nerve, brainstem, or central processing.

Immittance audiometry Immittance audiometry (sometimes referred to as "acoustic impedance" or "admittance testing") includes tympanometry and

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assessments of the acoustic reflex threshold. These tests are typically used to establish middle ear pressure and to estimate the transfer of acoustic energy through the middle ear system, which can help differentiate between different disorders.

Functional Communication Assessment

The aims of a functional communication assessment are to define an individual's audiologic and nonaudiologic needs related to hearing and communication, establish the impact of hearing loss on the individual and his or her communication partners (e.g., family), and to determine from which services and technologies the individual may derive benefits (ASHA, 2016f; Valente, 2006). When there is a strong relationship between measured hearing impairment and reported hearing and communication difficulties, managing the hearing difficulties through technologies and/or rehabilitation may be beneficial and sufficient. When there is a mismatch between reported difficulties and the magnitude of measured hearing difficulty, other factors must be explored, including the unique environments that the individual may operate in, the behaviors of other people who frequently interact with the individual, and psychological and cognitive factors such as intellectual capacity, anxiety, and depression. These factors match the biopsychosocial model underpinning the ICF.

Along the lines of the ICF framework, audiological testing captures primarily the impairment aspect of auditory function. However, audiologists must be mindful of hearing difficulties that arise with *noncommunicative activities* such as the detection of threats and alarms; the ability to localize sounds in space; and recognizing the sounds of events in the surrounding environment (a coin dropping on the floor, for example, or an automobile accident outside of the building). There are also *communicative activities* that can be difficult to assess and quantify because each individual lives in a unique auditory environment, but there are several touchstone conditions, such as the ability to understand a conversation in one-on-one and group settings, and the abilities to recognize and understand low-level or whispered speech, speech presented in background noise, and speech presented at high intensity levels.

Individuals being evaluated for the functional consequences of hearing loss most likely have a chronic problem, which is unlikely to improve spontaneously or through medical or surgical treatments. Consequently, treatment must focus on maximizing residual capacity to facilitate participation to the greatest extent possible.

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Evaluation and Diagnosis Summary

The results of the audiological evaluation should answer the following questions:

- Is the hearing loss or other form of hearing loss a result of a disease process that requires medical care?
- Is the magnitude of any measured hearing loss sufficient to create a functional deficit, and if so, can diminished function explain the concerns of the individual being evaluated?
- If there is a mismatch between the magnitude of the hearing loss and the concerns of the individual being evaluated, are there identified psychosocial factors to explain the mismatch, and are any additional investigations or referrals necessary?
- If there is no mismatch, which strategies will be the most effective for maximizing function (e.g., technologies, rehabilitation)?
- If the magnitude of any hearing loss or other form of auditory impairment is not sufficient to cause concern about disease or impaired function at present, what is the risk for developing hearing loss in the future, and are there any health or lifestyle changes that might mitigate future risk?

The answers to these questions drive the individualized audiological treatment plan. When an audiological evaluation is performed as an adjunct to a physician's medical evaluation, some of these questions may be deferred to the referring physician. The same set of tests of auditory function can be used to evaluate both the possibility of disease and the effects of hearing loss on function, although most of the traditional test battery is focused on the diagnosis of disease. Additional tests, such as otoacoustic emissions tests and tests for the characterization of tinnitus, may be used to distinguish between more complex forms of otologic disease or auditory dysfunction and are not reviewed here.

Treatment

Treatment for hearing loss can take many forms and will differ based on an individual's type of hearing loss, unique needs in daily life, personal preferences, and financial means. Treatments can include such services as auditory rehabilitation and counseling as well as various technologies (see Chapter 4), although not every person with hearing loss is a candidate for a hearing aid or other assistive technologies. Medical and surgical treatments are not part of this report's statement of task and will not be discussed.

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Selection, Fitting, Maintenance, and Use of Hearing Technologies

Many hearing health care professionals provide services and support to users of hearing technologies. The most common device-related services are the provision of and assistance with using hearing aids (see Chapter 4 for a discussion of hearing aids and hearing assistive technologies), which includes hearing aid selection, fitting, verification, and validation within the context of the functional communication assessment (for best practice guidelines for audiologic management of hearing loss in adults, see ASHA, 2016f and Valente, 2006; for a review of the components of hearing aid fitting management across worldwide guidelines, see Oh and Lee, 2016). Following best practices in audiology in the United States, selection of a hearing aid is based on an individual's needs and requirements for hearing aid gain, ear canal geometry, occlusion, special features (e.g., directional microphone, noise reduction circuit, feedback suppression, telecoil), ease of insertion and manipulating volume controls, and cosmetics. Determination of gain processing is initially based on a validated prescriptive procedure, such as those developed by the National Acoustics Laboratories (Byrne and Dillon, 1986; Byrne et al., 2001; Johnson and Dillon, 2001; Mueller, 2005). Other aspects of the hearing aid evaluation include selection of output limiting and compression features, and consideration of the need for special technologies that go beyond the scope of this report (e.g., bone-anchored hearing aids, contralateral routing of signal fittings, and middle-ear implants). Gain verification using a probe microphone ("real-ear" measures) is the most reliable method to validate that prescriptive gain targets have been achieved (Abrams et al., 2012; Mueller, 2001). Best practices for operating, maintaining, and using hearing aids are then discussed, with emphasis on both the devices and the individual. Device-related orientation includes instruction on hearing aid insertion and removal, use schedule, hearing aid features, reducing feedback, changing batteries, and performing maintenance. Patient-related orientation includes setting goals and expectations, methods for adjusting to amplification, counseling on communication strategies, and considerations for supplementary rehabilitation, such as speech reading or speech-perception training. Finally, a plan for assessment of treatment benefits is initiated using validated subjective and objective outcome measures (for examples, see Cox and Alexander, 1995; Cox et al., 2003; Dillon et al., 1997; Ventry and Weinstein, 1982). Follow-up visits may be required to perform further adjustments and to provide further education on the correct operation, maintenance, and usage of the hearing aid(s) or other technologies, including changing of batteries (Desjardins and Doherty, 2009). In the longer term, additional visits may be necessary to ensure that the hearing aids continue to perform optimally and that hearing remains stable.

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Although hearing aids are the more common treatment for which hearing health care professionals provide services and support, these professionals can also provide similar services for hearing assistive technologies (such as products connecting with the television or phone, see Chapter 4) even if they do not sell those technologies. Increased attention to hearing assistive technologies is needed in hearing health care professional training to enable these professionals to provide individuals with hearing loss information on the range of technologies available and to help individuals determine what technologies might be useful to them given the nature and extent of their specific hearing loss and communications needs. Tables 3-1 and 3-2 provide the distribution of hearing health care professionals who fit hearing aids and the distribution of venues that provide hearing aids, respectively, from one survey of the field.

Auditory Rehabilitation

Pharmaceuticals and medical devices cannot always provide definitive solutions for chronic health conditions or meet the specific needs and preferences of every individual. Similarly, for individuals with hearing loss, hearing aids cannot unequivocally address the multifaceted challenges of living with hearing loss, such as the hearing loss itself, communication difficulties, changes in quality of life, and possible comorbidities (see Chapter 2). Like other chronic health conditions, hearing loss requires a holistic, individual-centered approach to care that blends both medical and nonmedical solutions, such as auditory rehabilitation (also referred to as aural rehabilitation or audiological rehabilitation). Overall, auditory rehabilitation is designed to help individuals learn to live with hearing loss, provide information on the use of hearing aids and hearing assistive technologies, teach strategies for better listening and communication, and, in some cases,

TABLE 3-1
Hearing Aid Fittings Dispensed by Profession According to the 2008 MarkeTrak VIII Survey

Profession	Percent of Fittings
Audiologist	62.9
Hearing Aid Specialist	31.1
Physician	1.5
Other	4.5

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TABLE 3-2
Hearing Aid Modes of Delivery
According to the 2008 MarkeTrak VIII Survey

Source of Hearing Aid Distribution	Percentage of Survey Takers
Audiologist's office	31.2
Hearing aid specialist's office	27.5
Veterans Health Administration	14.5
Ear doctor's office	9.2
Mail order	4.7
Wholesale club	2.4
Department store	2.1
Clinic	1.2
Military installation	1.2
Hospital	1.1
Family doctor's office	0.5
Home	0.5
Drugstore	0.3
Other	2.4

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offer psychosocial support (ASHA, 2016b; Boothroyd, 2007; Sweetow and Palmer, 2005).

Auditory rehabilitation programs can take many shapes and reflect a variety of paradigms. For example, these programs may be offered with a group in a community setting or on an individual basis in an audiology clinic. Sessions may be led by an audiologist, a speech-language pathologist, or a trained volunteer (Bally and Bakke, 2007). Alternatively, individuals may take part in self-paced, multimedia rehabilitation programs from their home. Programs have been designed for an array of individuals with varying degrees and types of hearing loss and across all age groups. These programs may be focused on individuals who are new to using hearing aids, those who are experienced hearing aid users, or those who have hearing loss but do not use hearings aids. An individual's needs, preferences, abilities, and goals, along with the specific characteristics of the person's auditory disorder, should be considered in order to determine the type of auditory rehabilitation program(s) that would be best suited for that individual. This section will discuss the available evidence for auditory-based rehabilitation programs

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and for counseling-based, supportive programs, both of which may include Internet- and computer-based designs that are becoming more common.

The goal of auditory rehabilitation programs is to improve speech communication through the use of auditory training, and most of the studies that evaluate auditory training focus on measuring the different aspects of speech recognition. This training may be analytic in nature, centered on differentiating and identifying different parts of speech (e.g., vowels and consonants), or it may be synthetic, teaching listening skills and applying linguistic and context-specific techniques. Some auditory rehabilitation programs combine both of these strategies to maximize the opportunities for positive outcomes for individuals with hearing loss. Although an individual's family may be included in consultations and hearing aid orientation, auditory rehabilitation is typically designed to enhance the speech recognition of the individual with hearing loss and does not involve family members or other communication partners (some programs may incorporate family in home-based practice or in communication strategies training). Sweetow and Palmer (2005) conducted a review of available literature on auditory rehabilitation that included randomized controlled trials, cohort studies, and pre/post study designs, regardless of whether the study design included control groups or reported outcomes using subjective or objective measures; only 6 out of 213 studies met these defined inclusion criteria. The outcomes measured in these studies included factors connected to consonant recognition, speech perception with a range of one word to full sentences, and self-perception. Despite finding methodological shortcomings (e.g., small sample sizes, variable demographic data, a lack of long-term measures, a lack of blinding, inconsistent paradigms, variable outcome measures) and a lack of resounding evidence, the authors cautiously concluded based on a qualitative assessment that auditory training, specifically synthetic training, could be beneficial to individuals with hearing loss for the outcomes that were measured (Sweetow and Palmer, 2005).

Chisolm and Arnold (2012) updated the Sweetow and Palmer review and added four more studies to the analysis.[3] To further examine the evidence in the 10 studies, Chisolm and Arnold (2012) conducted a meta-analysis using the studies that included comparable outcome measures (6 out of 10 studies) related to speech recognition, regardless of factors that varied across the studies, such as listening environment and stimuli. The authors found that in the short term there was a small, but reliable, effect for improvements in speech recognition. Based on their findings, they concluded that "clinicians should have increased confidence in recommending

[3] A comprehensive summary of the studies and the outcome measures that are described in these two reviews can be found in Chisolm and Arnold (2012).

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the use of an auditory training program as a part of a comprehensive auditory rehabilitation plan" (Chisolm and Arnold, 2012, p. 249). However, they cautioned against assuming that improvements would be preserved over a longer timeframe, given a lack of data on long-term outcomes. In a more recent study by Kuchinsky and colleagues (2013), researchers used a physiologic measure of cognitive effort—pupil dilation—to study a speech-perception training program, which is a form of auditory training. The researchers found that participation in auditory training resulted in increased word recognition and that it reduced the cognitive effort required to identify words in the presence of background noise, a common complaint of people with hearing loss.

Of the 10 studies reviewed by Chisolm and Arnold in 2012, the authors concluded that only 1 study provided evidence and methodologies that were sound enough to be considered for clinical implementation—the 2006 study of the computer-based auditory training program, Listening and Communication Enhancement (LACE) (Chisolm and Arnold, 2012; Sweetow and Sabes, 2006). LACE is an interactive, adaptive program delivered in home settings that is available via the Internet, DVD, or CD (Neurotone, 2016; Sweetow and Sabes, 2006). The exercises included in the program are intended to produce "better comprehension of degraded speech, enhancement of cognitive skills, and improvement of communication strategies" (Sweetow and Sabes, 2006, p. 543). Studies of LACE have found statistically significant improvements on most of the outcome measures studied (usually tasks taught within the program related to improving speech recognition and the goals listed above), relatively high rates of compliance, better outcomes for new hearing aid users than for experienced users, and better outcomes for those who completed all of the training sessions than for those who did not (Chisolm et al., 2013; Henshaw et al., 2015; Olson et al., 2013; Sweetow and Sabes, 2006). However, a recent randomized controlled trial in a population of veterans found no statistically significant improvement in outcomes among those using LACE when compared to those using standard of care hearing aid intervention alone (Saunders et al., 2016).

Since the development of LACE, other computer-based auditory training programs have been tested with mixed results (Abrams et al., 2015; Dubno, 2013; Saunders and Chisolm, 2015). Henshaw and Ferguson (2013) conducted a systematic review of literature on these types of computer-based programs. The authors reviewed 13 studies out of 229 that were originally identified. These studies were randomized controlled trials, nonrandomized controlled trials, cohort studies, or pre/post studies. Although the authors identified statistically significant improvements on tasks that were taught within the various programs, the evidence was mixed in terms of improved speech recognition. The evidence suggested that, when reported, there were

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high rates of compliance and that information presented during the training was retained for extended periods of time (up to 7 months). Unlike the Chisolm and Arnold (2012) review described above, a meta-analysis was not possible due to the heterogeneity of the studies. Henshaw and Ferguson also described challenges with the large variability in study design, protocols, outcome measures, participant inclusion, and individual benefits that resulted from the training. However, the authors did highlight the potential of computer-based auditory training programs, noting that these programs are easily accessible, customizable and flexible, and both cost and time efficient (Henshaw and Ferguson, 2013). Additionally, researchers have highlighted patient-perceived benefits associated with the use of computer-based auditory programs which include increased self-confidence and general satisfaction and enjoyment (Saunders and Chisolm, 2015; Tye-Murray et al., 2012). Current and ongoing studies of computer-based auditory programs (Miller et al., 2015; Saunders et al., 2016) hold promise for expanding the evidence base of these programs and informing decisions about the design of future programs.

Counseling-Based, Supportive Rehabilitation

Rehabilitation programs that concentrate on counseling/psychosocial support, personal adjustment/coping, and building communication skills offer a platform for improving attitudes and beliefs, building resilience, reducing experienced and perceived stigma, and empowering individuals to take a more active role in managing their hearing loss (also see Chapter 6). These types of programs are usually offered in a group setting and may be led by an audiologist or a trained health professional. Hawkins (2005) conducted a systematic review of rehabilitation programs of this nature which included randomized controlled trials, quasi-experimental study design, and nonintervention cohort studies. Unlike the case with auditory training, which can be evaluated using objective measures, the outcomes measured in these studies tended to be more subjective, assessing individuals' self-perceived changes in personal adjustment/coping, limitations related to their hearing loss, and overall satisfaction with hearing aids. Based on an evaluation of 12 studies (out of 22 identified), Hawkins concluded that there is some evidence that these types of counseling-based programs had a positive effect on self-perception and self-esteem and also positively contributed to the use of enhanced communication skills and hearing aids (Hawkins, 2005). Most of the available studies identified for this review used nonexperimental designs, had small sample sizes (usually less than 50 people), and did not track long-term outcomes—common limitations in this area of literature. Hawkins (2005) hypothesized that the generally strong support among experts and clinicians for counseling-based group

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rehabilitation, despite the lack of conclusive evidence, is a result of clinical experience and observed benefits for patients.

In a subsequent review of the literature, Chisolm and Arnold (2012) narrowed the inclusion criteria to randomized controlled trials with control groups that included outcome measures related to quality of life and reductions in limitations related to hearing loss. The authors found three new studies that met their criteria and revisited 7 of the 12 studies originally reviewed by Hawkins (2005). Upon assessment of the methodologies and the evidence presented in the studies, Chisolm and Arnold determined that the evidence for three of the counseling-based programs (i.e., Chisolm et al., 2004; Hickson et al., 2007; Preminger and Yoo, 2010) was supportive enough to warrant consideration for inclusion in clinical practice. To further examine the available evidence, the authors conducted a meta-analysis of the 10 studies and found statistically significant effects—but large variability—when assessing whether these programs reduced perceived limitations related to hearing loss. As with auditory training programs (discussed above), Chisolm and Arnold concluded that counseling-based rehabilitation programs offer small but reliable benefits and that health professionals can recommend these programs to individuals and their families with increased confidence (Chisolm and Arnold, 2012). Roets-Merken and colleagues (2015) conducted a systematic review and meta-analysis of the literature on counseling-based rehabilitation programs for both hearing loss and vision impairment. The authors evaluated the studies for outcomes specifically related to functional and emotional status, social engagement, and self-efficacy. Based on the six hearing loss studies that used randomized controlled trial or control trial designs and met the inclusion criteria, the researchers concluded that there was no statistically significant effect of these programs on the defined measures related to quality of life and well-being.

Since Chisolm and Arnold (2012) conducted their review of the literature, additional studies looking at counseling-based rehabilitation programs have been published. Box 3-2 provides two examples of recently evaluated rehabilitation programs in the United Kingdom and Sweden that employed interactive strategies to boost knowledge and to respond to the psychosocial needs of people with hearing loss. Borg and Borg (2015) described a rehabilitation program oriented toward young adults, using a nonexperimental design with subjective outcomes, and Ferguson and colleagues (2015, 2016) used a randomized controlled trial design to test an Internet-/computer-based educational intervention for new hearing aid users.

Some of the more integrative counseling-based rehabilitation programs have actively incorporated spouses, communication partners, and family members and have identified possible positive outcomes for both the person with hearing loss and the family member participants (Caissie et al., 2005; Habanec and Kelly-Campbell, 2015; Preminger and Meeks, 2010; Scarinci

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Box 3-2 EXAMPLES OF RECENTLY REVIEWED COMMUNITY-BASED REHABILITATION PROGRAMS

In Sweden, Borg and Borg (2015) developed a rehabilitation program for young adults with hearing loss called the EC program, which was based on principles of empathy and empowerment (E) and competence and counseling (C). The program used short videos, group meetings, CDs, and DVDs during seven or eight, 2-hour weekly sessions to build self-confidence and competence and to foster independence, creativity, and self-awareness. The ultimate goal was to empower the young adults to educate and counsel others about hearing loss and to respond constructively during sometimes difficult, social interactions—a vital skill for the transition to adulthood. The habilitation/rehabilitation centers that implemented the EC program often adopted parts of the program rather than implementing all aspects of it, thus making comparison and evaluation difficult. Overall, the leaders of the programs rated the interventions positively, with indications that the participants had gained greater knowledge about hearing and about how hearing loss affected their lives and interactions with others. The evaluations also concluded that participants were more confident and could more easily explain the challenges associated with hearing loss to others. When asked about how the program could be improved, participants suggested the development of Web-based courses and chat functions that would allow people to connect more readily across geographic regions (Borg and Borg, 2015).

In the United Kingdom, Ferguson and colleagues (2015, 2016) used a prospective randomized controlled trial to test a multimedia rehabilitation program that was designed for first-time hearing aid users. The program included seven interactive modules that featured videos, pictures, diagrams, animations, testimonials, and quizzes to test the users' comprehension of the material. The program, which required less than an hour to complete, was delivered via DVD (for computers or television) or the Internet and could be used in home settings. Six weeks after the completion of the program, participants demonstrated statistically significant improvements and short-term retention of knowledge related to practical (e.g., earmold cleaning, telephone skills) and psychosocial (e.g., the limitations and benefits of hearing aids) areas that were presented during the intervention. Participants rated the program as highly valuable and indicated a preference for the interactive materials over static written resources. Additionally, almost half of the participants watched the modules two or more times (Ferguson et al., 2015, 2016). In their review of the data, the researchers pointed out that participants had higher levels of knowledge related to the limitations of hearing aids than members of the control group, whereas their knowledge about the benefits of hearing aids was the same as that of the control group (Ferguson et al., 2016).

et al., 2013). These types of inclusive, family-centered rehabilitation programs recognize the effects of hearing loss on family members (often referred to as a third-party disability), take the needs of family members into account, and are intended to increase awareness and enhance communication for everyone who is touched by the hearing loss within the family. Using randomized controlled trials, both Preminger and Meeks (2010) and Habanec and Kelly-Campbell (2015) engaged spouses of individuals

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with hearing loss in group-based auditory rehabilitation sessions. Following participation in the programs, spouses reported statistically significant reductions in measures of third-party disability and improvements in communication. Despite the potential value of inclusive, group-based programs, this approach may not always be able to respond to the individual needs, circumstances, and preferences of each of the individuals in the group, suggesting that a combined approach to rehabilitation may optimize results.

In recent years, researchers have also explored the use of computer- and Internet-based modules as cost-effective, convenient mechanisms for increasing access to and use of counseling-based, supportive rehabilitation programs. Many of these programs have been developed using models from auditory training programs. Overall, evaluations of Web-based education and rehabilitation programs have identified positive outcomes, including increases in knowledge, decreases in perceived limitations related to hearing loss, and decreases in depression and anxiety (Ferguson et al., 2015, 2016; Laplante-Lévesque et al., 2006; Thorén et al., 2011, 2014). See Box 3-2 for a discussion of an Internet-based rehabilitation program that was recently tested by Ferguson and colleagues (2016) with 203 new hearing aid users. Internet-based education and rehabilitation programs offer a promising opportunity to extend the reach of limited resources, engage people with hearing loss and their families, and bolster knowledge and confidence.

OPPORTUNITIES TO IMPROVE HEARING HEALTH CARE SERVICES

In considering its task of improving accessibility and affordability of hearing health care, the committee identified a number of opportunities to change hearing health care services for the benefit of the patient and consumer. These opportunities, which are discussed in the sections that follow, include

- Enhance quality in patient–provider interactions
- Involve primary care providers in hearing health care
- Empower consumer and patient use of hearing health care
- Support and engage in quality improvement
- Overcoming disparities in services delivery and access
- Improve and expand the use of auditory rehabilitation programs
- Develop and evaluate innovative models of hearing health care delivery
- Examine the Medicare requirement for physician referral for diagnostic hearing testing

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Enhance Quality in Patient–Provider Interactions

As is the case with other chronic health conditions, the effective diagnosis, treatment, and management of hearing loss is best achieved using a patient-centered approach to care and a collaborative and supportive relationship with the professionals who provide that care. However, interviews of individuals with hearing loss and their families indicate that interactions with health care providers and hearing professionals do not always meet their needs and expectations (Kelly et al., 2013; McCormack and Fortnum, 2013; Southall et al., 2010). Anecdotal evidence from people with hearing loss has shown that some health professionals, like their patients (see Chapter 6), may maintain the beliefs that hearing loss is a natural part of aging and that hearing aids and other treatment options have low levels of efficacy (Gilliver and Hickson, 2011; van den Brink et al., 1996; Wallhagen and Pettengill, 2008). Studies also indicate that hearing loss is often neglected or dismissed in primary care settings, implying that it is not always viewed as a priority despite the potential health implications (see Chapter 2).

Whether increasing slowly over time or occurring with a sudden onset, hearing loss is a condition that needs to be processed and accepted before an individual can be fully ready to take action and consider and adopt treatment options (see the discussion of the transtheoretical model in Chapter 6). Health care professionals can play a positive, supportive role in helping individuals accept and adjust to a diagnosis of hearing loss. However, a review of first-time consultations with audiologists in Australia found a lack of demonstrated empathy and a divergence between the patients' needs and the goals of the audiologists (Ekberg et al., 2014). For example, when the audiologists delivered the diagnosis, two-thirds of them directly transitioned into a recommendation for hearing aids, without allowing the patient time to react or ask questions about the diagnosis and without discussing other available treatment options (e.g., hearing assistive technologies, communication programs, support groups) (Ekberg et al., 2014). Furthermore, audiologists in this study often overlooked the psychosocial needs of their patients. In approximately half of the encounters (51 percent), patients voiced psychosocial concerns and negative attitudes toward the idea of adopting hearing aids, sometimes with an emphasis on perceived stigma. However, the audiologists usually redirected the conversation to a discussion of the various models of hearing aids available. Given these unsatisfactory interactions, many patients left the consultation without agreeing to a treatment strategy. To improve these interactions with patients, Ekberg and colleagues (2014) suggested that the principles of personal adjustment counseling and patient-centered care should be emphasized in training for audiologists. Motivational interviewing—a patient-centered

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approach to counseling and behavior change that has been applied in a number of medical settings (Lundahl et al., 2013)—may also benefit the patient–provider interaction following a diagnosis of hearing loss and in considering patient preferences and needs regarding treatment. At least one study is under way to investigate the potential for using motivational interviewing via the Internet to promote individuals to seek additional hearing health care if they have failed a prior hearing test (Weineland et al., 2015). Optimal patient–provider interactions following a diagnosis require that hearing health care professionals recognize the patient's level of acceptance, adjustment, and readiness for action; identify the patient's information needs; consider whether the patient's level of health literacy may interfere with comprehension (see Chapter 6 for a discussion of health literacy); and provide the appropriate levels of support and empathy to the patient and his or her family, who may also be involved in decision making and care for the individual with hearing loss.

In the context of the social-ecological model (see Chapter 1), the role of health care and hearing health care professionals in educating and supporting individuals and their families about hearing loss, treatment options, and management is critical. The information provided and the attitudes projected by health care providers are consequential in shaping the attitudes and beliefs of individuals and the subsequent actions taken by those individuals. For example, interviews with individuals about the adoption and use of hearing aids indicated that individuals were more likely to pursue the use of hearing aids and overcome challenges in adapting to hearing aids when they developed a good relationship with their audiologist because of such factors as perceived consideration, warmth, and empathy (Dawes et al., 2014). Following a review of available literature, Clements (2015) suggested that the first consultation with an audiologist or other hearing health care professional may have a long-term effect on decision making and outcomes. If the encounter creates a negative patient response, it is more likely that that individual will return to a state of denial about his or her hearing loss (the pre-contemplation phase in the transtheoretical model in Chapter 6, Figure 6-2) and deny the need to take action, further delaying possible opportunities to improve quality of life and well-being (Clements, 2015). The likelihood that an individual will make appropriate decisions about how to move forward in treating hearing loss may be affected by multiple factors, including the cost and convenience of the treatment and the lifestyle and personal attitudes of the patient. One challenge that hearing health care professionals and patients face is ensuring that there is plenty of time for the discussion of options and next steps, particularly regarding the purchase and fitting of hearing aids. The patient may be asked to make a large investment in hearing aids at the same time that the patient is adjusting to a new diagnosis of hearing loss.

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The literature on patient-centered care in various areas of health care is replete with examples of the benefits of listening and responding to patients' concerns, considering patients' specific needs and preferences, and engaging them in shared decision making about available treatment options (Epstein and Street, 2007, 2011; IOM, 2001, 2011c, 2014, 2015a; Meyers et al., 2010). Hearing health care professionals—as with other health care professionals—need to engage in best practices in patient-interaction processes and take the necessary time to understand the attitudes, concerns, health literacy needs, and priorities of individuals with hearing loss; discuss all available treatment options, not just hearing aids; know what community-based education and support resources are available both locally and online; educate individuals about the use, operation, and maintenance of hearing aids and hearing assistive technologies at an understandable level; and manage user expectations and beliefs. Providing a written summary of the discussion may also be helpful since an individual's hearing loss can affect communication during the office visit.

Involve Primary Care Providers in Hearing Health Care

Enhancing discussions about hearing loss between patients and health care professionals as a part of regular health assessments in primary care settings could help improve hearing health, promote its importance as a health priority, and decrease delays in referral and treatment. Because primary care providers (such as family practice physicians, geriatricians, nurse practitioners, and physician assistants) are often the first to assess and diagnose patients with hearing loss (Bagai et al., 2006; DeVoe et al., 2011; Flocke et al., 1998; Green et al., 2001; Pandhi and Saultz, 2006; Phillips et al., 2014; Rosenthal, 2008; Saultz, 2003; Saultz and Albedaiwi, 2004; Saultz and Lochner, 2005; Worrall and Knight, 2006), they can play a vital role in referring patients to the hearing health care system and following up to ensure that the patient receives all necessary care. Furthermore, as health care professionals who may have long-term relationships with patients (DeVoe et al., 2011; Phillips et al., 2014), primary care providers can help patients and their family members navigate the hearing health care journey and serve as sounding boards, trusted advisors, and advocates. For example, tinnitus is a hearing concern that patients often present to primary care providers and, although it can occur without hearing loss, it frequently accompanies hearing loss (Hoare, 2013). Primary care providers can help navigate the medical and audiological evaluations that may be required, provide assistance in gaining access to other support services, and help facilitate referrals for patients who may benefit from a community support group or, for those requiring long-term care, a residential facility that specializes in supporting people with hearing loss (McKee, 2013; Yueh et

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al., 2003). Primary care teams within the medical home can also provide support and education to patients having difficulty with the use of the technologies (e.g., inserting hearing aids, changing batteries, and adjusting hearing aids for different noise environments and to interface with different technologies such as a telephone, television, stereo, and other sources of sound).

In spite of the many opportunities the patient–primary care provider relationship can present for helping identify, inform, and possibly treat hearing loss, substantial evidence shows that hearing loss is often underdetected and undertreated in primary care settings (Cohen et al., 2005; Danhauer et al., 2008; Johnson et al., 2008). There are many reasons for this. Individuals might be reluctant to admit their hearing challenges to their primary care provider or may not experience hearing difficulties in the quiet setting of an exam room even though they do have hearing difficulties in noisier settings (Bogardus et al., 2003). Furthermore, primary care providers might find it challenging to add hearing screening to acute care visits due to time constraints, a lack of reimbursement, or a lack of a structured reminder (Johnson et al., 2008). For older adults, some primary care providers may think hearing loss is simply a normal part of aging and that there are no worthwhile treatment options. Additionally, primary care providers may not be aware of existing hearing health care resources and guidelines. Research is needed to determine how often primary care providers are discussing their patient's hearing concerns, offering hearing assessments, and, ultimately, whether their interventions result in their patients getting the hearing health care they need.

As part of the Patient Protection and Affordable Care Act,[4] the Medicare Initial Preventive Physical Exam and the Annual Wellness Visit include provisions for reviewing patient hearing status in the primary care setting. To make the best use of these provisions and the opportunity to detect hearing loss in any primary care visit, regardless of the type of insurance, studies are needed to identify the most effective methods for improving the likelihood and ease of detecting hearing loss in patients when a patient presents in the office of a health care professional who is not a hearing specialist. Some primary care providers have implemented systems to make hearing screenings a part of routine care. Examples include asking patients to complete a pre-exam survey, training nonphysician personnel to perform basic screenings, conducting an oral history, or exploring the potential for hearing loss concerns through a whisper or a finger rub test. In particular, primary care providers should be vigilant for hearing changes in patients who present with comorbid conditions such as depression or cognitive

[4]Patient Protection and Affordable Care Act, Public Law 111-148, 111th Cong., 2nd sess. (March 23, 2010).

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dysfunction, which may be associated with or exacerbated by hearing loss and therefore might improve with the use of assistive technologies (Mulrow et al., 1990). As the first point of contact that many patients have with the health care system, primary care providers play a critical role in identifying hearing loss and facilitating patient access to additional hearing health care when appropriate, and they could be used more. However, primary care providers are only one part of the hearing health care team, and most individuals with hearing loss would likely benefit from services provided by many members of the team. Primary care providers are increasingly practicing within a patient-centered medical home and could benefit from additional training in supporting a team-based care approach specific to hearing health.

Empower Consumer and Patient Use of Hearing Health Care

There are multiple opportunities to empower consumers in their use of hearing health care which may also reduce barriers and improve access to hearing care.

Food and Drug Administration Regulations on Medical Evaluation or Waiver

Because the sale of hearing aids is regulated by the Food and Drug Administration (FDA) (see Chapter 4 for more detail), a dispenser selling hearing aids must follow the Code of Federal Regulations regarding the conditions of sale of hearing aids. Among other stipulations, FDA's regulations require that prior to obtaining hearing aids, a patient must provide the hearing aid dispenser with a "written statement signed by a licensed physician that states that the patient's hearing loss has been medically evaluated and the patient may be considered a candidate for a hearing aid" (see Box 3-3). The FDA regulation provides an alternative whereby patients 18 years of age or older can sign a waiver of that evaluation (see Box 3-3). This regulation was enacted in 1977 out of concern for the potential of hearing aids to be substituted for the medical or surgical treatment of hearing loss and possibly lead to further declines in patient health (Mann and Nandkumar, 2015). The committee explored this issue, obtained and evaluated data from the available literature and from the Department of Veterans Affairs (VA) and the Department of Defense (DoD), and concluded that the health risks are low, this regulation provides no clinically meaningful benefit, and the waiver presents a barrier to access with no substantial enhancement of patient safety.

First, the committee examined the nature and extent of the medical conditions listed in the FDA regulations as well as others that could be cause for concern. Although not directly tied to the medical evaluation

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Box 3-3 CODE OF FEDERAL REGULATIONS ADDRESSING MEDICAL EVALUATION CONDITIONS FOR HEARING AID SALE

21 C.F.R. § 801.421 Hearing aid devices; conditions for sale.

(a) *Medical evaluation requirements*—

(1) *General.* Except as provided in paragraph (a)(2) of this section, a hearing aid dispenser shall not sell a hearing aid unless the prospective user has presented to the hearing aid dispenser a written statement signed by a licensed physician that states that the patient's hearing loss has been medically evaluated and the patient may be considered a candidate for a hearing aid. The medical evaluation must have taken place within the preceding 6 months.
(2) *Waiver to the medical evaluation requirements.* If the prospective hearing aid user is 18 years of age or older, the hearing aid dispenser may afford the prospective user an opportunity to waive the medical evaluation requirement of paragraph (a)(1) of this section provided that the hearing aid dispenser:

(i) Informs the prospective user that the exercise of the waiver is not in the user's best health interest;
(ii) Does not in any way actively encourage the prospective user to waive such a medical evaluation; and
(iii) Affords the prospective user the opportunity to sign the following statement:

I have been advised by _____ _____ (Hearing aid dispenser's name) that the Food and Drug Administration has determined that my best health interest would be served if I had a medical evaluation by a licensed physician (preferably a physician who specializes in diseases of the ear) before purchasing a hearing aid. I do not wish a medical evaluation before purchasing a hearing aid.

SOURCE: C.F.R. Title 21: Hearing aid devices; conditions for sale § 801.421.

requirement, a separate section of the regulations (21 C.F.R. § 801.420) states that hearing aid dispensers should be aware of eight health concerns and "should advise a prospective hearing aid user to consult promptly with a licensed physician (preferably an ear specialist)" if those conditions are seen through actual observation or learned from other information such as patient history. The eight conditions that have been termed the "red flag conditions" are

- "Visible congenital or traumatic deformity of the ear
- History of active drainage from the ear within the previous 90 days
- History of sudden or rapidly progressive hearing loss within the previous 90 days
- Acute or chronic dizziness

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- Unilateral hearing loss of sudden or recent onset within the previous 90 days
- Audiometic air-bone gap equal to or greater than 15 decibels at 500 Hz, 1,000 Hz, and 2,000 Hz
- Visible evidence of significant cerumen accumulation or a foreign body in the ear canal
- Pain or discomfort in the ear" (21 C.F.R. § 801.420).

Concerns related to not identifying these conditions prior to the dispensing of hearing aids include the following: (1) the patient's condition could be resolved through medical or surgical procedures or treatments, without the need for hearing aids; (2) given the patient's condition, hearing would not be expected to improve with hearing aids, so the patient would be sold a product he or she does not need; or (3) use of hearing aids could mask an ongoing health condition that could go untreated and possibly cause further detriment to hearing or health.

To determine whether the above-mentioned concerns were significant enough to justify keeping the medical waiver regulation in place, the committee assessed the data available in the scientific literature on the incidence and prevalence of the eight conditions and others that could relate to hearing loss. The committee also obtained data from the VA which reported the incidence of medical conditions in veterans requiring referral to otolaryngologists by audiologists, and the committee obtained data from the DoD on the incidence of hearing-related medical conditions in service members based on a review of medical coding data (see Table 3-3). The data show that these medical conditions are rare. Most of these medical conditions present with symptoms that are obvious to the patient or the provider (e.g., drainage, pain, deformity, conductive hearing loss) or could be symptoms of any number of medical conditions (e.g., dizziness). This is in contrast to the relatively high frequency of untreated hearing loss.

The FDA regulations stipulate that the contents of the user instructional brochure that manufacturers compile as part of the hearing aid packaging contain information about the eight red flag conditions so that consumers will be aware of these potential medical conditions that can cause hearing loss. It is not evident that a required physician evaluation or signing a waiver of that evaluation provides any additional clinically meaningful benefit. The committee was unable to find any analogous examples in health care where a similar waiver is required for adults. In most areas of health care, patients are empowered to seek the care they think they need for their symptoms and are not mandated by any regulation to obtain a physician's evaluation. For example, glaucoma testing is often recommended prior to being fitted for prescription glasses, but it has not been mandated, even though the incidence of glaucoma—1.9 percent of people

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TABLE 3-3
Medical Conditions That Can Present with Hearing Loss

Condition	Rates in the Published Literature	Rates in the DoD and VA Populations	Predominant Presentation, Symptoms, and Treatment
Cerumen impaction	~2% of adults (Davis, 1989; Karlsmose et al., 2001)	1.3%[a] (N = 3,500,000) (VA)[b]	Unilateral or bilateral Symptoms: ear fullness, decreased hearing Treatment: Removal with ceruminolytics; irrigation; debridement
Otitis externa	4–8.1/1,000/year[c] (CDC, 2011; Guthrie, 1999) 1.2% (males) 1.3% (females) (Rowlands et al., 2001)	Not provided	Generally unilateral Symptoms: acute ear pain, drainage, decreased hearing, swollen pinna Treatment: antibiotics, debridement
Otitis media (OM)	Acute OM: 5.46%[c] in North America; chronic suppurative OM: 3.06%[c] (for a review, see Monasta et al., 2012)	Not provided	Unilateral or bilateral Symptoms: acute ear pain, fullness, fever, decreased hearing Treatment: antibiotics; drainage with ear tube
Tympanic membrane perforation		2/1,000/year[d] (N = NA) (DoD)[e]	Unilateral or bilateral Symptoms: hearing loss, ear pain, drainage Treatment: observation; surgical repair
Otosclerosis	6.1–13.7/100,000/year (Levin et al., 1988; Pearson et al., 1974)	Not provided	Generally unilateral Symptoms: hearing loss Treatment: observation; hearing aids; middle ear surgery
Cholesteatoma	3.7–13.9/100,000/year[c] (Kemppainen et al., 1999; Tos, 1988; for a review, see Kuo et al., 2015)	Not provided	Generally unilateral Symptoms: hearing loss, ear pain, drainage, dizziness/vertigo Treatment: surgery
Sudden sensorineural hearing loss	10.21–27/100,000/year (Alexander and Harris, 2013; Byl, 1977; Wu et al., 2006)	~0.2/1,000/year (N = NA) (DoD)[e]	Unilateral Symptoms: sudden hearing loss, possible dizziness/vertigo Treatment: observation, steroids

continued

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TABLE 3-3
Continued

Condition	Rates in the Published Literature	Rates in the DoD and VA Populations	Predominant Presentation, Symptoms, and Treatment
Meniere's disease	190/100,000/3 years in the United States (for a review, see Alexander and Harris, 2010)	Not provided	Unilateral Symptoms: fluctuating hearing loss, tinnitus, vertigo, ear pressure Treatment: observation, low salt diet, diuretic
Vestibular schwannoma (also known as acoustic neuroma)	0.6–2/100,000/year (Babu et al., 2013; Lin et al., 2005; Propp et al., 2006; Stangerup, 2006, 2010)	0.009/1,000/year (N = 1,313,520) (DoD)[e]	Unilateral Symptoms: hearing loss, vertigo/imbalance, facial weakness, difficulty swallowing Treatment: observation with serial imaging, radiotherapy, surgery

NOTE: DoD = data on military service members; NA = data not available; VA = data on veterans.

[a]Combined rate for cerumen impaction and foreign body removal.

[b]Personal communication. Email to staff for the Committee on Accessible and Affordable Hearing Health Care for Adults regarding incidence of medical conditions in the veteran population, from David Chandler, Deputy Chief Consultant, Department of Veterans Affairs. Received January 15, 2016. Available by request from the National Academies of Sciences, Engineering, and Medicine Public Access Records Office. For more information, email PARO@nas.edu.

[c]These estimates include children.

[d]Combined rate for tympanic membrane perforation, ossicular discontinuity, and auditory nerve disorders.

[e]Personal communication. Email to staff for the Committee on Accessible and Affordable Hearing Health Care for Adults regarding incidence of medical conditions in military service members, from Mark Packer, Executive Director, Department of Defense Hearing Center of Excellence. Received August 7, 2015. Available by request from the National Academies of Sciences, Engineering, and Medicine Public Access Records Office. For more information, email PARO@nas.edu.

40 years of age and older in the United States (NEI, 2016)—is relatively high compared to the rates for the above-mentioned red flag conditions, there is treatment to slow its progression, and the consequences of the disease can seriously affect vision and are irreversible.

Second, the use of the waiver is common practice, and it is easily selected in online or mail-order sales. The committee could not find a recent peer-reviewed study with reliable data on the overall percentage of individuals who provide proof of a medical evaluation to hearing health care professionals or the percentage of individuals who sign the waiver, but several estimates provided to the committee by professional organizations

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and anecdotal evidence indicate that approximately 60 to 95 percent of individuals purchasing hearing aids may be signing the waiver[5,6] (Adams, 1995; PCAST, 2015). The FDA regulations require hearing health care professionals to maintain records of the statements or waivers for 3 years (21 C.F.R. § 801.421). Hearing aids are also available for sale online, often with a requirement that the consumer provide an audiogram so that fitting can be done, but consumers are asked only to read the medical evaluation statement and check a box if they choose to waive the medical evaluation. The ease of selecting the waiver, much as in downloading a mobile app or software upgrade, can mean that the consumer does not read it thoroughly but rather agrees to it (or provides an electronic signature) as a routine step in the purchasing process. In addition, the regulations present a barrier to access by requiring a separate appointment (with additional costs that may be at the patient's expense, depending on his or her health insurance coverage) for a medical evaluation that in most cases would not be helpful and would delay a patient from getting much needed assistance with hearing and communication.

In summary, the committee finds no evidence that the required medical evaluation or waiver of that evaluation provides any clinically meaningful benefit. The committee finds that the medical evaluation regulations are not effective, nor are they needed to protect patient health and safety. In weighing the rareness of the medical conditions, the incidence of hearing loss in adults, the widespread need for hearing health care, and the wide use of the medical waiver, the committee recommends removing this regulation to serve consumers' best interests.

Access to and Portability of Hearing Health Care Records

Access to hearing aid–related records (including audiograms and programming history) and the ability to move those records between hearing aid dispensers is an area of concern. The President's Council of Advisors on Science and Technology recommended that the Federal Trade Commission

[5]Personal communication. Letter to staff for the Committee on Accessible and Affordable Hearing Health Care for Adults, from Kim Cavitt, President, Academy of Doctors of Audiology; Judith Page, President, American Speech-Language-Hearing Association; and Larry Eng, President, American Academy of Audiology. Received August 27, 2015. Available by request from the National Academies of Sciences, Engineering, and Medicine Public Access Records Office. For more information, email PARO@nas.edu.

[6]Personal communication. Letter to the Committee on Accessible and Affordable Hearing Health Care for Adults, from Kathleen Mennillo, Executive Director, International Hearing Society. Received January 15, 2016. Available by request from the National Academies of Sciences, Engineering, and Medicine Public Access Records Office. For more information, email PARO@nas.edu.

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enact requirements for hearing health care professionals to provide or make available audiograms and hearing aid programming reports and settings to consumers (PCAST, 2015). Such a policy could facilitate consumers' ability to change their hearing health care providers for subsequent care if their providers are not meeting their needs, or it could allow changes in providers if an individual moves to another location or is away from home for an extended period of time. (An additional challenge to changing providers is that hearing aids have proprietary software that can only be programmed by dispensers who have a relationship with the manufacturer of that particular hearing aid. See Chapter 4 for further discussion.)

The portability of and access to an individual's own medical records is a legal right guaranteed under the Privacy Rule of the Health Insurance Portability and Accountability Act[7] (HIPAA). The Privacy Rule grants patients a right to inspect and receive copies of certain health information about them—known as a designated record set—that is held by a HIPAA-covered entity (e.g., a medical office or hospital). The Privacy Rule regulates health care providers that conduct specific types of electronic transactions such as billing for health care services or verifying insurance benefits, so audiologists and hearing instrument specialists typically are subject to the HIPAA Privacy Rule. Under the HIPAA statute, patients have a legally enforceable right of access to their designated record set within 30 days of requesting them, a time limit that is subject to an extension under certain circumstances.

The audiogram as well as other hearing-related health records should be part of the individual's designated record set. The Privacy Rule defines this record set as including medical, insurance, and billing records plus an additional category of other records "used, in whole or in part, by or for the covered entity to make decisions about individuals" (45 C.F.R. § 164.501). This definition strongly suggests that if an audiologist or hearing instrument specialist uses any part of the audiogram to make decisions about an individual, the entire file is part of that individual's designated record set. However, a patient's access may depend on the data retention policy of the audiologist or hearing instrument specialist. The rule allows individual access only to data that a health care provider "actually maintains" at the time that an individual's request is received (79 Federal Register 7289). State regulations typically determine which records each provider needs to maintain.

Despite this broad right of access across all sectors of the health care system, patients report that they have difficulty obtaining access to their health data, and access problems perennially appear as sources of patient complaints under HIPAA. Patients who are denied access can file a com-

[7]Privacy Rule of the Health Insurance Portability and Accountability Act, Public Law 104-191; 45 C.F.R. § 164.524.

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plaint with the Office for Civil Rights at the Department of Health and Human Services, and this office generally will attempt to work with the provider to explain its obligation to provide access. In other areas where patients have encountered difficulty accessing their health records, patient advocacy groups often develop programs to assist patients in exercising their rights and filing complaints if access is denied. Consistent with laws governing access and portability of other health records, hearing health care patients should have access to their audiograms and other hearing health care records held by HIPAA-covered hearing health care professionals.

Support of and Engagement in Quality Improvement

Measuring and Improving Quality

High-quality health care—regardless of the type of care, the geographic location where it is delivered, or the patient population receiving the care—must be safe, effective, patient centered, timely, efficient, and equitable (IOM, 2001, 2006a,b, 2011a, 2012b). Improving and maintaining the quality of care that patients receive can be accomplished through a variety of mechanisms from the individual provider level up through the system level on a national basis. For example, evidence-based clinical practice guidelines and standards of practice can be used to educate health professionals, inform practice patterns, and facilitate widespread adherence to best practices. Performance metrics can be used to standardize and incentivize high-quality care, assess quality in specific areas of care, and compare care across providers. Additionally, continuous quality improvement efforts can be used in practice settings and health care systems to evaluate current practices, inform adjustments in care delivery, and provide data to strengthen the evidence base. Like all aspects of health care, high-quality hearing health care and improvements to that care need to be built on a foundation of scientifically sound data and research methods, as is described throughout this report.

Clinical Practice Guidelines and Standards of Practice

The purpose of clinical practice guidelines and standards of practice is to provide direction for high-quality, evidence-based health care services and established best practices. In the United States, the Agency for Healthcare Research and Quality (AHRQ) catalogs clinical practice guidelines[8]

[8]AHRQ has adopted the Institute of Medicine definition of clinical practice guidelines, which states, "Clinical practice guidelines are statements that include recommendations intended to optimize patient care that are informed by a systematic review of evidence and an assessment of the benefits and harms of alternative care options" (IOM, 2011b, p. 4).

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for various health conditions, treatments, and medical specialties in the National Guideline Clearinghouse. A set of stringent inclusion criteria (available at www.guideline.gov) is used to evaluate each of the guidelines submitted for review (AHRQ, 2014). In the case of hearing loss, a few relevant guidelines have met the inclusion criteria and are listed within the clearinghouse under otolaryngology and otolaryngologic health conditions (see Box 3-4; AHRQ, 2016). Typically, health care professional associations collaborate with researchers and clinicians to develop evidence-based clinical practice guidelines in areas where scientifically rigorous data and studies are available.

In addition to the National Guideline Clearinghouse, several professional organizations maintain standards of practice and clinical guidelines for public reference. Box 3-4 provides examples of clinical practice guidelines and standards of practice for hearing loss in adult populations. The American Speech–Language–Hearing Association (ASHA) also maintains an online collection of evidence-based clinical practice guidelines relevant to audiology and speech-language pathology (ASHA, 2016d). In 2005, ASHA's National Center for Evidence-Based Practice in Communication Disorders began evaluating available guidelines and systematic reviews for this collection. To assess the guidelines, the center uses a scoring framework called the Appraisal of Guidelines for Research and Evaluation II framework, and systematic reviews are considered against unspecified quality indicators (ASHA, 2016g). It is important to note that only a handful of the guidelines and reviews listed are directly related to hearing loss, with many of them focused on screening for newborns and children.

To further guide the practice patterns for hearing health care, the American Academy of Audiology's Professional Standards and Practices Committee sets and updates standards of practice for the profession. These standards were developed "to define acceptable standards of practice for services" that fall within the scope of practice for audiologists (AAA, 2012, p. 1). The current standards were updated in 2012 and focus on six areas: education, screening, evaluation and diagnosis, treatment, prevention, and research (AAA, 2012). In the late 1990s (1996–1999), ASHA, the American Academy of Audiology, and the VA convened the Joint Audiology Committee on Clinical Practice Algorithms and Statements to establish a consensus on clinical algorithms for audiology. The joint committee used the best available evidence at the time to develop five practice algorithms: overview of audologic services; comprehensive adult audiologic assessment; comprehensive pediatric audiologic assessment; hearing aid selection and fitting; and cochlear implant assessment, programming, and rehabilitation. Each of the algorithms is presented in a decision tree format with an accompanying practice statement that can be used to guide audiologists through the decision-making process for the specified scenarios (Joint Audiology Com-

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Box 3-4 EXAMPLES OF AVAILABLE CLINICAL PRACTICE GUIDELINES AND STANDARDS OF PRACTICE

- **American Academy of Audiology:**
  - Standards of Practice (AAA, 2012)
  - Guidelines for the Audiologic Management of Adult Hearing Impairment (Valente, 2006)
  - Clinical Practice Guidelines Adult Patients with Severe-to-Profound Unilateral Sensorineural Hearing Loss (AAA, 2015)
- **American Academy of Audiology, American Speech-Language-Hearing Association, and Department of Veterans Affairs:** Audiological Clinical Practice Algorithms and Statements (Joint Audiology Committee on Clinical Practice Algorithms and Statements, 2000).
- **American Academy of Otolaryngology—Head and Neck Surgery:**
  - Clinical Guidelines for Tinnitus[a] (Tunkel et al., 2014)
  - Clinical Practice Guideline: Sudden Hearing Loss (Stachler et al., 2012)
  - Clinical Practice Guideline: Cerumen Impaction (Roland et al., 2008)
- **American College of Medical Genetics and Genomics[a]:** Guideline for the Clinical Evaluation and Etiologic Diagnosis of Hearing Loss (Alford et al., 2014)
- **American College of Radiology[a]:** ACR Appropriateness Criteria® for Using Radiological Imaging for Hearing Loss and/or Vertigo (Angtuaco et al., 1996)
- **Royal College of Physicians (United Kingdom):** Hearing and Balance Disorders: Achieving Excellence in Diagnosis and Management (RCP, 2008)
- **Royal College of Speech & Language Therapists Department of Health, National Institute for Clinical Excellence (United Kingdom):** Clinical Guidelines: 5.7 Deafness and Hearing Loss (Taylor-Goh, 2005)
- **U.S. Preventive Services Task Force[a]:** Recommendations on Screening for Hearing Loss in Older Adults (Moyer, 2012)

[a]As of February 2016, these clinical practice guidelines have met the inclusion criteria for the Agency for Healthcare Research and Quality's National Guideline Clearinghouse (AHRQ, 2016).

mittee on Clinical Practice Algorithms and Statements, 2000). Although these algorithms may be useful in guiding practice, they have not been revisited or updated in almost two decades and may not reflect the most current and best available evidence, which is fundamental for ensuring high-quality, evidence-based care.

Guidelines and standards can only be effective if they are consistently applied across practice settings. Despite the online availability of guidelines and standards related to hearing health care, little is known about whether

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health care professionals are aware of these resources, how frequently the resources are taught in health professional education, or how often they are applied in practice settings. The possible impact of these guidelines and standards on improving the quality of care is also unknown. In order to understand the reach and limitations of these resources and to develop strategies to ensure that best practices are implemented, surveys and additional research are needed. As new research findings become available, the guidelines and standards need to be updated to reflect best available evidence. Furthermore, efforts to widely disseminate revised guidance; teach students and health care professionals, including primary care providers, about the existence of the guidelines and how to implement them; and modify practice patterns will also be required to ensure that patients fully benefit from evidence-based practices.

Performance Metrics

Another mechanism for ensuring and promoting high-quality health care is the development, implementation, and analysis of performance metrics, which may also be tied to clinical practice guidelines. As broadly defined by previous Institute of Medicine work, performance metrics "encompass the wide range of measures of health care quality that include measures and indicators of clinical care, health care processes, and patient outcomes and satisfaction" (IOM, 2012a, p. 181). Performance metrics can also be used to increase accountability, enhance transparency, standardize care, and incentivize evidence-based care—all of which contribute to the delivery of high-quality care.

Across the health care landscape in the United States, there is a range of organizations, government agencies, insurers, health care systems, researchers, health professionals, and other stakeholders involved in the development and use of performance metrics. When applied nationally, performance metrics can serve as a basis for accreditation, certification, and pay-for-performance programs. Box 3-5 provides examples of organizations that develop and use performance measures on a national scale in order to improve the quality of health care.

In 2005, ASHA's Working Group on Quality Indicators developed quality indicators for audiology and speech-language pathology programs across a variety of settings (e.g., schools and private practice). The indicators were designed to encourage quality improvement efforts; to provide a framework for developing, reviewing and updating programs; and to educate health professionals, students, and consumers about high-quality care. The indictors are grouped into five areas: purpose and scope of services, service delivery, program operations (e.g., administration, human resources, financial management), program evaluation and performance improvement,

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Box 3-5 EXAMPLES OF PERFORMANCE METRICS

The Joint Commission: The Joint Commission certifies and accredits health care organizations and programs throughout the United States using specific performance measures and standards as a basis of evaluation. The Joint Commission develops certification and accreditation standards by reviewing available evidence and engaging a broad range of experts and stakeholders in the process. Currently, there are more than 21,000 health care organizations and programs that have met The Joint Commission's certification and accreditation standards for quality and safety (The Joint Commission, 2016a,b).

National Committee for Quality Assurance: More than 90 percent of health plans across the United States measure performance using the National Committee for Quality Assurance's Healthcare Effectiveness Data and Information Set (HEDIS). Participating health plans report on 81 HEDIS quality measures that are categorized into five domains and cover a range of health conditions and processes (e.g., breast cancer screening, immunizations, diabetes care, weight management). HEDIS measures are reviewed on an annual basis and retired when they are no longer applicable, ensuring that the measures are always up to date. The National Committee for Quality Assurance also serves as an accreditation and certification body for health care plans and organizations, requiring compliance with various standards (NCQA, 2016a,b,c).

National Quality Forum: The National Quality Forum uses a defined evaluation process in order to build consensus and endorse evidence-based performance measures, which are then catalogued online. Measures that receive endorsement are reviewed every 3 years to ensure the application of the best available evidence. Each year the National Quality Forum's Measure Applications Partnership provides recommendations and guidance to the Department of Health and Human Services on more than 100 performance measures that are being considered for implementations across 16 federal health care programs, including various programs administered by the Centers for Medicare & Medicaid Services (NQF, 2016a,b,c).

and ethics (ASHA, 2005). As with the discussion of the clinical practice guidelines and standards above, it is difficult to know how these indicators are applied and what impact they have on quality, and it appears that they have not been revisited in more than a decade.

To further promote and ensure the delivery of high-quality care, the Centers for Medicare & Medicaid Services (CMS) launched a voluntary incentive program in 2006 called the Physician Quality Reporting System (PQRS) (formerly the Physician Quality Reporting Initiative), which has implemented performance metrics within the Medicare program. Physicians and various types of practitioners and therapists—including audiologists and speech-language therapists—who provide care to Medicare patients

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under Medicare Part B's Medicare Physician Fee Schedule are eligible to participate in the PQRS program (CMS, 2016a). The program has evolved through various legislative actions. For example, the Medicare Improvement for Patients and Providers Act of 2008 made the PQRS program permanent and required CMS to report online the participation in the program and some performance measures (AMA, 2015; CMS, 2016c). Additionally, the Patient Protection and Affordable Care Act of 2010 shifted the paradigm of the PQRS program so that, beginning in 2015, increasing penalties for nonparticipation were included rather than incentive payments for voluntary reporting of quality measures (AMA, 2015). In 2016 health care professionals and group practices are required to choose and report on at least nine individual measures and one crosscutting measure from a list of available measures for at least half of all Medicare patient appointments. Selected measures can be reported via Medicare billing claims, a registry-based reporting system, or certified electronic health records (CMS, 2016b). There is a 2-year gap between reporting and possible penalties; for example, health professionals and group practices that did not meet the 2015 requirements will see a downward adjustment in 2017 (AMA, 2015; CMS, 2015).

Because of the possible impact of PQRS requirements on the practice of audiology, 10 audiology organizations[9] came together to form the Audiology Quality Consortium. The consortium develops possible quality measures for PQRS inclusion, monitors the PQRS program and quality measures, responds to proposed changes in the PQRS program, and provides education and guidance on PQRS requirements to audiologists. The consortium also maintains a website[10] that lists the applicable PQRS measures and codes (e.g., Current Procedural Terminology [CPT®], *International Classification of Diseases*, G-codes) for audiologists, provides claims forms, and offers other helpful resources (AQC, 2016a,b). The six PQRS measures relevant to audiology that are currently listed on the consortium's website are (1) documenting current medications, (2) screening for depression, (3) risk assessment for falls, (4) care planning for falls, (5) screening and preventative care for tobacco use, and (6) referral for patients with acute or chronic dizziness (AQC, 2016b). As noted by the consortium, under the 2016 PQRS requirements, audiologists are required to report on all three of the crosscutting measures (i.e., medications, depression screening, and tobacco use), rather than only one, because there are fewer than nine individual quality measures that apply to audiology (AQC, 2016c).

[9] Academy of Doctors of Audiology, Academy of Rehabilitative Audiology, American Academy of Audiology, American Academy of Private Practice in Speech Pathology and Audiology, American Speech–Language–Hearing Association, Association of VA Audiologists, Directors of Speech and Hearing Programs in State Health and Welfare Agencies, Educational Audiology Association, Military Audiology Association, and National Hearing Conservation Association.

[10] See http://audiologyquality.org.

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Audiologists who provide services to fewer than 15 Medicare beneficiaries in a year are exempt from PQRS reporting.

The National Quality Forum estimates that by 2017 approximately 90 percent of Medicare payments will be tied to some form of performance metric (NQF, 2016c). It is becoming clear that performance metrics are driving change in the landscape of health care quality in the United States—within Medicare and beyond—and will also play a role in how hearing health care is delivered in the future. As electronic health records continue to be implemented and evolve, performance metrics and clinical pathways or algorithms will be integrated and used to inform and maximize the quality of care provided. Thus, it is essential that collaborative action, such as that of the Audiology Quality Consortium, be taken in order to develop clearly defined, evidence-based performance metrics that can be adopted for ensuring high-quality hearing health care.

Continuous Quality Improvement

Continuous quality improvement (CQI) is a process- and data-oriented mechanism that is used to enhance the quality of health care delivery and promote excellence. CQI efforts involve "capturing, analyzing, and regularly reporting data; translating the data and resulting information into actionable opportunities to improve performance at the local level; and developing plans for process changes that will further support effective, efficient, and value-added interventions" (IOM, 2015b, p. 338). Like performance metrics, CQI programs are becoming more commonplace among health care systems across the United States, as accreditation bodies (e.g., The Joint Commission, the National Committee for Quality Assurance) continue to emphasize measuring outcomes and CQI processes as part of their accreditation standards. ASHA developed the National Outcomes Measurement System with the goal of collecting and analyzing national outcomes data on the effectiveness of speech-language pathology and audiology services. The initial work focused on speech-language pathology outcomes, but efforts are under way to expand this work into audiology services (ASHA, 2016h; Mullen, 2003; Mullen and Schooling, 2010).

Within the field of hearing health care, the application of CQI principles and programs also holds promise for improving the quality and efficiency of care that patients receive. Under the research section of the American Academy of Audiology's standards of practice, audiologists are called on to measure and evaluate clinical outcomes and to update practice policies and procedures as part of CQI efforts (AAA, 2012). Recently published literature that was centered on the use of CQI in hearing health care appears to be limited and has primarily focused on newborn screening programs (e.g., Deem et al., 2012) and administrative processes, such as

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appointment management (e.g., Huddle et al., 2016). For audiologists and other health professionals who would like to implement CQI strategies in their practices, there are numerous resources and guides available (ASHA, 2016d; HRSA, 2016b; IHI, 2016; Taylor, 2013). Successful CQI efforts require proactive leadership, a culture of continuous learning, measurable outcomes, a reliable platform for ongoing data collection and analysis, opportunities to share feedback and exchange ideas, and strategies to implement necessary change (IOM, 2015b).

Summary

Measuring and improving the quality of hearing health care necessitates buy-in and collaborative effort among researchers, health professionals, health systems, insurers, advocacy organizations, people with hearing loss and their families, and experts in performance metrics and health care quality improvement. As described throughout this section, high-quality hearing health care is a multifaceted goal that can be promoted and accomplished through the development and implementation of mechanisms such as clinical practice guidelines and standards of practice, performance metrics, and continuous quality improvement efforts. However, guidelines, standards, and metrics must be regularly reviewed and updated to ensure that the most recent evidence is translated into best practices. Additionally, once guidelines, standards, and metrics are defined and deployed, a range of strategies—e.g., dissemination, education, and incentives and/or penalties—may be necessary to ensure uptake and implementation by hearing health care professionals.

Overcome Disparities in Services Delivery and Access

Disparities in health care can be defined as inequities in access to care or in quality of care (IOM, 2003). These disparities may contribute to differences in health outcomes across groups of individuals by race, ethnicity, income, education, age, and place of residence, among others. This section addresses the challenges to access and quality for underserved and vulnerable populations of adults with hearing loss, geographical disparities in the location of hearing health care providers, and issues of racial/ethnic and linguistic diversity in the professional workforce serving adults with hearing loss. Expanded health services research is needed to improve understanding of hearing health care disparities and to investigate how economic, racial, cultural, gender, and age-related factors may influence hearing health care use and patient-centered outcomes.

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Socioeconomic, Racial, and Ethnic Disparities

A large proportion of the U.S. adult population has not had a recent hearing test (see earlier section on hearing health care utilization). Furthermore, many adults who have hearing loss and may benefit from using hearing aids are not using the devices (see Chapter 4). Only limited evidence is available on the use of hearing health care services by low-income adults and racial and ethnic minorities. Individuals living at or below the federal poverty level were found to be less likely to access hearing health care in the form of using hearing aids than individuals in higher-income populations (Bainbridge and Ramachandran, 2014). African Americans and Mexican Americans are also less likely to report using hearing aids than non-Hispanic White Americans (Lee et al., 1991; Nieman et al., 2016; Pugh, 2004), although one of those studies (Nieman et al., 2016) found that after adjusting for hearing loss, there were no significant differences for African Americans. Full exploration and analysis of the causes and effects of these findings have been hindered by the lack of hearing aid–using adults from racial/ethnic minorities being included in epidemiological studies (see Chapters 2 and 4). Researchers and funding agencies have called for more study of culture-specific interventions to better meet the needs of Hispanic Americans and African Americans (Donahue et al., 2010; Lee et al., 1991; Pugh, 2004). Ongoing research funded by the National Institutes of Health is targeted toward developing affordable and accessible interventions for hearing loss to meet the unique needs of older adults from racial/ethnic minorities.

Older Adults in Long-Term Care Facilities

Obtaining adequate hearing health care can also be challenging for the approximately 1.4 million older Americans who reside in nursing homes or other long-term care facilities (Cohen-Mansfield and Infeld, 2006; Harris-Kojetin et al., 2013). Several cross-sectional studies have shown that although the majority of older adults in nursing homes have hearing loss and many of them might benefit from hearing aids, only 14 to 30 percent of these residents use hearing aids (Cohen-Mansfield and Taylor, 2004a; Culbertson et al., 2004; Jerger et al., 1995). Potential barriers to hearing aid use among residents of nursing homes include individual-specific factors such as manual dexterity challenges that limit the use of hearing aids without assistance; institutional factors, such as a lack of knowledge among staff and a lack of care procedures to assist and support resident communication; and societal factors such as high costs of hearing aids (Carson and Pichora-Fuller, 1997; Cohen-Mansfield and Taylor, 2004b). Furthermore, hearing loss may be under-reported by residents of nursing homes and under-recognized by staff in the absence of objective screening

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measures (Cohen-Mansfield and Taylor, 2004a; Corbin et al., 1984; Hoek et al., 1997). An additional challenge for staff and family members is to distinguish miscommunication related to hearing loss from miscommunication related to dementia (Haque et al., 2012; Slaughter et al., 2014). In one study of nursing home residents who used hearing aids, the vast majority (86 percent) needed help with the use and care of the devices, especially changing batteries, and the incidence of problems was high, with approximately two-thirds (69 percent) of hearing aids that belonged to the residents malfunctioning, and nearly half of the staff not having any training in how to use or maintain the devices (Cohen-Mansfield and Taylor, 2004b).

Further development of learning objectives and curriculum regarding hearing health care is needed across multiple disciplines, both within professional training programs and the continuing education of those who work with older adults in long-term care settings, to address the access, follow-up, and quality improvement challenges. A number of continuing education opportunities are regularly available to audiologists on issues related to geriatrics and aging through audiology professional organizations. Limited large-scale research exists on the impact of continuing education and interprofessional training on improving hearing health outcomes, but several examples in the literature have shown positive effects for residents and employees of long-term care institutions (Cohen-Mansfield and Taylor, 2004b; Hoek et al., 1997; Jennings and Head, 1994; Linssen et al., 2013; Robertson et al., 1997). Guidelines for delivery of audiology services in nursing homes were developed by ASHA and include discussion of the potential value of using a variety of hearing assistive technologies in addition to hearing aids (ASHA, 1997). Twenty years later, challenges persist. It is noteworthy that with more older adults choosing to stay in their homes as they age rather than move into long-term care facilities, some of the challenges highlighted in this section will also apply to individuals living in settings other than long-term care facilities.

Rural Populations

A higher percentage of older adults live in rural than in urban areas, and analyses of population changes suggest a migration of baby boomers to rural and small-town communities (Cromartie and Nelson, 2009). One factor that may affect access to hearing health care for rural populations is practice location. Residents of rural areas may not have a choice among providers or may have to travel greater distances than their urban-dwelling peers to access health services or in-network providers.

Further research is needed into the rural health issues potentially affecting hearing health care utilization and the unique needs of rural populations. Older adults in rural communities perceive a number of barriers to

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general health care access, including problems with transportation, limited health care supply, a lack of quality care, social isolation, and financial challenges (Goins et al., 2005; IOM, 2006c). There is also evidence that older adults in rural areas are more socially isolated than older adults living in urban areas, with the suggestion that infrastructure and health care providers should plan for rural older adults' needs and prevent isolation (Baernholdt et al., 2012). Given the potential association between hearing loss and social isolation in older adults (Mick et al., 2014), greater attention to the hearing health care needs of rural older adults may be an important consideration. Evidence of successful rural hearing health promotion programs from other countries suggests this may be a promising approach. For example, the development of a sensory support center in rural Scotland reduced social isolation and increased the functional independence of older adults (Smith et al., 2015) and the Farmsafe Australia project increased access to screening services in farming communities (Lower et al., 2010). Existing programs to address hearing conservation among farming communities, which have focused on young farmers (e.g., Ehlers and Graydon, 2011), might provide a bridge to increase rural community awareness on hearing health issues in the United States (see also Chapter 6). Tele-audiology programs at the VA and Alaska Federal Health Care Access Network have also been developed and implemented to begin to address rural health needs (Jacobs and Saunders, 2014) (see later section in this chapter for more information on tele-audiology).

Audiology Workforce Diversity

Racial and ethnic diversity within the hearing health care workforce is limited. Although not all audiologists are members of ASHA, member counts provide data that cover most of the audiology workforce. Racial data from a dues notice survey conducted in 2012 showed that of the audiologists certified by ASHA in audiology only, approximately 92 percent were white Caucasian and 3 percent were Hispanic/Latino (see Table 3-4; ASHA, 2016c). The most recent available data on gender are from the dues notice survey conducted in 2009, indicating a primarily female audiology workforce (84.6 percent of 11,867 respondents) (ASHA, 2016c).

These data are similar to demographic data from other health care professions. For example, Sánchez and colleagues (2015) note that even though the Latino population is the second-fastest growing nonwhite population in the United States, there has not been growth in the number of Latino physicians. Furthermore, nurses from minority backgrounds represent only 19 percent of the nursing workforce (American Association of Colleges of Nursing, 2015). At the same time, the United States is undergoing major demographic shifts that are projected to result in more than half of the

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TABLE 3-4
Profile of American Speech-Language-Hearing Association Member and Nonmember Certificate Holders in Audiology Only, by Race and Ethnicity

Race	Percentage (n = 9,270)
American Indian or Alaska Native	0.2%
Asian	3.3%
Black or African American	2.4%
Native Hawaiian or other Pacific Islander	0.1%
White	92.1%
Multiracial	1.8%
Ethnicity	**Percentage (n = 9,837)**
Hispanic or Latino	3.1%
Not Hispanic or Latino	96.9%

SOURCE: ASHA, 2016c. Printed with permission from ASHA.

country's population being from minority populations by 2044 (Colby and Ortman, 2014). It is not simply in the audiology workforce, then, that the match between health care professionals and the U.S. population is out of balance.

This shortage of health care professionals from minority communities has serious implications for health care access as well as health care outcomes. According to the Sullivan Commission report (2004), "studies suggest that increasing the diversity of the health workforce can improve patient access, patient satisfaction, and improve quality of life for all patients" (p. 15). More specifically, minority patients report better communication with their providers when the patient and the provider are from the same racial/ethnic group. Minority group patients tend to prefer physicians from their same racial/ethnic background and report higher levels of satisfaction when this occurs (Sullivan Commission, 2004).

Equally important to improving access to care is the promotion and support of increasing the number of providers in underserved communities. Zayas and McGuigan (2006) report that half of the medical school graduates expecting to practice in medically underserved areas are African American. A 2002 survey found that 45 percent of Hispanic/Latino dental school student seniors planned to provide dental care to underserved populations after graduation (Sullivan Commission, 2004) while another study found Latino physicians to be more likely to provide health care for Latino communities

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and for populations that are medically underserved (Sánchez et al., 2015). Given minority patients' preference for race-concordant health care professionals, increasing diversity in the hearing health care workforce has the potential to help reduce racial and ethnic hearing health care disparities.

This lack of diversity is unlikely to change in the near term due to the lack of diversity in the current audiology student population. Table 3-5 provides enrollment data for students in audiology graduate degree programs. In the 2013–2014 academic year, 69 out of 75 doctorate graduate degree programs in audiology responded to the Communication Sciences and Disorders Education Survey (CAPCSD and ASHA, 2015). According to the survey results, the clinical doctorate, entry-level programs had a total of 1,781 white Caucasian students (87.35 percent), 205 racial/ethnic minority students (noninternational, 10.05 percent), and 53 international students (2.6 percent). The group was also predominantly female (84.7 percent). The limited gender, racial, and ethnic diversity among recent graduates and enrolled students demonstrates that the audiology workforce will not mirror the gender and racial/ethnic diversity of the U.S. population with hearing loss for the foreseeable future. Recruitment and retention of diverse students to professional training programs in hearing health care would likely boost the diversity in the hearing health care workforce over time.

Increasing the diversity in the hearing health care clinical and research workforce has a number of benefits similar to increasing the diversity in other areas of health care, including increasing access to health services, improving equity (Cohen et al., 2002; IOM, 2003; Valantine and Collins, 2015), increasing patient satisfaction, and ensuring better patient communication with providers.

TABLE 3-5
Total Enrollment in Audiology Graduate Degree Programs for the Clinical and Research Doctorates by Gender and Race/Ethnicity, 2013–2014

Audiology Graduate Degree Program	Male	Female	White	Racial/Ethnic Minority (Non-International)	International
Clinical doctorate: entry-level	312 (15.3%)	1,727 (84.7%)	1,781 (87.35%)	205 (10.05%)	53 (2.6%)
Clinical doctorate: post-entry level	27 (28.42%)	68 (71.58%)	46 (48.42%)	5 (5.26%)	44 (46.32%)
Research doctorate	15 (23.44%)	49 (76.56%)	41 (64.06%)	6 (9.38%)	17 (26.56%)

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Linguistic diversity also affects audiologic care and management because language proficiency can affect performance on some clinical tests of speech recognition and outcomes (Reel et al., 2015; Warzybok et al., 2015). Data from ASHA's 2015 member counts indicated 726 ASHA-certified audiologists self-identified as bilingual service providers, as defined by native or near-native proficiency in a second language. Of these bilingual audiologists, 266 ASHA-certified audiologists were Spanish-language service providers. State-level data indicated that the most bilingual ASHA-certified audiologists living in the United States were located in California, Florida, New York, and Texas. In 6 states, there were 10 or fewer bilingual service providers (ASHA, 2016e). International efforts are under way to develop valid and reliable multilingual test materials (Akeroyd et al., 2015). Academic and clinical training in cultural competency is required within audiology training programs (ASHA, 2014, 2016i). Cultural competencies are part of the knowledge and skills for national certification in audiology from both ASHA and the American Board of Audiology (ASHA, 2004).

The workforce and student enrollment data suggest the need for training programs and professional organizations to develop strategies to recruit and retain minority and bilingual audiologists and other hearing health care professionals. Enhancing and sustaining diversity in the hearing health care workforce will likely require the efforts of multiple stakeholders. Valuing cultural sensitivity and diversity is within the strategic plans and core values of audiology professional organizations (AAA, 2016; ASHA, 2016j). Increasing diversity among the audiology workforce is a stated goal of ASHA's Envisioned Future 2025, both for gender and multicultural diversity. Funding to promote diversity in the hearing health research workforce is available through administrative supplements and individual training fellowships through the National Institute on Deafness and Other Communication Disorders (NIH, 2015; Valantine and Collins, 2015). However, there are no current, clear mechanisms targeted to increase the workforce diversity among audiologists or other hearing health care professionals. Incentive programs, such as tuition reimbursement used for those practicing in other areas of health care, might help diversify the hearing health care workforce. Strengthening cultural competency training and programs is another area that could help the hearing health care workforce fully address the issue of providing high-quality services to diverse and underserved populations (Awosogba et al., 2013; Shaya and Gbarayor, 2006).

Improve and Expand Use of Auditory Rehabilitation Programs

Although consumer organizations (e.g., the Hearing Loss Association of America and AARP) are actively engaged in advocating for the use of auditory rehabilitation and patient choice for hearing health care, reha-

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bilitation programs, such as those described earlier in this chapter, are not widely available (Hawkins, 2005; Sweetow and Palmer, 2005; Thorén et al., 2011). Furthermore, little is known about what proportion of people diagnosed with hearing loss participate in such programs, despite supportive expert opinion across the field. In their literature review, Sweetow and Palmer (2005) indicated that the use of rehabilitation services by audiologists decreased in the 20 years preceding their work due to a number of factors, including a lack of reimbursement and time constraints.

The available evidence supporting auditory rehabilitation programs is generally favorable (see the section on auditory rehabilitation earlier in this chapter) and suggests that these types of programs would likely provide some short-term benefits (Chisolm and Arnold, 2012). However, the evidence is neither robust nor definitive. Reviews of both auditory training and counseling-based, supportive rehabilitation programs describe variability across individuals in terms of outcomes and possible benefits (Chisolm and Arnold, 2012; Hawkins, 2005; Henshaw and Ferguson, 2013; Saunders et al., 2016; Sweetow and Palmer, 2005). This variability may be the result of individual differences (e.g., baseline performance, functional abilities, communication needs, age, severity of hearing loss, motivation, support). These differences require audiologists and health professionals to match individuals with specific interventions—both rehabilitation services and technologies—in order to optimize the outcomes (Abrams and Chisolm, 2013). The development of metrics and biomarkers that could predict which individuals would benefit most from which interventions would greatly simplify decisions about appropriate hearing health care options. In advising their patients, audiologists and health professionals also need to consider the timing of rehabilitation programs. Studies have concluded that the first few weeks to the first few months of hearing aid adoption represent the timeframe when usage patterns are established (Dillon, 2012; Laplante-Lévesque et al., 2014; Ng and Loke, 2015). Also, individuals with new hearing aids are typically encouraged to schedule follow-up appointments within the first 6 months or sooner, as needed. Therefore, this may be a timeframe during which individuals' information needs and receptiveness to rehabilitation efforts are heightened.

In the design phase of auditory rehabilitation programs, there are a number of foundational principles that could be used to promote successful uptake. For example, these programs should be designed to

- meet the needs and individual preferences of the person with hearing loss;
- be cost effective for both individuals and the care provider;
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- be interactive;
- provide sufficient feedback and reinforcement; and
- provide perceived value and positive outcomes to the user (Boothroyd, 2010; Henshaw et al., 2015; Laplante-Lévesque et al., 2010; Sweetow and Palmer, 2005; Sweetow and Sabes, 2006).

To promote wider acceptance and implementation of auditory rehabilitation programs, the efficacy and efficiency of the programs should be evaluated in a large-scale, long-term, and systematic way, using standardized outcome measures whenever possible in order to fully meet tests of scientific rigor. The evidence base needs to be bolstered and widely disseminated, and additional research efforts need to determine which individuals will derive the greatest benefit from these programs. Additionally, steps to expand the use of evidence-based auditory rehabilitation programs need to be taken, including the use of large-scale pilot programs. Where evidence-based programs are available, audiologists, health professionals, and advocacy organizations need to be aware of them and be encouraged to recommend them to their patients and constituents.

Develop and Evaluate Innovative Models of Hearing Health Care Delivery

As described earlier in this chapter, obtaining treatment for hearing loss in the United States generally follows a medical model of clinic-based care in which an individual visits a hearing health care professional for diagnostic evaluation, assessment, and care. While this model may be necessary for individuals with medical conditions requiring care by an otolaryngologist or for individuals with complex or more severe forms of hearing loss, this level of care may not always be required for all adults with hearing loss (AAA, 2006; Valente, 2006). For example, an individual with a longstanding age-related hearing loss that only moderately interferes with daily functioning may be reluctant to commit the resources and time needed to pursue this level of care given the multitude of steps required to obtain basic amplification (Cox et al., 2014; Donahue et al., 2010).

Alternative care models for other types of common and chronic medical conditions (e.g., presbyopia, diabetes, etc.) have rapidly expanded with the use of community health workers and retail clinics located in drugstores to complement the traditional medical model of care (Iglehart, 2015; Perry et al., 2014; Villaseñor and Krouse, 2016). Although these and other alternative models of care have not yet been widely used or investigated for hearing loss management specifically, these options may provide effective models for delivering more hearing health care to more people (see below and Chapter 5). In order to maximize the potential of these innovative

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models and ensure that they are implemented where appropriate and most effective, the models will need to be evaluated for possible risks to safety, quality, value, and cost effectiveness.

Community Health Workers

A community health worker has been defined as a public health worker who is a trusted member of the community or who has an unusually close understanding of the community served (APHA, 2016). They can implement programs for and conduct outreach to community members with the goal of promoting, maintaining, and improving individual and community health (BLS, 2016). Community health workers have been used in many other health care sectors to increase access to care, improve the use of health services, and enhance successful chronic disease prevention and management (Johnson et al., 2012; Perry and Zulliger, 2012; Rosenthal et al., 2010). They may be trained and supervised in the provision of basic services to the community and serve as liaisons between the health care system and the community.

With regard to hearing health care in global settings, community health workers have been taught skills in basic audiometry using automated or manual audiometers, which can use a widely accepted threshold-finding algorithm (the modified Hughson-Westlake bracketing procedure) to generate an audiogram that meets current calibration standards and is consistent with ASHA guidelines (Shaw, 2015). Community health workers have also dispensed basic hearing assistive technology that may be pre-programmed or "ready-to-wear" (WWH, 2016).

Community health workers have the potential to play a role in helping an individual and his or her family cope with hearing loss as a chronic condition, potentially by teaching them about hearing strategies and effective communication skills, maximizing the use of hearing aids by pairing them with other assistive products and with other communications and emergency alert systems (see Chapter 4), and understanding their rights through disability and other relevant policies and laws. Basic hearing assessments might be able to be performed at the community clinic or in the home. In order to serve as an effective tool for community health workers, audiometric equipment should be reasonably priced, portable, and easy to use; and it should be calibrated according to American National Standards Institute specifications and any relevant state requirements. Quality assurance, adequate supervision, and ongoing training would also be important considerations. More research will be needed on the development of potential roles for integrating community health workers into hearing health care teams.

The community health worker model is also consistent with the trend toward providing initial health care services closer to the patient's residence,

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rather than requiring the patient to engage the health care system in large, complex facilities, such as academic medical centers and full-service outpatient clinics and hospitals. There is evidence that community health workers can successfully facilitate access to health care for subpopulations and deliver health education in a culturally appropriate manner (Brownstein et al., 2007; Ingram et al., 2012; Postma et al., 2009; Staten et al., 2012). Community health workers could serve as a conduit and liaison to the hearing health care system and the health care system as a whole. Given the prevalence of hearing loss in the United States and the multiple follow-up visits that are often needed for comprehensive hearing health care, community health workers offer a potentially beneficial mode of extending hearing health care to a broader segment of the U.S. population, and additional research is needed to further explore this model. Chapter 5 discusses the potential costs associated with the use of community health workers as well as possible reimbursement challenges and opportunities of this model.

Mobile Health Applications

Mobile health, or mHealth (and now "connected health"), typically refers to the use of mobile and wireless technologies to improve the delivery of health care to patients and to improve health and behavioral outcomes and prevention. Together with biological sensors that can collect and store data, these technologies have the potential to add value to hearing health care delivery and hearing health outcomes (HIMSS, 2016; WHO, 2011).

In an effort to improve health care delivery, mHealth applications and intelligent communication systems have been developed to increase access for patients by providing links to health care providers for reviews of symptoms, remote application of diagnostic tools, and ongoing medical management and treatment. In addition to tools that provide remote access for patients to health care providers through smartphones and tablets, diagnostic tools have been developed for mobile devices and their high-quality built-in cameras, microphones, and loudspeakers (Weinstein et al., 2014). Given the need for delivering and recording sound when providing hearing health care, these advances in mobile technologies expand the suite of options for hearing health care to include mHealth. Thanks to their portability, ease of use, and potential to lower costs, mobile devices can serve critical roles for delivery of hearing health care to underserved populations, military conflict locations, rural and remote regions, and low- and middle-income areas of the United States (Källander et al., 2013; Osborn and Mulvaney, 2013; Pew Research Center, 2015). These technologies can be used in real time to (1) perform an otologic examination (as with an otoscope); (2) assess the magnitude of hearing loss; (3) determine an individual's ability to understand speech against various backgrounds (using a

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digits-in-noise or similar task); (4) perform a self-assessment of communication skills; (5) conduct self-paced speech-perception training or listening and communication training; and (6) engage with others in peer-support groups for patients and family members (Moren, 2014; Olson, 2015). Smartphone apps have recently become available that enable individuals to systematically adjust the gain and frequency response of their hearing aids during the hearing-aid selection process, with the assistance of their audiologist (Paglialonga et al., 2015). Evaluations of these various uses in improving hearing health care are critical.

Some applications are designed to be used without direct access to hearing health care providers and instead employ algorithms that evaluate images (such as audiograms or the results of video otoscopy), determine diagnoses, and recommend treatments or referral (Hussein et al., 2015). Applications are also available to determine if patients' hearing aids are in good working order, to allow audiologists to remotely set certain hearing aid features, and to enable individuals to adjust their own hearing aids as they move in and out of different environments (Picou, 2014). In the immediate future, self-fit or pre-programmed hearing aids will become more widely available, and these options could be fit with the assistance of a smartphone app and a remote connection to an audiologist (as needed) (Romano, 2014). However, just as each individual's hearing loss and hearing needs are unique, a self-fit or pre-programmed option may work well for some and not for others.

Mobile technologies and wearable devices are creating new opportunities for personal health monitoring, tracking, and management, which in turn should lead to improved health behaviors, outcomes, and prevention and also reduced health risks (Bastawrous and Armstrong, 2013; Hall et al., 2015). These devices make it possible to apply mobile technologies to personal or family activities related to health and wellness, which can include communication abilities. At the same time, they can monitor the indoor environment, such as levels of environmental noise. Some devices can serve as health assistive technologies, including for hearing and communication. The large amount of data collected and aggregated by devices creates potential options for health assessments and might be adapted to improve communication-related outcomes (Gay and Leijdekkers, 2015). Because technology advances quickly, the development of many more uses for mHealth in hearing health care is likely.

Research on the benefits, risks, and cost effectiveness of mHealth is lagging behind the use of mHealth technologies by consumers. Research questions for mHealth systems science concern the technologies' efficacy, or the extent to which the use of mobile technologies improve health and wellness outcomes, as well as the validity and reliability of mHealth technologies (Conroy et al., 2014; Knight et al., 2015; Payne et al., 2015; Stoyanov et

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al., 2015; Yang et al., 2015). Evidence of the effects of mobile technologies and mobile networks on access to hearing health care across demographic groups is also needed. It will also be of interest to determine how mHealth technologies can best be deployed to motivate people to engage in healthy behaviors related to hearing and communication and the impact of changing communication patterns between patients and providers. Other questions include (1) the effects on the hearing health care provider workforce; (2) the need for regulatory controls to ensure information privacy, confidentiality, and security of mHealth data; (3) the risks to user safety from health behavior and engineering perspectives; and (4) technical challenges, such as the need for interoperability among networks. Because research is already lagging behind consumer use, and because technology evolves quickly, it is critical that research into mHealth use for hearing care be given much more attention (Bastawrous and Armstrong, 2013).

Tele-Audiology

One of the earliest forms of "connected health" was telehealth, which is the exchange of health information across remote sites through various forms of telecommunication technologies, such as smartphones, live video conferencing, asynchronous (cloud-based) services for the "store-and-forward" communication of records, email, and other forms of wireless communication. These systems have been used in some form for decades, primarily to connect hospitals in large urban centers to rural areas where health care services may be limited (especially specialty services), with the goals of improving access, reducing cost, and increasing efficiency, while maintaining the quality of care. The use of telehealth technologies has grown rapidly in recent years due to the widespread availability of Wi-Fi and Internet access to support these services. Telehealth options are now available beyond hospitals, such as in private practice offices, assisted living centers, business centers, and patients' homes.

As telehealth has grown, tele-audiology services provided by audiologists have become more widely available in some areas, according to a professional association survey (ASHA, 2016a). Tele-audiology fills a specific need for people who live in rural areas, for those who do not have transportation or are not physically able to travel to obtain audiology services, and for those who move to other locations and wish to maintain a relationship with their hearing health care provider. Current tele-audiology technologies provide capabilities for audiometry, obtaining case histories and completing self-report questionnaires, Web-based support groups, professional-to-professional communication, hearing screening, auditory rehabilitation programs, video otoscopy, and the programming of hearing aids.

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One of the leading users of tele-audiology services is the VA, which serves a large number of patients who live outside urban areas and far from VA medical centers (West et al., 2010). Access to audiology services is provided by 455 VA clinical facilities and 132 sites with telehealth carts containing audiology equipment; more than 16,000 tele-audiology patient encounters were completed in fiscal year 2014 (Chandler, 2015). A pilot program launched in 2009 used community-based outpatient clinics as tele-audiology sites and focused on the remote programming of hearing aids. Starting from 10 pilot sites, the program has expanded to 71 sites across the country and has evolved to include remote audiometry with calibration capabilities. Tele-audiology outcomes in the VA are reported to be as good as or better than traditional face-to-face encounters (Beck, 2015). Among the innovative tele-audiology technologies that may increase access in the future are home hearing tests, the scanning and transmission of ear canal images, and the programming of hearing aids in the home through smartphones or tablet computers. The VA has demonstrated that tele-audiology can be a successful program (Gladden et al., 2015). In order to realize the full potential of tele-audiology services, a number of questions will need to be resolved, including how to ensure the accuracy, reliability, and quality of diagnostic evaluations; how to provide high-quality communications between patients and providers; how to confirm patients' understanding of the results; and how to promote patients' acceptance of technologies and auditory rehabilitation services. Questions also remain regarding the costs of the required technologies; cost effectiveness of telehealth and tele-audiology (see Chapter 5); maintenance of confidentiality; and data security. There may also be challenges connected to state licensure laws—e.g., if a hearing health care professional provides care via tele-audiology to a patient located in another state; possible effects on malpractice risk; and reimbursement regulations (see Chapter 5).

Retail Clinics

Among the newest innovations in health care delivery is the trend to provide simple services at lower cost using new technology, staff with less training (e.g., less expensive providers), and increased automation through the use of strict protocols, algorithms, and clinical practice guidelines. As has been the case with the remote services provided by mHealth applications and telehealth, in-person health care visits at sites other than traditional provider offices (such as retail clinics) have been growing in popularity. For example, there were an estimated 10.5 million visits at retail clinics in 2012 (Bachrach et al., 2015). These in-person visits at community locations provide many of the same benefits as remote services (mHealth and telehealth), including decreased overall costs, lower overhead, reduced

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patient out-of-pocket costs, improved access, increased efficiency, and reasonably short wait times (Salinsky, 2009; Thygeson et al., 2008). Furthermore, although retail clinics were originally viewed as a place to provide basic care for health concerns that were not likely to require follow-up care (e.g., sore throat, ear infection, urinary tract infection, flu vaccination), these clinics are evolving to also manage chronic conditions (e.g., diabetes) (Bachrach et al., 2015). Some evidence suggests that the quality of care in retail clinics is the same as, or better than, that provided in physician offices, urgent care clinics, and emergency departments while the per-episode costs are lower (Mehrotra et al., 2009). Customer satisfaction with retail clinics has been reported to be high. In one national online survey, nearly 80 percent of respondents who had been to a retail clinic rated their experience as being the same as or better than previous interactions with a traditional site of care (Smith et al., 2016). In the same survey, one quarter of respondents reported that they would be willing to use a retail clinic to manage a chronic condition (Smith et al., 2016). However, thus far, retail clinics appear to attract a younger population of patients who do not have existing relationships with primary care providers, which may increase overall utilization but may not improve access to underserved communities or older adults (Mehrotra, 2015).

Within the realm of hearing health care, retail clinics are beginning to explore opportunities to gain a share of the market and expand services for hearing loss. For example, in 2014, Walgreens (with 8,000 locations in the United States) merged with Alliance Boots (a large pharmacy chain based in the United Kingdom) to form Walgreens Boots Alliance. In the United Kingdom, Alliance Boots manages approximately 390 hearing care practices within its pharmacies (SEC, 2014). Since the companies joined forces, Walgreens launched an evaluation of a concept for offering hearing health care services and technologies within its pharmacies at four locations in the United States: Chicago, Dallas, Orlando, and Phoenix (Taylor, 2015). Connect Hearing (Sonova) is working with Walgreens to manage the hearing aid satellite clinics at these four locations, but no decision on future activities between the two companies beyond this limited time project has been announced. In addition to this pilot, Costco Wholesale has opened hearing aid centers in approximately 500 of its warehouses across the United States (see Chapter 5 for additional discussion of the Costco Wholesale model). It remains to be seen whether these clinics are successful in terms of health outcomes, consumer satisfaction, and improving accessibility and affordability. Chapter 5 discusses cost and reimbursement for care that is provided in retail settings.

Research on retail clinics is limited, and little is known about their effects on quality (a potential problem because of the limited availability of local supervision), their impact on long-term outcomes and follow-up

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care, or their effects on downstream costs (Iglehart, 2015). In order to integrate retail clinics into the hearing health care system and maximize their value for people who have hearing loss, the clinics will need supporting technology and infrastructure to provide basic levels of hearing health care. Care providers who work in retail clinics will need training and support to perform hearing tests, discuss treatment options with patients, and serve as a link to the health care system when referrals are needed for follow-up care.

Summary

The emergence of innovative models of hearing health care and hearing technologies (described in Chapter 4) necessitates research to investigate the relative risks and benefits of these new approaches in comparison to the traditional models of hearing health care delivery, which include hearing aids that are dispensed by hearing health care professionals. A 2009 IOM report that identified priorities for comparative effectiveness research highlighted the importance of investigating and understanding different hearing loss treatments as a priority (IOM, 2009). Since the release of that report, there has been scant new published research investigating these treatment options, particularly on broader and more critical patient-centered outcomes. While there have been several studies on tele-audiology (Blamey et al., 2015), there has been limited research on other hearing health care delivery models (e.g., community health workers, retail clinics) or on direct comparison of different technologies (e.g., over-the-counter devices, high- versus low-end hearing aids) (Cox et al., 2014). Comparative effectiveness research needs to focus on patient-centered outcomes, such as the benefit to real-world communicative function and health-related quality of life, rather than focus on traditional audiologic outcomes, such as hearing and speech tests that are performed in a sound-treated booth.

Examine the Medicare Requirement for Physician Referral for Diagnostic Hearing Testing

The pathway by which an individual enters the hearing health care system can depend on whether that person has insurance coverage that dictates the terms for reimbursement. Individuals who do not have hearing health care insurance coverage can enter the hearing health care system by seeing an audiologist without first obtaining a referral from a physician or non-physician medical practitioner and pay for all of the services out of pocket, i.e., without reimbursement. Being able to see an audiologist without first obtaining a referral is commonly referred to as "direct access." In contrast, if an individual has Medicare coverage, an audiologist-provided diagnostic

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hearing testing will be covered by Medicare only if the individual first obtains a referral from a physician or nonphysician medical practitioner (e.g., a physician assistant or a nurse practitioner).[11] In cases where a Medicare beneficiary expresses concern about his or her hearing to a primary care provider, the provider could choose to refer the patient to an audiologist for diagnostic hearing testing or to an otolaryngologist for an initial evaluation, and then a provider in that otolaryngology practice—likely an audiologist—in turn may conduct a diagnostic hearing test. In the case of either referral pathway, the Medicare beneficiary must go through at least one provider visit to obtain the referral before any hearing evaluation is performed by an audiologist that can be covered by Medicare. The nature of the hearing evaluation covered by Medicare is limited to tests needed "for the purpose of obtaining information necessary for the physicians' diagnostic medical evaluation or to determine the appropriate medical or surgical treatment of a hearing deficit or related medical problem" (CMS, 2008, p. 6). The referral pathway to access diagnostic hearing testing follows Medicare policy for all diagnostic testing (CMS, 2007). Audiologist-provided evaluations designed to assess an individual's functional or communicative abilities or auditory rehabilitation candidacy are not covered by Medicare. Nor is any care related to obtaining a hearing aid covered by Medicare because of the explicit exclusion in the Social Security Amendments of 1965.[12]

Other federally funded programs with hearing health care coverage provisions include the Federal Employees Health Benefit plans (plans approved through the Office of Personnel Management and offered by individual carriers), the Department of Defense Medical Health System, and the Veterans Health Administration. As of 2005, approximately 60 percent of the Federal Employees Health Benefits plans, which cover many federal employees and members of the U.S. Congress, provided coverage for hearing testing performed by an audiologist without requiring a referral from a physician or nonphysician medical practitioner; the coverage depends on the individual plan, similar to the case with insurers in the private sector (CMS, 2007). Coverage of audiologist-provided diagnostic testing for active duty military (provided through the Department of Defense Medical Health System) and for veterans (provided by the Veterans Health Administration) follows a similar model of not requiring a referral from a physician or nonphysician medical practitioner (CMS, 2007; Packer and Henselman, 2015). The Veterans Health Administration employs its own licensed audiologists who work in the same facilities as other health care providers, so this model is different from a community care model.

[11] Centers for Medicare & Medicaid Services, 42 C.F.R. § 410.32.

[12] Social Security Amendments of 1965, Public Law 89-97, 89th Cong., 1st sess. (July 30, 1965).

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For patients, there are advantages and disadvantages with both the referral pathway and the direct access pathway. The disadvantages of referral can include a lack of access to medical providers due to financial barriers, appointment wait times, or transportation difficulties. Hence, if medical referral is thought to be advisable, it should be balanced by a benefit to the consumer in the form of better, more coordinated primary and specialty health care. For those who have limited access to transportation or who rely on others to accompany them to provider visits, each trip to see a provider can present a burden. Patients generally develop hearing impairment slowly over time, so appointments are usually not needed urgently. However, the average wait time to see a family physician is approximately 19.5 days, and a shortfall in primary care physicians by 2020 has been projected—both of these factors may delay the time it takes to get evaluated and receive a diagnosis (HRSA, 2016a; Twiddy, 2014). In one recent study, 71 percent of members of the American Academy of Otolaryngology—Head and Neck Surgery reported being able to see a new patient in 2 weeks or less.[13] Studies have demonstrated that the overall ear disease prevalence in the population of adults with age-related hearing loss is low (Zapala et al., 2015) and that patient populations in health systems that do not require a referral do not have higher rates of missed disease (Zapala et al., 2010) (see Table 3-3).

Conversely, the current medical model in which Medicare coverage for hearing health care requires a referral follows the "medical home" model (NCSL, 2012), which ensures that those with hearing loss see a physician or nonphysician medical practitioner who can assess the possible relationship between the individual's general health and hearing loss. Given the negative health outcomes that can be associated with hearing loss (see Chapter 2), ensuring that a physician or nonphysician medical practitioner stays involved with and informed of a patient's hearing ability and any diagnosis may be important for overall health. The medical home model ensures that older adults with hearing loss receive coordinated care for their hearing loss, and also ensures that providers are aware of communication limitations with their patients to whom they must convey critically important health information (such as instructions for medications, etc.). Geriatric medicine is characteristically interdisciplinary, due in part to the interplay of reduced function in multiple physiological systems in older adults and the impact on sensory systems, including hearing and balance.

[13] Personal communication. Letter to the Committee on Accessible and Affordable Hearing Health Care for Adults, from James Denneny III, Executive Vice President/CEO, American Academy of Otolaryngology—Head and Neck Surgery. Received January 22, 2016. Available by request from the National Academies of Sciences, Engineering, and Medicine Public Access Records Office. For more information, email PARO@nas.edu.

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In addition to having an increased incidence of hearing loss, the Medicare population is more likely to have problems with dizziness and imbalance, and those who do have an increased incidence of falls (Agrawal et al., 2009). While inner ear vestibular disorders are thought to account for some of the cases involving dizziness that are presented to primary care providers, other causes include cardiovascular disease, systemic infection, psychiatric conditions, metabolic disturbances, and medications (for a review, see Sloane et al., 2001). The association of hearing loss with these conditions may indicate that the primary care provider should be an integral part of the initial episode of care related to any diagnosis of hearing loss, and thus direct access, which bypasses general medical providers, may not be in the patient's best interests.

The committee considered direct access versus requiring a referral with particular focus on how it relates to the committee's task of increasing access and affordability of hearing health care for adults. On one hand, the current Medicare policies requiring a referral may help ensure coordination and completeness of care for older adults who are Medicare beneficiaries and may help preserve a primary care provider as a central repository of all of an individual's health care information. On the other hand, providing a direct pathway to audiologists without requiring a referral might safely decrease the burden on Medicare beneficiaries while increasing accessibility to hearing health care, and communication between audiologists and primary care providers could accomplish the same team-based approach that the current Medicare referral requirement provides. Both pathways have their merits in terms of patient health and hearing health care access. Some committee members thought there were sufficient data to support recommending direct access without referral for Medicare beneficiaries. Other committee members were concerned about removing medical practitioner involvement and did not think there were sufficient data to understand how direct access would impact the effectiveness of the medical home for Medicare beneficiaries. Consequently, the committee could not come to a consensus on this issue. The committee thought that additional evidence might clarify these benefits and challenges for Medicare beneficiaries.

NEXT STEPS AND RECOMMENDATIONS

This chapter has covered a large number of critical issues regarding hearing health care services, and it has reviewed opportunities to improve these services, including needed areas of research. As new programs and delivery models are explored, it will be critical that research be conducted to support evidence-based practice. Ensuring that consumers are informed about their options and that they receive quality services that meet or exceed performance standards and also reach diverse and underserved

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populations will require coordinated efforts among federal, state, and local government agencies and a range of professional organizations, manufacturers and other private-sector businesses, health care providers, and advocacy organizations. The committee offers the following goals and recommendations for improving hearing health care services. In addition, in Chapter 5 the committee recommends demonstration projects and studies that tie health care service delivery to affordability.

Goal 2: ***Develop and Promote Measures to Assess and Improve Quality of Hearing Health Care Services***

Recommendation 2: The Centers for Medicare & Medicaid Services, the National Institutes of Health, the Department of Defense, the Department of Veterans Affairs, other relevant federal agencies, hearing health care professional associations and providers, advocacy organizations, health care quality improvement organizations, health insurance companies, and health systems should collaborate to

- **Align and promote best practices and core competencies across the continuum of hearing health care, and implement mechanisms to ensure widespread adherence; and**
- **Research, develop, and implement a set of quality metrics and measures to evaluate hearing health care services with the end goal of improving hearing- and communication-focused patient outcomes.**

Goal 3: ***Remove FDA Regulation for Medical Evaluation or Waiver to Purchase a Hearing Aid***

Recommendation 3: The Food and Drug Administration should remove the regulation that an adult seeking hearing aids be required to first have a medical evaluation or sign a waiver of that evaluation and should ensure consumers receive information about the medical conditions that could cause hearing loss through continued inclusion of that information in hearing aid user instructional brochures.

Goal 4: ***Empower Consumers and Patients in Their Use of Hearing Health Care***

Recommendation 4: Hearing health care professionals, professional associations, advocacy organizations, and relevant government agencies such as the Office for Civil Rights at the Department of Health and Human Services should ensure patients are aware of, and understand how to exercise, their rights of access to information about themselves under the Health Insurance Portability and Accountability Act Privacy

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Rule (45 C.F.R. Section 164.524), including their audiograms and hearing aid programming history.

Goal 5: *Improve Access to Hearing Health Care for Underserved and Vulnerable Populations*

Recommendation 5: The Health Resources & Services Administration, state health departments, advocacy organizations, and hearing health care professional schools and associations should

- **Collaborate and partner with health care providers to ensure hearing health care accessibility throughout rural and underserved areas using mechanisms such as telehealth, outreach clinics (including federally qualified community health centers), and community health workers;**
- **Support and promote programs, including incentives such as tuition assistance, to increase diversity in all sectors of the hearing health care workforce; and**
- **Promote the training of cultural competency in the hearing health care workforce and incentivize practice in underserved communities.**

Goal 6: *Promote Hearing Health Care in Wellness and Medical Visits*

Recommendation 6: Public health agencies (including the Centers for Disease Control and Prevention and state health departments), health care systems (including those of the Department of Defense and the Department of Veterans Affairs), health care professional schools and associations, advocacy organizations, health care providers, and individuals and their families should promote hearing health in regular medical and wellness visits (including the Medicare Annual Wellness Visit).

Specifically,

- Use patient visits to assess and discuss potential hearing difficulties that could affect doctor–patient communication and overall patient well-being, to encourage individuals and their family members and caregivers to discuss hearing concerns, to raise awareness among older adults about age-related hearing loss, and to encourage referral when appropriate; and
- Develop and disseminate core competencies, curricula, and continuing education opportunities focused on hearing health care, particularly for primary care providers.

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4

Hearing Technologies: Expanding Options

The hearing technology landscape is ever evolving and encompasses a wide range of products—from traditional hearing aids regulated as medical devices to consumer-technology products and hearing assistive technologies—with the overall goal of enabling the user to hear and communicate better in their homes (e.g., television), in public spaces (e.g., movies and lectures), and through phones or other communications products and systems. Both the access to and the affordability of these technologies are a concern in the United States and across the globe. Many people with hearing loss do not have hearing aids or other technologies. Of those who do have hearing aids, some choose not to use them. There are regulatory and policy challenges as well as research and design opportunities for improving hearing technologies so that they better meet the needs of individuals with hearing loss.

This chapter examines the broad range of hearing-related technologies. After a brief overview of the hearing technology landscape, including a discussion of the extent of use of these technologies and user satisfaction, the chapter examines studies on hearing aid efficacy and effectiveness (the nature and scope of the market is discussed in Chapter 5). The chapter then delves into the U.S. regulatory structure for hearing aids and other products that address hearing loss. The chapter closes with the committee's recommendations on next steps for improving the accessibility and availability of hearing health care technology. Because the committee was charged to focus on nonsurgical interventions, the chapter does not address cochlear implants or implantable bone conduction hearing aids in detail.

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OVERVIEW OF HEARING TECHNOLOGIES

The recently coined term *hearables* has been used to refer to a wide range of hearing- and ear-based technologies (Cannington, 2015; Hunn, 2015) that have been defined as "wearable technology for the ear" (Chandran, 2014; Hosford-Dunn, 2015). Hearable technologies include the devices and products relevant to hearing loss that are discussed in this report (see Box 4-1) as well as other products used via the ear, such as health-related technologies (e.g., monitors for heart rate and other health parameters) and the large variety of headphones, ear buds, and other music and streaming technologies. One estimate projects that the market for hearables will be more than $17 billion by 2020 (Hunn, 2015). Hearables can combine multiple functions and often feature innovations in style, color, and accessibility. The interest in audio technologies suggests a general public that has, and will increasingly have, personal familiarity with technologies that are for hearing or that are worn in the ear.

Hearing technology is undergoing rapid change as great advances in technologies and design features result in new products. Clayton Christensen used the term "disruptive innovation" to describe "a technology that brings a much more affordable product or service that is much simpler to use into a market. And so it allows a whole new population of consumers to afford to own and have the skill to use a product or service, whereas historically,

Box 4-1 TYPES OF HEARING-RELATED TECHNOLOGIES

Medical Devices for Hearing Loss
- Hearing aids
- Over-the-counter wearable hearing devices (proposed)

Consumer Electronics Not Intended for Hearing Loss
- Personal sound amplification products

Hearing Assistive Products and Technologies
- FM receiver systems
- Infrared receiver systems
- Hearing induction loop technologies
- Other assistive technologies

Communications Technologies
- Captioning
- Interoperability technologies
- Emergency information technologies

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the ability to access was limited to people who have a lot of money or a lot of skill" (Smith, 2007, p. w288). Examples of disruptive innovations include personal computers, cell phones, and retail medical clinics, all of which are products or services that have increased consumer options, generally at lower cost. To disrupt an industry, an innovative technology needs to be coupled with business-model innovation to harness the full potential of the technology (Christensen et al., 2009). Outdated regulations and reimbursement models have the potential to entrench older technologies, even as more cost-effective and more accessible technologies become available. Thus, innovations in hearing technology create a potential for disruptive change in the market for hearing devices, products, and services, but whether the market transitions may depend on additional regulatory, business, and reimbursement factors. This complex topic has been the subject of recent recommendations by the President's Council of Advisors on Science and Technology (PCAST) (Cassel et al., 2016; PCAST, 2015).

Hearing Aids

Hearing aids are medical devices defined by the Food and Drug Administration (FDA) as "any wearable instrument or device designed for, offered for the purpose of, or represented as aiding persons with or compensating for, impaired hearing."[1] As detailed below, FDA regulates hearing aids as Class I or Class II medical devices. Hearing aids generally have a number of components including a microphone, analog-to-digital converter, digital sound processor, output transducer, and battery. Although often compared to glasses (termed "spectacles" in FDA regulatory language), current hearing aids cannot correct or restore normal hearing acuity to the extent that glasses or contact lenses can correct vision loss or restore normal visual acuity for many people. The general goal of well-fit hearing aids is to improve the audibility of even soft speech, music, and other sounds while assuring that these same sounds and other already audible sounds do not become uncomfortably loud. Hearing aids can be customized to meet the needs of the individual (see Chapter 3) including customization of the frequencies and intensities of sound and other adjustable parameters in the processing of algorithms.

Technological efforts to address hearing loss have a long history. Early hearing trumpets and other "hearing aids" focused on increasing the volume and directionality of sound. With a series of advances in technology (carbon transmitters in the late 1800s, vacuum tubes in the early 1900s, transistors beginning in the 1920s and in more common use in the 1950s, microprocessors in the 1970s and 1980s, and digitalization of sound in the

[1] 21 C.F.R. 801.420.

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1980s and 1990s), the size of hearing aids has decreased, while the capabilities to provide clearer sound have greatly improved (Mills, 2011; Mudry and Dodele, 2000; Washington University School of Medicine, 2016). In addition, advances in signal processing and other technologies, improvements in battery capabilities, and the advent of wireless access have made it possible for hearing aids to include telecoils (for coupling with compatible electronic products; see further description later in the chapter), directional microphones, noise reduction circuitry, direct audio input and processing algorithms that are intended to minimize background noise and maximize conversational sound, and capabilities for wireless signal reception for interactions with televisions, phones, computers and tablets, and other communication and hearing assistive technologies. The extent to which these components (and other innovations) are included in specific hearing aid products varies across the range of basic to premium level aids. Upgrades and variations include the extent and nature of Bluetooth capability, the inclusion of a telecoil, the number of channels, automatic switching among programs, feedback reduction, and smartphone applications to program or personalize the device (*Consumer Reports*, 2015; HLAA, 2016; Mamo et al., 2016; McCormack and Fortnum, 2013). Research and design efforts continue to focus on improvements in various capabilities.

The different types of air conduction hearing aids are distinguished primarily by the location where the device is placed—behind the ear, in the ear, or in the ear canal—with the various types providing varying levels of visibility, ease of control, and features (*Consumer Reports*, 2015; NIDCD, 2013). The literature on the effectiveness of hearing aids and an overview of the regulatory landscape is described later in this chapter.

For most adults with mild to moderate sensorineural hearing loss, a common complaint is difficulty in understanding speech, especially in noisy environments. When measured using a speech-in-noise task (see Chapters 3 and 6), the results may indicate that a more advantageous signal-to-noise ratio is required to understand speech than for individuals with normal hearing. In some cases, given that the hearing aid is well fit and improves speech audibility in higher frequencies, the signal-to-noise ratio may be improved. However, under certain conditions, even well-fit hearing aids may not necessarily improve the signal-to-noise ratio to result in improved speech recognition in noise. For these individuals with mild to moderate hearing loss, hearing assistive technologies and/or auditory rehabilitation may provide additional benefit.

FDA has established regulatory requirements for hearing aids that include technical standards, quality system regulation (including good manufacturing practice requirements), requirements for mandatory labeling and user instructional brochures, and requirements for a pre-purchase medical evaluation (or documented waiver) (see Chapter 3 and below for further

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discussion of the medical waiver). These FDA regulations, along with a number of state regulations, have restricted the availability of hearing aids to being mainly dispensed through medical, audiology, or hearing instrument specialists. To date, FDA has not been receptive to proposals for over-the-counter (OTC) or direct-to-consumer hearing aids. This has led to the development of hearing-related technologies that are positioned as consumer electronics products rather than medical devices, including personal sound amplification products, or PSAPs (discussed below).

The immense demand for affordable and easy-to-deliver hearing health care in developing countries is resulting in innovations in the design of hearing aids and hearing assistive technologies aimed at increasing affordability and simplifying use. An estimated 360 million individuals in developing countries live with disabling hearing loss, and in 2004 the World Health Organization set out guidelines for hearing aids and services in an effort to support efforts to meet this demand (Olusanya et al., 2014; WHO, 2004). Although developing countries have a major need for low-cost hearing technologies, they often have a limited health care infrastructure with few audiologists and otolaryngologists. One avenue toward meeting the need would be the refinement of self-fitting hearing aids, which assess an individual's hearing and transfer the resulting data directly to the hearing aid, which sets itself appropriately, ideally without computers or other external requirements (Caposecco et al., 2011; Convery et al., 2011; Wong, 2011). Other avenues being explored include varying hearing assistive technologies and the use of solar power and other innovative power options (McPherson, 2011; Parving and Christensen, 2004). These and other innovations in hearing aid technology and fittings may also increase the options for underserved populations in the United States (Clark and de Swanepoel, 2014).

Access to hearing health care services may also improve with greater availability of hearing aids that have an open platform approach to programming. For the purposes of this report, an "open platform" for hearing aid programming refers to a programming platform that allows any hearing health care professional to adjust the device settings to meet a consumer's needs. "Open platform" does not refer to the proprietary software that confers general hearing aid functionality.

Currently, the settings on many hearing aids can only be adjusted by hearing health care professionals who have an agreement with a given manufacturer or distributor to sell that brand of hearing aid. Furthermore, many hearing health care professionals only sell one or a few different brands of hearing aids. A consumer who purchases a hearing aid from one hearing health care professional may find that the manufacturer or distributor has restricted access for adjusting the settings, and thus, the consumer may have to seek all additional programming services from the same distributor that originally sold him or her the product. In contrast, open platforms allow

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the hearing aid to be programmed by any provider, increasing the portability of care and the number of professionals from whom the individual can obtain care. This approach allows consumers who want to switch to a different hearing health care professional, who are traveling, or who move to a new location to have their hearing health care needs addressed by the professional of their choice. Additionally, technologies will continue to evolve and may enable individuals to make hearing aid adjustments for themselves directly or through a mobile app or other pathway rather than having to depend on a professional every time an adjustment is needed.

The committee urges the development of the standards needed for an open platform approach and the collaborative efforts by manufacturers, distributors, and hearing health care professionals to ensure implementation. The committee also urges greater efforts on the part of those who sell hearing aids to educate consumers about whether a given hearing aid's programming platform is open or closed. Additionally, consumer-friendly information on the programming parameters and other features of specific hearing aids should be furnished to consumers to allow easier comparisons between the devices (see also Chapter 6). These notifications should be provided prior to sale so that consumers can make informed purchasing decisions.

Extent of Hearing Aid Use

In the United States the prevalence of hearing aid use is significantly lower than the prevalence of hearing loss. In a report examining the results of the 1999–2006 National Health and Nutrition Examination Surveys (NHANES) (audiological testing was conducted from 1999 to 2004 in a sample of participants ages 50 to 69 years and in 2005 was conducted in all participants 70 years of age and older), it was estimated that hearing aids were worn by 3.8 million Americans, or 14.2 percent of those who had hearing loss (Chien and Lin, 2012) (see Table 4-1). An earlier report that was focused on NHANES participants ages 70 and older found a strong gradient of hearing aid use based on the severity of hearing loss, with 3 percent of those with a mild loss, 40 percent of those with a moderate loss, and 77 percent of those with a severe loss regularly wearing hearing aids (Lin et al., 2011). In a multivariable model, the severity of hearing loss, college education, and leisure noise exposure were positively associated with hearing aid use, but race/ethnicity, age, sex, and income were not significantly associated with the use of a hearing aid.

Bainbridge and Ramachandran analyzed NHANES data from 2005–2006 and 2009–2010 and found that among participants 70 years of age and older who were deemed to be hearing aid candidates (pure tone average [PTA] 0.5–2 kilohertz [kHz] > 35 decibel hearing level [dB HL] and who

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TABLE 4-1
Prevalence and Number of Individuals 50 Years or Older with Hearing Loss[a] Using Hearing Aids in the United States[b]

	Prevalence of Hearing Aid Use Among Adults with Hearing Loss[a] ≥ 25 dB, Percent (95% CI)[c]						
	Sex		Hearing Loss Severity[d]		Total		
Age, Years	Male	Female	Mild (> 25–40 dB)	Moderate or Greater > 40 dB	Overall Prevalence of Hearing Aid Use	Number with Hearing Aids, Millions	Number with hearing loss[a] ≥ 25 dB, millions
50–59	4.3 (0–9.5)	4.5 (0–13.5)	2.7 (0–6.6)	11.8 (0–27.5)	4.3 (0–8.8)	0.2	4.5
60–69	7.3 (2.5–12.1)	7.2 (1.4–13.0)	2.6 (0–5.2)	23.9 (10.6–37.2)	7.3 (3.6–10.9)	0.4	6.1
70–79	21.1 (14.5–27.6)	12.7 (6.0–19.5)	3.4 (0.3–6.5)	47.8 (37.0–58.6)	17.0 (12.4–21.6)	1.5	8.8
≥ 80	28.1 (20.3–35.9)	17.9 (11.2–24.7)	3.4 (0–7.7)	35.7 (28.7–42.7)	22.1 (18.5–25.8)	1.6	7.3
Estimated total number of individuals with hearing aids and with hearing loss, in millions						3.8[d]	26.7

[a]Hearing loss was defined as a speech-frequency pure tone average of hearing thresholds at 0.5-, 1-, 2-, and 4-kHz tones presented by air conduction in the better hearing ear of 25 dB or greater.

[b]Data were derived from the 1999–2006 National Health and Nutrition Examination Survey.

[c]All values represent percent prevalence unless otherwise noted.

[d]Numbers do not sum to group total because of rounding.

NOTE: CI = confidence interval; dB = decibel; kHz = kilohertz.

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reported moderate or worse hearing ability), just one-third used hearing aids (Bainbridge and Ramachandran, 2014). In this study, individuals with the highest incomes were more likely to use hearing aids than the poorest group, but these analyses did not adjust for education.

In the longitudinal Epidemiology of Hearing Loss Study, 14.6 percent of people with hearing loss were current hearing aid users, and 6 percent were former users (Popelka et al., 1998). Even among those participants who reported significant communication problems and handicap, only 33 percent reported currently using a hearing aid, while 32 percent of those with moderate to severe hearing loss reported current use. Factors associated with hearing aid use were older age, a greater severity of hearing loss, having a college education, poorer performance on word recognition tests, and self-reported hearing handicap and loss. Similar results of low hearing aid use were seen in a study of the adult children of participants in the Epidemiology of Hearing Loss Study, with only 4 percent of people with mild loss and 23 percent of participants with moderate-to-severe loss using hearing aids (Nash et al., 2013).

Although no race/ethnicity differences in hearing aid use have been seen in the NHANES data, this may be partly due to limited power, as the number of Hispanics/Latinos enrolled in the study was small. Data from the Hispanic Health and Nutrition Examination Survey showed that less than 10 percent of Hispanics/Latinos with hearing loss used hearing aids (Lee et al., 1991). Even among the participants with PTA > 40 dB HL, only 5 percent of men and 11 percent of women used hearing aids. A follow-up report from Lee and colleagues demonstrated that poorer Mexican Americans were nine times more likely to use hearing aids than other participants; the researchers speculated that the introduction of the Medicaid program may have contributed to the accessibility of hearing aids (Lee et al., 1996).

Hearing Aid User Satisfaction and Barriers to Use

To investigate the low use of hearing aids, studies have examined both the barriers to purchasing the devices and the barriers to use of the devices once purchased. The specific issues regarding cost as a barrier are discussed in Chapter 5.

As part of the longitudinal Epidemiology of Hearing Loss Study, Fischer and colleagues (2011) examined factors associated with acquiring hearing aids during 10 years of follow-up. Among participants with hearing loss in their better ear who were not using hearing aids, 36 percent started using them within 10 years. College graduates and people who reported greater hearing loss or judged their hearing as poor were more likely to become hearing aid users. When participants with hearing loss who had not acquired hearing aids were asked their reasons for not purchasing them, the

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most frequent responses included "did not need it," "cost," "inconvenient to wear," and "poor experience of others."

A review of studies examining the nonuse of hearing aids that were already purchased found that the primary reasons given for nonuse were problems with obtaining improved speech clarity and sound quality and challenges with the fit, comfort, and maintenance of the device (McCormack and Fortnum, 2013) (see Box 4-2). MarkeTrak, an ongoing survey by the Better Hearing Institute, the educational arm of the Hearing Industries Association, has found high levels of satisfaction with hearing aids, particularly with more recent models that have newer technologies, but it also notes challenges (Abrams and Kihm, 2015). In a 2004 MarkeTrak survey, two-thirds of respondents who acknowledged that they had a hearing loss but said that they had not adopted the use of hearing aids reported that their barriers to hearing aid adoption included perceptions of or experiences with problems in hearing aid performance (e.g., whistling, background noise), disappointing results (e.g., hearing not restored), and poor reliability (e.g., due to short battery life or humidity) (Kochkin, 2007).

Knudsen and colleagues (2010) reviewed 39 studies on the correlates of help-seeking behavior, uptake of hearing aids, use of hearing aids, and satisfaction with the devices. The researchers found that those individuals who self-reported that they experienced hearing-related activity limitations or participation restrictions prior to hearing aid fitting had greater satisfaction and higher use. The extent of hearing loss (in the moderate range) was generally associated with seeking help and acquiring a device but was not always associated with increased use or satisfaction.

Box 4-2 EXAMPLES OF REASONS IDENTIFIED FOR NONUSE OF HEARING AIDS AFTER PURCHASE

- Perceived as not effective, particularly in certain situations
- Did not meet expectations
- Challenges with fit, comfort, and use
- Side effects such as rashes or itching
- Stigma
- Challenges with care and maintenance (e.g., changing batteries)
- Ongoing cost of batteries, maintenance, and repair
- Appearance—cosmetic concerns
- Hear well enough without the hearing aid

SOURCE: McCormack and Fortnum, 2013.

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Ng and Loke (2015) reviewed 22 studies of older adults and noted a wide variety of audiologic determinants of hearing aid usage (largely self-reported), with the severity of hearing loss being a primary determinant, along with the type of hearing aid (greater use for those with more advanced signal processing features) and a greater tolerance for background noise. Nonaudiological determinants of the extent of hearing aid use included self-perception of a hearing problem, expectations of potential benefit, concerns of perceived stigma, and support from significant others or from group sessions.

One of the usability challenges for hearing aids that is reported particularly by older adults is that the small size of the devices can lead to difficulties with proper insertion, removal, and maintenance of hearing aids and changing their batteries. Limited vision and manual dexterity in older adults can exacerbate these problems (Clements, 2015; Erber, 2003). Furthermore, the hearing aids can be easy to misplace or lose.

The above studies indicate that sound quality, speech clarity, the amount of background noise, the ease and comfort of fit, battery reliability, and user expectations about the benefits and performance of hearing aids may be important factors affecting the use or nonuse of hearing aids. Although analogies have been drawn between hearing aids and eyeglasses, there are significant differences. Eyeglasses have corrective lenses and, when used, can generally correct visual acuity to the point that the user does not need any other assistive devices or strategies to see clearly. By contrast, hearing aids can improve the audibility of sound by amplification but are not able to restore normal hearing or fully improve communication abilities, especially in noise. Great strides have been made in hearing aids in the past 50 to 60 years, but issues regarding background noise and clarity of sound, among others, can limit benefits, particularly in certain situations and locations. Individuals who have hearing loss and use hearing aids can frequently benefit from hearing assistive technologies and from using strategies such as consideration of the location and proximity to (or away from) the source of the sound. Research efforts focused on hearing aid improvements continue to be needed, as are the development of performance standards for hearing aids and related products and the use of standardized terminology regarding device features to assist the consumer in directly comparing products and better understanding what can and cannot be expected from a given product (see also Chapter 6). Consistency across manufacturers in naming and describing the features of hearing aids and hearing assistive technologies will enable consumers to independently compare features and not rely solely on distributors and hearing health care professionals for that information.

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Personal Sound Amplification Products

The term "PSAPs" refers to a wide range of consumer products that increase the level of sound sensed by the user. FDA guidance documents specify that to avoid classification as a medical device, PSAPs cannot be marketed in the United States as products intended for individuals with hearing loss or to compensate for hearing loss (FDA, 2009a,b, 2013b). A 2009 FDA guidance document defines a PSAP as a "wearable electronic product that is not intended to compensate for impaired hearing, but rather is intended for non-hearing impaired consumers to amplify sounds in the environment for a number of reasons, such as for recreational activities" (FDA, 2009b). FDA's 2013 proposal for revised draft guidance offered some revisions and characterized PSAPs as products that

> are intended to amplify environmental sound for non-hearing impaired consumers. They are intended to accentuate sounds in specific listening environments, rather than for everyday use in multiple listening situations. They are not intended to compensate for hearing impairment or to address listening situations that are typically associated with and indicative of hearing loss. (FDA, 2013b, p. 5)

Some of these products have technical and performance characteristics quite similar to the hearing aids that FDA regulates. Determinations regarding whether a product is a "device" that FDA can regulate are based on the Federal Food, Drug, and Cosmetic Act (FDCA) definition of a device as "intended for use in the diagnosis of disease or other conditions, or in the cure, mitigation, treatment, or prevention of disease."[2] FDA does not regulate PSAPs as medical devices, although FDA can regulate them under the electronic product provisions of the FDCA. As with other consumer products, the Consumer Product Safety Commission has the authority to examine any safety concerns about PSAPs.

Few data are available on the extent and nature of PSAP use. Additionally, the term PSAP is often used to describe a wide variety of products, so it can be hard to understand or compare consumer surveys. An analysis of a MarkeTrak survey reported that approximately 5 percent of respondents who did not own a hearing aid indicated that they owned a PSAP (Kochkin, 2010b). Those who owned a PSAP reported lower levels of self-categorized hearing loss (mild) and had an annual income averaging approximately $10,000 less than those who owned a hearing aid. When asked what they would do if PSAPs were not available, almost half of the PSAP owners indicated that they would not purchase custom hearing aids (Kochkin, 2010b).

[2]Federal Food, Drug, and Cosmetic Act (FDCA), Public Law 75-717, 75th Cong. (1938) and amended. 21 U.S.C. § 321(h), 21 C.F.R. § 801.4.

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A 2014 online survey by the Consumer Electronics Association (now the Consumer Technology Association [CTA]) found that of 1,551 U.S. adults who had been diagnosed with hearing loss or self-reported that they had trouble with hearing, approximately 30 percent owned a hearing aid, 11 percent owned a television amplifier, 11 percent owned an amplified telephone, and 6 percent owned another sound amplification product (CEA, 2014). Of those individuals who owned a PSAP, 51 percent said they used it to help listen to television, and 10 percent reported using the product every day.

The population-based Blue Mountains Hearing Study in Australia surveyed the use of what it termed "assistive listening devices" and found that out of 2,956 respondents, 4.4 percent reported using such a device in the past year, with the primary uses being to enhance use of the television or telephone (Hartley et al., 2010). Of current hearing aid owners in the study, 25.6 percent reported that they had used an assistive device in the past year.

Studies of the effectiveness of PSAPs and hearing assistive technologies have primarily been conducted using small samples of older adults and have noted a general lack of knowledge about hearing assistive technologies, although some studies with users familiar with the technologies have indicated user satisfaction in improving sound quality and speech understanding (e.g., Aberdeen and Fereiro, 2014; Southall et al., 2006). More research is needed to develop the data necessary for improved capabilities and to provide the information needed for comparisons between products and product features by consumers and professionals.

Hearing Assistive Technologies

Individuals with hearing loss, particularly those with moderate to severe hearing loss, may use a variety of hearing assistive technologies in addition to hearing aids to connect to or receive information from other communication avenues (such as the phone or television) or from sound systems in classrooms, theaters, places of worship, or other public spaces or for emergency alerts (see Box 4-3). Driven by the needs of consumers and the requirements of antidiscrimination laws such as the Americans with Disabilities Act (ADA),[3] hearing assistive technologies span the range of products from those for personal and home use to systems available in public spaces and for larger audiences These services are often termed auxiliary aids and services in the ADA,[4] which requires that

[3] Americans with Disabilities Act of 1990, Public Law 101-336, 101st Cong. (July 26, 1990).

[4] Revisions to the ADA in 2010 included clarifying the scope of auxiliary aids and services to include providing a qualified note taker or interpreter, captioning (in multiple formats), assistive telecommunications products (e.g., telephone handset amplifiers, hearing aid–compatible telephones, text telephones, captioned telephones), videotext displays, and accessibility features in electronic documents (DOJ, 2014).

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Box 4-3 HEARING ASSISTIVE TECHNOLOGIES

- Face-to-face communication
  - Hardwired and wireless auditory technologies
  - Visual technologies (e.g., captioning)
- Reception of media (e.g., television, music)
  - Hardwired and wireless auditory technologies
  - Visual technologies (e.g., captioning)
- Telecommunications
  - Auditory
    - Amplified phones
    - Hardwired and wireless interfaces
  - Visual
    - Video conferencing (personal or group)
    - Captioning for teleconferences
- Alerts
  - Auditory
  - Visual (flashing lights, text)
  - Vibrotactile

> A public accommodation shall take those steps that may be necessary to ensure that no individual with a disability is excluded, denied services, segregated or otherwise treated differently than other individuals because of the absence of auxiliary aids and services, unless the public accommodation can demonstrate that taking those steps would fundamentally alter the nature of the goods, services, facilities, privileges, advantages, or accommodations being offered or would result in an undue burden, i.e., significant difficulty or expense.[5]

These types of products have also been termed "hearing assistance technologies."

Improving the availability and effectiveness of hearing assistive technologies is a priority for achieving better hearing and communication for individuals with hearing loss. Improvements in these technologies and connections need to be accompanied by efforts to raise public awareness on the range of options available and to provide user-friendly instructions for connectivity and use. These efforts could be undertaken by hearing health care professional associations, hearing device manufacturers, and government entities such as the Federal Communications Commission (FCC) and the National Institutes of Health. Additionally, training for hearing

[5] 28 C.F.R. § 36.303.

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health care professionals and for primary care providers and other health care professionals working with adults needs to emphasize the capabilities of hearing assistive technologies and best practices for instructing patients regarding their use and connectivity.

Hearing Induction Loop and Telecoil Technologies

Hearing induction loop technology allows the sound system in a room to connect wirelessly with an individual's hearing aid via the telecoil in the hearing aid or via a neck loop receiver and ear phones, thereby eliminating the background noise and improving clarity of sound. These systems work through the installation of hearing loop wiring around the perimeter of the room that connects to the room's sound system. The electromagnetic signals from the sound system are picked up by the telecoil in the hearing aid or cochlear implant or by the receiver.

Telecoils are available on most but not all types and models of hearing aids, but consumers do not always know that their hearing aid has this feature or that it can be added as an option[6] (HLAA, 2016). Only 34 percent of 1,995 respondents to a 2008 MarkeTrak survey indicated that they were aware that their hearing aid had a telecoil (Kochkin, 2010a). Telecoils also enhance the performance of wired and wireless telephones.

In a survey of audio loop users, approximately 70 percent indicated that the loop significantly improved sound quality and speech intelligibility (Kochkin, 2014). Respondents also noted that hearing induction looping empowers consumers because they can walk into a venue with an induction loop and turn on the telecoil sensor without the need to ask for assistance or ask for another piece of equipment (receiver); by being unobtrusive to use, the technology maintains a user's privacy. Furthermore, performance standards for induction loop technology provide the consumer with a technology that can be used across venues and manufacturers, whereas many other hearing technologies are proprietary. Some states have recognized the value of the telecoil to couple with an induction loop by mandating that consumers be informed about the telecoil when they purchase their hearing aids. Hearing induction loops have been installed in some public spaces, such as movie theaters, places of worship, and other large venues, but they can also be installed in private homes (Shaw, 2012) and vehicles (HearingLoop.org, 2015). Efforts are under way in some communities to expand the use of this technology (see Chapter 6).

[6]The Consumer's Guide to Hearing Aids notes that the majority of hearing aids have telecoils as a standard feature or as a feature that is available to be added (HLAA, 2016).

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FM and Infrared Technologies

FM (frequency-modulated) systems use radio signals to transmit sound directly from the speaker's microphone or other sound system. Some types of hearing aids can process the wireless FM transmissions. In other cases, a body-worn receiver is used that is connected to earphones or a neckloop is used that converts the transmission to an electromagnetic signal that can be picked up by the telecoil in the hearing aid (ASHA, 2016; Chisolm et al., 2007b; Kim and Kim, 2014). These systems are often used in classrooms and places of worship and can be used to transmit sound from radio, television, and other sources. Radio signals are able to penetrate walls, and mixed signals can result unless different frequencies are used. Studies on the effectiveness of FM systems in improving speech perception have primarily examined the use of this technology by children in classroom settings (e.g., Bertachini et al., 2015; Hawkins, 1984; Hawkins and Schum, 1985).

Infrared systems use infrared light waves to transmit to a personal receiver. As with the FM systems, the infrared system uses a receiver and headphones or a neckloop and hearing aid telecoil. The infrared systems have the advantage of containing the signal in the room (and thereby having less interference from other competing signals), but they have the disadvantage of potentially competing with natural light (Holmes et al., 2000; Kim and Kim, 2014).

Captioning

Captioning involves the transcription of discussions or programming into text on a screen and can be done on-site or remotely. Captioning is often done in real time for live events such as sports events or conferences, and it can be projected through television and other media, through a website, or directly onto a screen visible in the location of the event. Beginning in 1993, the ADA required all televisions 13 inches or larger to have closed captioning capabilities with text for the auditory portion of programs (Holmes et al., 2000). Captioned telephones are also available and can be used in conjunction with the Telecommunications Relay Service (see next section).

Interconnectivity—Wireless and Other Information and Communication Technologies

Individuals with hearing loss often face challenges involving the interoperability and compatibility of information and communications technologies (e.g., phones, television, or wireless networks) with hearing aids and other products. Beginning in the 1980s and 1990s a number of laws

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were passed in the United States that focused on ensuring that telephone and television and other electronic communications would be accessible to individuals with hearing loss and other Americans with disabilities (see Box 4-4).

Efforts by the U.S. Access Board (responsible for issuing standards and guidance relevant to the ADA) and other organizations and agencies include a focus on the issues of compatibility and interoperability between and among wireless communications products and systems and hearing technologies, including revised and common wireless standards (Access Board, 2015).

Mobile apps and smartphones have the potential to offer a variety of options for individuals with hearing loss (Mamo et al., 2016; Paglialonga et al., 2015). Smartphones can be used via Bluetooth to initially set up a

Box 4-4 EXAMPLES OF LEGISLATION TO MAKE COMMUNICATION ACCESSIBLE TO INDIVIDUALS WITH HEARING LOSS

Rehabilitation Act of 1973[a] extends vocational rehabilitation programs in the states, and the Section 508 amendment in 1998 requires federal agencies to ensure that their electronic and information technology is accessible to people with disabilities.

Hearing Aid Compatibility Act of 1988[b] requires that the Federal Communications Commission ensure that new telephones be compatible with hearing aids. Wireless phones were exempt from the requirements, but subsequent changes to the law have extended its provisions to cellular phones.

Technology-Related Assistance for Individuals with Disabilities Act of 1988[c] provides funding to states to develop statewide assistive technology solutions for individuals of all ages with disabilities.

Americans with Disabilities Act of 1990 (ADA)[d] requires that under certain conditions, businesses and public accommodations need to ensure that individuals with disabilities are not excluded from or denied services because of the absence of auxiliary aids. Captions are considered one type of auxiliary aid. Modifications to the ADA were made in 2008 (Public Law 110-325) and subsequently in ADA regulations.

Television Decoder Circuitry Act of 1990[e] requires that all televisions larger than 13 inches sold in the United States after July 1993 have a built-in decoder that enables viewers to watch closed-captioned programming.

Individuals with Disabilities Education Act of 1990[f] (Public Law 105-17) and the **Individuals with Disabilities Education Improvement Act of 2004**[g] (Public Law 108-446) ensure the availability of education services for children and youth with disabilities (ages birth through 21 years of age) and the incorporation of assistive technologies into these services.

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hearing aid or to personalize and program the device (Mamo et al., 2016). One analysis of mobile health applications for eight health conditions noted the paucity of mobile applications for hearing loss (Martinez-Perez et al., 2013). The apps related to hearing were primarily for the purpose of hearing checks or providing educational tools. Screening for hearing loss is also a potential use (Peer and Fagan, 2015) (see below for information on FDA guidance documents regarding mobile apps; see also Chapter 3).

Phones are required to meet American National Standards Institute (ANSI) standards specifying the level of volume and other sound parameters that must be attainable. The FCC requires that wireless phones meet the ANSI C63.19 standard regarding compatibility with hearing aids. Additionally, telephones are available that provide greater amplification, and other assistive technologies can also be used in conjunction with phone

Telecommunications Act of 1996[h] added Section 713 to the Communications Act, which requires the Federal Communications Commission to develop rules and implementation schedules for the closed captioning of television video programs, and Section 255, which requires telecommunications equipment manufacturers to strengthen efforts to improve accessibility.

Twenty-First Century Communications and Video Accessibility Act of 2010[i] provides protections to enable people with hearing loss and others with disabilities to access broadband, digital, and mobile innovations and includes a focus on emergency information technologies.

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[a]Rehabilitation Act of 1973, Public Law 93-112, 93rd Cong. (September 26, 1973) and amendments 29 U.S.C. § 794d.

[b]Hearing Aid Compatibility Act of 1988, Public Law 100-394, 100th Cong. (August 16, 1988). 47 U.S.C. § 610.

[c]Technology-Related Assistance for Individuals with Disabilities Act of 1988, Public Law 100-407, 100th Cong. (August 19, 1988).

[d]Americans with Disabilities Act of 1990, Public Law 101-336, 101st Cong. (July 26, 1990).

[e]Television Decoder Circuitry Act of 1990, Public Law 101-431, 101st Cong. (October 15, 1990).

[f]Individuals with Disabilities Education Act of 1997, Public Law 105-17, 105th Cong. (June 4, 1997).

[g]Individuals with Disabilities Education Improvement Act of 2004, Public Law 108-446, 108th Cong. (December 3, 2004).

[h]Telecommunications Act of 1996, Public Law 104-104, 104th Cong. (February 8, 1996).

[i]Twenty-First Century Communications and Video Accessibility Act of 2010, Public Law 111-260, 111th Cong., 2d sess. (October 8, 2010) and amendments, 124 Stat. 2795 (2010).

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calls. The FCC's Telecommunications Relay Service offers a variety of options to assist individuals who have hearing loss with placing and receiving phone calls (see Box 4-5). A recent FCC report to Congress highlighted several consumer-related issues including ensuring seamless connections between smartphones and hearing aids and providing more extensive consumer information online and in retail settings to help customers compare features of phones and other technologies (FCC, 2014). Recent FCC proposed rule making focuses on compatibility issues (FCC, 2015b).

Among the other technologies that offer potential for helping individuals with hearing loss is the expanded use of high-definition voice (also referred to as wide-band audio), which broadens the range of frequencies transmitted and the number of audio samples per call to allow less background noise and provide more easily distinguishable sounds (Chang, 2013).

A 2015 survey by the Rehabilitation Engineering Research Center on Telecommunications Access at Gallaudet University found that among 420 respondents with hearing loss (the majority self-reporting that they had severe or profound hearing loss) who regularly used telephones, the major needs reported for improved phone use were

Box 4-5 TELECOMMUNICATIONS RELAY SERVICE

The Telecommunications Relay Service is a public–private-sector collaboration that provides individuals with hearing or speech disabilities the capabilities to place and receive telephone calls with no additional cost to the user beyond standard telephone service charges. The Federal Communications Commission manages the program, which is run in collaboration with telecommunications companies and state-based programs.

The relay service works primarily through communications assistants who facilitate calls through several mechanisms. A person using a teletypewriter or other text input device can call the relay center (usually by dialing 711), provide the number he or she wants to call, and then the communications assistant provides the link converting text to voice and voice to text. An individual with hearing loss can also dial and speak directly to the called party and hear his or her voice. At the same time the individual can read text of the called party's voice to facilitate the caller's understanding. Captioned telephones are often preferred by people with residual hearing who use their own voices. Video relay that uses sign language interpreters is often preferred by people who communicate using sign language.

Title IV of the Americans with Disabilities Act required the telecommunications relay service to be available nationwide and to be as equivalent as possible to standard telephone services.

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- Better telephone sound quality;
- Improved telephone captions, which are more accurate, have shorter delays, or both;
- Better ways to test telephone products to find which work for a given individual;
- More affordable prices for accessories and other special telephone equipment;
- More or better information about telephone communication options for people with hearing loss;
- Better options for listening to voice mail;
- More or better information about hearing aid compatibility for cell phones;
- The ability to hear over the telephone using both of an individual's hearing devices at the same time;
- More training on strategies an individual can use to improve his or her telephone communication with people who are difficult to understand; and
- More attention to assessing an individual's telephone communication needs by the individual's audiologist or hearing instrument specialist.[7]

Emergency Communications

Ensuring accessibility of the nation's emergency communications systems requires that the systems have specific features for those with hearing loss. These systems have three key components: (1) 911 call processing and delivery through public safety answering points and call dispatch; (2) the Emergency Alert System (national and regional); and (3) radio and television station transmission of news and updates regarding emergency information, which are mandated to be provided both aurally and in a visual format (such as closed captioning or other methods) (FCC, 2015a). The FCC requires that 911 landline and wireless services be compatible with text telephone devices. Additionally, efforts are ongoing to update and expand the methods of emergency communications to include text-to-911 capabilities for individuals with hearing loss or other disabilities (FCC, 2015c). An increasing number of public safety answering points (local centers where 911 calls are processed) have the capability to receive text-

[7]Personal communication, *Voice Telecommunications Access Survey*, from Linda Kozma-Spytek, Senior Research Audiologist, Technology Access Program, Gallaudet University. Received February 19, 2016. Available by request from the National Academies of Sciences, Engineering, and Medicine Public Access Records Office. For more information, email PARO@nas.edu.

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to-911 (FCC, 2016). Weather emergency information can be provided to those who have hearing loss through connections to the National Oceanic and Atmospheric Administration Weather Radio system which can include providing text displays, alerting lights, or other mechanisms (NOAA, 2015). Smoke and carbon monoxide detectors are available with strobe lights, as are emergency devices that use vibrations to alert the user to emergency situations.

EFFECTIVENESS OF HEARING AIDS AND OTHER ASSISTIVE PRODUCTS

Recent research on the effectiveness of hearing aid use (and the use of other technologies, such as cochlear implants) has largely focused on the impact of that use on speech development and learning in children with hearing loss. Fewer peer-reviewed studies have examined the efficacy (performance under controlled conditions, usually in a clinical trial) and effectiveness (performance in real-world settings) of hearing aid use by adults, particularly comparing various types of hearing aids or comparing hearing aids with PSAPs or hearing assistive technologies. As noted in a 2001 review by Maki-Torkko and colleagues, "only a few studies on HA [hearing aid] outcomes meet strict scientific criteria and even fewer studies correlate rehabilitation outcome with the degree of HI [hearing impairment], disability or handicap" (Maki-Torkko et al., 2001, p. 8). As discussed above, studies have looked at the usage of hearing aids and owner's satisfaction and barriers to use. However, the outcome measures used to assess the efficacy and effectiveness of hearing aids (e.g., measures of speech recognition) vary widely, and a consensus is needed on standard outcome measures.

Studies of Efficacy and Effectiveness of Hearing Aids

Studies of the effectiveness of hearing aids have been primarily experimental studies that have examined the impact of specific technical aspects or components of the hearing aid device using small numbers of study participants, and many of these studies have been focused on technical rather than clinical or functional outcomes (Humes and Krull, 2012). These studies, which often compare different versions of a technology, have investigated such features as directional and omnidirectional microphones (e.g., Gnewikow et al., 2009; Hawkins and Yacullo, 1984; Keidser et al., 2013; Wu et al., 2013), multimemory and volume controls (e.g., Banerjee, 2011), noise reduction technologies (e.g., Oeding and Valente, 2013), and various types of circuits and compression options (e.g., Hawkins and Naidoo, 1993; Kokx-Ryan et al., 2015; Moore et al., 2001; Shanks et al., 2002). During the transition from analog to digital hearing aids over the past

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20 years, studies examining the technologies had varying results, due in part to variation in the outcomes assessed. Johnson and colleagues (2016) reviewed 10 studies of hearing aid use by adults with mild hearing loss and found positive benefits of amplification using a variety of measures. Taylor and colleagues (2001) reviewed one randomized controlled trial and seven randomized crossover trials and found no significant differences in user function and quality of life assessments between analog and digital devices when pooling the data.

Assessing the impact of hearing aids on quality of life is a challenge because of the multiple comorbidities in many participants and the gradual onset of hearing loss in many adults. A meta-analysis of studies examining the impact of hearing aids on quality of life found no effect when using general health-related quality of life measures but a medium to large effect when using hearing-specific questionnaires; however, the meta-analysis included only one randomized controlled trial (Chisolm et al., 2007a).

Only a few studies have used control groups or randomized methodologies. As noted by Van Vliet, "Peer-reviewed publications describing performance of various techniques and hearing aid circuits are available, but high-quality evidence about what works for patients in the form of randomized, blinded studies designed to answer critical questions about candidacy for hearing aids, hearing aid selection, fitting, and rehabilitation are very rare" (Van Vliet, 2005, p. 416). A clinical trial conducted by the Department of Veterans Affairs (VA) and the National Institute on Deafness and Other Communication Disorders (NIDCD) examined hearing aid benefits among 360 participants with sensorineural hearing loss (Larson et al., 2000; Noffsinger et al., 2002; Shanks et al., 2002). The participants were randomized in order to examine the results of using three different hearing aid circuits. At the time the study was conducted, these three circuits made up 70 percent of the U.S. hearing aid market. Each circuit was used for 3 months, six sequences of circuits were used, and the study was double blinded. The major outcomes examined were loudness, noise interference, and overall quality, and the outcome measures involved speech recognition tests, ratings of perceived sound quality, and self-assessed subjective assessments of benefit. When compared with unaided listening, the participants reported substantial benefit with hearing aids using all three circuits. Small differences were noted between the circuits on ratings of loudness and on the distortion of sounds.

A study by Yueh and colleagues (2001) randomly assigned 30 veterans with service-connected hearing loss (and eligible to receive a hearing aid through their veteran benefits) to receive either a programmable hearing aid with a directional microphone or a nonprogrammable aid. Hearing-related quality-of-life measures were compared among those two groups and also with 30 veterans with non-service-connected hearing loss who

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either did not have a hearing aid or who received a hearing assistive technology product. The greatest improvements in hearing-related quality of life were noted by those using the programmable hearing aids, followed by those who received the nonprogrammable aid and then the hearing assistive product, and the lowest scores were for those with no hearing technologies. Similarly, Humes and colleagues (2009) randomly assigned groups of older adults with hearing loss to four types of hearing aids (varying by single- versus multichannel technology and omnidirectional versus bidirectional microphones) and found improvements in speech recognition in all groups with little difference seen between the technologies.

A more recent study conducted by Cox and colleagues (2014) examined the results of laboratory tests and journal entries of speech understanding for 25 participants with bilateral mild to moderate sensorineural hearing loss who used four types of hearing aids (two basic and two premium level) in a randomized crossover trial. The hearing aid fittings were conducted following a best-practice five-step approach that included programming of the hearing aids using the manufacturer's proprietary algorithm and matching real-ear performance to national prescription goals. Participants ranged from new to experienced hearing aid users (mean age of 70.4 years). Each type of hearing aid was used for 1 month, with participants engaged at the end of each month in laboratory speech understanding tests and responding to a set of standardized questionnaires; the participants also recorded journal entries of their experiences with the hearing aids throughout the month. The study found benefits associated with all four types of hearing aids, with experienced users noting greater benefits than new users. No statistically significant differences were found in speech understanding between those using the premium and the basic hearing aids. The researchers also conducted a single-blinded, repeated, crossover trial in which 45 participants used hearing aids with premium and basic features (participants were blinded to the features) and responded to a variety of quality-of-life and hearing assessments and interviews (Cox et al., 2016). On average, the participants did not note any significant differences between the hearing aids with premium features and those with basic features when assessing their use in daily life. These studies are at the forefront of efforts to provide independent comparative data on the effectiveness of hearing technologies. Additional studies are needed that use larger sample sizes across age ranges and control for prior experience with hearing aids to examine hearing characteristics and use of the broad range of products and devices in laboratory and real-world hearing environments.

Studies of the use of hearing aids have found no clear evidence that hearing aid users become acclimatized to hearing aids or have positive changes in hearing performance over time (Humes and Wilson, 2003; Humes et al., 2002; Turner et al., 1996). While it might be expected that

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hearing aid users would become more familiar with amplification and would note improvements in understanding amplified speech, the results of studies examining this expectation have not been consistent; however, the numbers of individuals studied has been limited. Further efforts and innovative approaches to understanding and optimizing the benefit of sustained use of hearing aids are needed.

Comparisons of Hearing Aids and Other Products

The evidence base of comparative studies among various types of devices and products is also scant. Studies that have included "non-hearing aid products" have described them in varying ways, making it difficult to distinguish a study examining what in the United States would be considered a PSAP from hearing assistive technologies or from low-cost hearing aids (which in some countries are sold as OTC).

Callaway and Punch (2008) examined the electroacoustic characteristics of 11 types of "OTC hearing aids," although it was not clear which were marketed as hearing aids and sold through mail order or the Internet and which were PSAPs. Eight of the products (termed "low-range" by the authors) were sold for less than $100 and three were in the mid-range group ($100 to $500). The study conducted analyses of gain and output for three hearing loss patterns and found that the low-range products primarily worked for hearing loss at low frequencies and were "electroacoustically inadequate to meet the needs of the hearing impaired" (p. 14), while the mid-range products could meet most or all of the National Acoustic Laboratories parameters. In 2000, Cheng and McPherson reported on a comparison conducted in Hong Kong of 10 OTC hearing aids costing less than $250 each (U.S.). Hearing aids can be purchased OTC in Hong Kong, and some of the products sold there may be more similar to PSAPs or to basic hearing aids. The study found that most of these products performed within the ANSI standards for hearing aids, with several being outside of the equivalent input noise and total harmonic distortion levels, and that most were more appropriate for helping people with low-frequency hearing loss than the high-frequency loss often experienced by older adults (Cheng and McPherson, 2000). An update of this study examined 10 OTC products and found similar results, with little change in electroacoustic characteristics or performance in the intervening decade (Chan and McPherson, 2015).

A study examining the acoustic performance of several more recent direct-to-consumer amplifying products (the authors describe these products as a "newer generation of hearing devices that comprise a higher price point [i.e., cost $200–$400]" found variations in parameters including frequency-specific gain, signal-to-noise ratio, and listening comfort

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and found that a number met the targeted performance levels (Mamo et al., 2016).

Research Needs

Research on hearing technologies is funded and conducted largely by the private-sector companies that produce hearing aids and hearing assistive technologies. It is estimated that the private sector annually invests $600 million in research and development aimed at improving hearing aids and developing new features, products, and systems (HIA, 2015).

Federal agencies with a focus on research on adult hearing loss include NIDCD, the National Institute on Aging, the VA, and the Department of Defense (e.g., DoD Hearing Center of Excellence, 2016; NIDCD, 2015; VA, 2015). Another avenue for funding university-based research on devices and technologies relevant to hearing loss is through the Rehabilitation Engineering Research Centers (RERCs) (ACL, 2015). These centers are charged with conducting studies of technology, systems, and devices across the range of disabilities. Relevant centers working on hearing include the RERCs on hearing enhancement, on universal telecommunications access, and on wireless technologies (Galludet University, 2013; University of Wisconsin–Madison and Galludet University, 2016; Wireless RERC, 2016). RERCs are supported by the National Institute on Disability, Independent Living, and Rehabilitation Research (formerly the National Institute on Disability and Rehabilitation Research) now located in the Department of Health and Human Services.

Efforts are needed across the academic, private, government, and nonprofit sectors to provide the research, outcome measures, and standards needed to improve hearing health care. Research and standards needs identified by the committee relevant to this chapter include

- Effectiveness and comparative-effectiveness studies of hearing technologies using consumer-relevant parameters across the varying levels of severity of hearing loss;
- Continued innovative research and design of hearing aids and hearing assistive technologies with a focus on improving hearing clarity, facilitating ease of use (particularly for older adults), and compatibility with the other assistive and communications technologies;
- The development of minimum performance standards for examining the effectiveness of hearing devices in real-world situations;
- Consensus criteria for defining an individual with hearing loss as a candidate for a hearing aid or other hearing device; and
- Product labeling comprehension studies.

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REGULATORY STRUCTURE AND STANDARDS

Hearing aids, hearing aid compatibility, and to some extent PSAPs are subject to federal regulation in the United States by FDA, the FCC, and Federal Trade Commission (FTC). Hearing aids are also subject to regulation under state regulatory laws, including licensing laws. This section provides an overview of these regulatory laws and describes their impacts on accessibility to hearing health care for adults.

Food and Drug Administration

FDA regulates hearing aids as medical devices under the FDCA. A "device" is defined in the statute as an article or instrument intended for use in the diagnosis of disease or other conditions; intended for use in the cure, mitigation, treatment, or prevention of disease; or intended to affect a structure or any function of the body.[8]

Overview of FDA Regulation of Medical Devices

Under the FDCA, medical devices are regulated under a risk-based framework with three classes of devices:

- Class I devices are considered the lowest risk and are subject to general controls, but they are not required to undergo premarket review by FDA (with some limited exceptions). Although usually exempt from 510(k) requirements, a new device in Class I can lose that 510(k) exemption if it has a different intended use or a "different fundamental technology" than the other devices in that product classification.[9] Examples of Class I medical devices include dental floss, medical gloves, and tongue depressors.
- Class II devices are moderate risk and are subject to general controls, special controls, and premarket review by FDA (with some exceptions where the device is exempted from premarket review). Examples of Class II medical devices include powered wheelchairs and some pregnancy test kits.
- Class III devices are the highest risk, such as implantable devices or life-supporting or life-sustaining devices. Class III devices are subject to general controls and also require premarket approval by FDA prior to marketing. Examples of Class III medical devices

[8] FDCA § 201(h), 21 U.S.C. § 321(h).
[9] See, e.g., 21 C.F.R. § 874.9 (limitations on exemption).

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include replacement heart valves, cochlear implants, and implantable defibrillators.

"General controls" include the registration of the manufacturer's device establishment, listing of the devices in commerce, quality system regulations including design controls and specific requirements for good manufacturing practices (unless exempted), adverse event reporting, labeling, and other requirements.[10] Design controls apply to Class II and Class III devices but not to Class I devices unless the devices are automated with computer software (or otherwise specified in the regulation).[11] "Special controls" include guidance documents, guidelines, performance standards, post-market surveillance, and other controls to provide reasonable assurance of the safety and effectiveness of the Class II device.[12] FDA has three premarket pathways (see Box 4-6).

FDA regulates the labels and labeling of all devices under its jurisdiction. Labeling is information that "accompanies" the device, which can be more than just physical accompaniment. The statute requires that labels and labeling be truthful, accurate, and not misleading. The labeling of a medical device must include adequate directions for use and adequate warnings to protect users.

When FDA authorizes a device for marketing, the device can be limited to use by or on the order of a physician or other health professional (prescription use) or authorized for OTC purchase and use by consumers (OTC use).

FDA also has the authority to impose restrictions on the sale, distribution, or use of a device—making it a "restricted device." Such restrictions can be imposed as a condition of approval in a premarket approval (PMA) order[13] or by promulgating a regulation for devices that undergo 510(k) review or that are exempt from 510(k) review.[14] FDA is authorized to regulate the advertising of restricted medical devices.[15]

Current FDA Regulation of Hearing Aids as Medical Devices

FDA has classified hearing aids under several different classification regulations, based on the intended use and risk of the different technologies. As defined in FDA regulations, a hearing aid is a "wearable sound-

[10]FDCA § 513(a)(1)(A), 21 U.S.C. § 360c(a)(1)(A).
[11]21 C.F.R. § 820.30(a).
[12]FDCA § 513(a)(1)(B), 21 U.S.C. § 360c(a)(1)(B).
[13]FDCA § 515(d)(1)(B)(ii), 21 U.S.C. § 360e(d)(1)(B)(ii).
[14]FDCA § 520(e), 21 U.S.C. § 360j(e) and FDCA § 502(q)&(r), 21 U.S.C. § 352(q)&(r).
[15]FDCA § 502(q)&(r), 21 U.S.C. § 352(q)&(r). The Federal Trade Commission otherwise regulates the advertising of medical devices.

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Box 4-6 FOOD AND DRUG ADMINISTRATION (FDA) PREMARKET PATHWAYS

510(k) pathway: The 510(k) notification pathway[a] can be used for devices that demonstrate "substantial equivalence" to a predicate device.[b] The new device must have the same "intended use" as the predicate device and either the same technological characteristics as the predicate device or different technological characteristics but information submitted in the 510(k) demonstrates that the new device does not raise different questions of safety and effectiveness than the predicate device. The statute indicates a 90-day review for 510(k) notifications, but in practice the FDA review typically takes 6 months to 1 year or more. If FDA finds that a device is "not substantially equivalent" to a predicate device, the new device is automatically classified as Class III.

De novo pathway: If FDA determines that a new device does not have a predicate device—for example, there is no prior device with the same intended use—and that the new device presents low or moderate risk, FDA can use the "de novo" pathway to reclassify the device from the automatic Class III classification to either Class II or Class I.[c] The petitioner must provide information describing the device and supporting the proposed classification, including proposed special controls that would provide reasonable assurance of the safety and effectiveness of the device.

Premarket approval pathway: This pathway is used for Class III devices, including devices found "not substantially equivalent," implantable devices, and other high-risk devices.[d] A premarket approval application must include labeling, manufacturing information, information to show the device meets any applicable performance standards, preclinical information (bench testing and animal studies, as appropriate), and clinical data that demonstrate the device is safe and effective for the intended use and patient population specified in the labeling.[e]

[a]FDCA § 510(k), 21 U.S.C. § 360(k).
[b]FDCA § 513(i), 21 U.S.C. § 360c(i).
[c]FDCA § 513(f)(2), 21 U.S.C. § 360c(f)(2).
[d]FDCA § 513(a)(1)(C), 21 U.S.C. § 360c(a)(1)(C).
[e]FDCA § 515(c), 21 U.S.C. § 360e(c).

amplifying device that is intended to compensate for impaired hearing."[16] Air conduction hearing aids amplify and deliver sounds to the external ear canal via air conduction. Bone conduction hearing aids involve an implant that is placed behind the ear, and amplified and processed sound is conducted via the skull bone to the cochlea. An air-conduction hearing aid is a Class I device that is exempt from premarket review but which remains subject to quality system regulation (including good manufacturing practices) and other FDA requirements. As with other Class I devices, a specific

[16]21 C.F.R. § 874.3300.

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air-conduction hearing aid can lose its 510(k) exemption if it has a different "intended use" or a "different fundamental technology" than other devices in that product classification.[17] A bone-conduction hearing aid is a Class II device, subject to 510(k) notification requirements. FDA has recognized consensus standards that are applicable to both of these classes of hearing aids, including ANSI/Acoustical Society of America (ASA) standards (FDA, 2013a).

FDA has classified wireless air-conduction hearing aids as Class II with special controls.[18] The applicable special controls are testing to validate electromagnetic compatibility; design and performance data to validate wireless technology functions; and labeling that specifies "appropriate instructions, warnings, and information relating to [electromagnetic compatibility] and wireless technology and human exposure to non-ionizing radiation." Wireless air-conduction hearing aids are exempt from 510(k) notification requirements.

A transcutaneous air conduction hearing aid system is a "wearable sound-amplifying device intended to compensate for hearing loss without occluding the ear canal."[19] The system involves of an air-conduction hearing aid attached to tube system that is surgically fitted between the back of the outer ear and outer ear canal. It is Class II, requires a 510(k) notification, and is subject to the special controls specified in an FDA guidance document for this device type (FDA, 2002).

FDA also regulates as devices various testing equipment and accessories. For example, a "hearing aid calibrator and analysis system" is a Class II device, defined as an "electronic reference device intended to calibrate and assess the electroacoustic frequency and sound intensity characteristics emanating from a hearing aid."[20]

Cochlear implants and other implantable hearing devices are in Class III and require FDA granting of a PMA prior to marketing. These devices require surgery for implantation and are therefore not part of the charge to the committee and the discussion in this report.

In 1977, FDA issued regulations that made hearing aids "restricted devices" subject to various restrictions on sale, distribution, and use specified in the regulations.[21] These regulations define "hearing aid" as "any wearable instrument or device designed for, offered for the purpose of, or represented as aiding persons with or compensating for, impaired hearing."[22] These regulations also set forth labeling requirements for hearing aids,

[17] 21 C.F.R. § 874.9.
[18] 21 C.F.R. § 874.3305.
[19] 21 C.F.R. § 874.3950.
[20] 21 C.F.R. § 874.3310.
[21] 21 C.F.R. §§ 801.420 & 801.421.
[22] 21 C.F.R. § 801.420(a).

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including the requirement for a user instructional brochure, which must be provided to the prospective user by the dispenser of the hearing aid. The brochure must include a "Warning to Hearing Aid Dispensers" that informs dispensers that they should advise prospective users to consult a physician whenever they find the prospective user to have certain medical conditions. The user instructional brochure must also include an "Important Notice for Prospective Hearing Aid Users" that users should have a medical evaluation by a licensed physician before purchasing a hearing aid (see discussion in Chapter 3). That notice also includes the following statement:

> Federal law restricts the sale of hearing aids to those individuals who have obtained a medical evaluation from a licensed physician. Federal law permits a fully informed adult to sign a waiver statement declining the medical evaluation for religious or personal beliefs that preclude consultation with a physician. The exercise of such a waiver is not in your best health interest and its use is strongly discouraged.

A hearing aid dispenser cannot sell a hearing aid unless the prospective user provides a written statement signed by a licensed physician stating that the hearing loss has been evaluated and the person is a candidate for a hearing aid or, alternatively, the prospective user signs and presents a waiver of the medical evaluation. The prospective user must be given the opportunity to review the user instructional brochure for the hearing aid prior to signing the waiver of medical examination (see Chapter 3).

FDA has permitted the marketing of disposable hearing aids.[23] In addition, FDA has not objected to Internet sales of Class I hearing aids where a mechanism is provided to ensure compliance with the regulations (e.g., FDA, 2005). Often the purchaser is asked to electronically read the waiver form and is given the option to accept the terms of the waiver online.

Over the years, hearing technology companies have petitioned FDA to amend its regulations to eliminate the medical evaluation requirement and to allow the OTC sale of hearing aids (e.g., Etymotic Research, 2003; GudHear, 2003). FDA has denied those petitions. One petitioner argued that OTC hearing aid safety could be ensured by restricting peak OSPL-90 (output sound pressure level with 90 dB SPL input) to 115 dB SPL (sound pressure level) or less in order to prevent hearing damage or tinnitus and by requiring that eartips pass standard tests for allergic reactions and real-world testing for ear canal safety (Etymotic Research, 2003, p. 3). Another petitioner stated that labeling could provide adequate information to educate potential users about hearing loss and when to consult a hearing health care professional. As an example, the petitioner recommended providing

[23] E.g., FDA-cleared 510(k) notifications K081136 and K021867.

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the following information to a prospective hearing aid purchaser in person, by website, or otherwise (GudHear, 2003, p. 4):

- A hearing aid will not restore normal hearing and will not prevent progressive hearing loss, and will not improve the underlying causes of organic hearing loss.
- Some hearing loss is caused by conditions that can be medically corrected. The following signs indicate the need for a medical evaluation by a licensed physician, preferably a physician who specializes in diseases of the ear:

1. Congenital or traumatic deformity of the ear
2. Pain or discomfort in the ear
3. History of active drainage from the ear within the past 90 days
4. History of sudden or rapidly progressing hearing loss
5. Unilateral hearing loss or a difference in hearing between ears in the past 90 days
6. Excessive earwax
7. Foreign body in the ear canal
8. Acute or chronic dizziness

The medical conditions identified above correspond to the "red flag" medical conditions that must be identified in the warning statement to hearing aid dispensers in the user instructional brochure required by 21 C.F.R. § 801.420(c)(2) (for more discussion of the "red flag" medical conditions, see Chapter 3).

FDA denied the petitions requesting an OTC hearing aid classification, citing concerns that a medical evaluation is necessary to ensure that the "red flag" ear conditions would not be "undiagnosed and unevaluated" and to avoid delays in diagnosis and management of medically treatable conditions that cause hearing loss (FDA, 2004a,b).

Current FDA Regulation of PSAPs as Nondevice Articles or Instruments

As noted above, FDA's regulations define a "hearing aid" as any wearable instrument that is designed, offered, or represented "as aiding persons with or compensating for impaired hearing." This definition flows from the statutory definition of a medical "device" as intended for use in the cure, mitigation, or treatment of a disease, or intended to affect a structure or function of the body.

Given the technological advances since FDA promulgated the hearing aid regulations in 1977, the interest of consumers in taking more control over their own health and wellness, and FDA's refusal to create an OTC

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hearing aid category, some manufacturers have been interested in selling products that enhance hearing without complying with the restrictions on sale, distribution, and use imposed under FDA's hearing aid regulations. As a result, some manufacturers began to market hearing aid devices directly to consumers, sometimes by seeking to comply with the federal restrictions in 21 C.F.R. §§ 801.420 and 801.421 and sometimes not. Some manufacturers sought to market technologies with labeling and advertising claims that the products could help people to hear better, but without calling the products "hearing aids" (FDA, 2009a).

FDA eventually issued a guidance document to address this new category of products that FDA called personal sound amplification products, or PSAPs. As one manufacturer explained, "It is important to realize that the only reason most PSAP manufacturers—including the Petitioner's company—developed PSAPs was to provide a low-cost alternative to hearing aids for those who could not afford hearing aids or did not want to be burdened by FDA regulatory requirements" (Etymotic Research, 2014, p. 15).

FDA issued a guidance document in 2009 to recognize the category of nondevice products called PSAPs that would be distinguished from the medical device "hearing aid" (FDA, 2009b). As defined in that guidance document, a PSAP would be "intended to amplify environmental sound for non-hearing impaired consumers. They are not intended to compensate for hearing impairment." PSAPs would be permitted for uses including "listening to lectures with a distant speaker, and listening to soft sounds that would be difficult for normal hearing individuals to hear (e.g., distant conversations, performances)." That guidance document stated that PSAPs would not be medical "devices" because they were not intended to cure, mitigate, or treat a disease and did not alter the structure or function of the body and thus were not within the statutory definition of "device" in the FDCA.

In 2013, FDA issued a draft guidance document for comment that was intended to supersede the 2009 PSAP guidance document (FDA, 2013b). This draft guidance document retains the same description of uses that would be considered appropriate for a PSAP, but it also includes lists of uses that FDA considers "listening situations that are typically associated with and indicative of hearing loss" and thus within the "hearing aid" device classification. FDA's 2013 draft guidance states:

> Examples of listening situations that are typically associated with and indicative of hearing loss include: difficulty listening to another person nearby, difficulty understanding conversations in crowded rooms, difficulty understanding movie dialogue in a theater, difficulty listening to lectures in an otherwise quiet room, difficulty hearing the phone or doorbell ring, or difficulty listening situations in which environmental noise might inter-

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> fere with speech intelligibility. Products making these or similar claims should not be considered PSAPs. In addition, products that are sold as an "over the counter" alternative or substitute for a hearing aid should not be considered PSAPs.

The 2013 draft guidance document has been viewed as more limiting than the 2009 guidance document, in that statements such as that above appear to be further restricting the types of products, claimed uses, and performance claims that would be appropriate for the PSAP product category. Nevertheless, FDA clearly stated in both the 2009 and 2013 documents that the agency's view was that PSAPs were not intended to be used by individuals with hearing loss.

As nondevice products, PSAPs would not be subject to FDA regulatory controls applicable to medical devices. Thus, there would be no FDA control of the design, manufacturing, or labeling of PSAPs (other than to ensure the labeling did not cause the product to be a hearing aid). Nor would PSAPs be subject to the product performance standards that FDA has recognized as applicable to hearing aids (e.g., ANSI voluntary standards recognized by FDA as applicable to hearing aids).[24] Moreover, the FDA regulations imposing the restrictions on sale, distribution, and use—including requirements pertaining to medical evaluations, hearing aid dispensing, and the user instructional brochure—would not apply to PSAPs.

FDA did advise, in both the 2009 guidance and the 2013 draft guidance documents, that PSAPs are electronic products that emit sonic vibrations and thus are subject to the electronic product provisions of the FDCA that apply to both nondevice products and medical devices.[25] Manufacturers of PSAPs are required to report defects (including product failure to perform to design specifications and causing certain types of injury)[26] and adverse events relating to injurious or potentially injurious exposure of a person to electronic product radiation (including sonic, infrasonic, or ultrasonic waves).[27] PSAP manufacturers are also subject to requirements for repurchase, repair, or replacement of products that have a defect or that fail to comply with an applicable federal standard.[28] These regulations for electronic products are far more limited than the medical device regulatory requirements.

At the time it was issued, FDA established a regulatory docket for the public to submit comments on the 2013 PSAP draft guidance. In January 2016, in response to a PCAST report recommending OTC hearing aids

[24] As noted elsewhere, the Consumer Technology Association has undertaken a project to draft voluntary standards that would apply to PSAPs.

[25] FDCA §§ 531-542, 21 U.S.C. §§ 360hh-360ss; 21 C.F.R. § 1000.15(d).

[26] 21 C.F.R. Part 1003.

[27] 21 C.F.R. §§ 1000.3 & 1002.20.

[28] 21 C.F.R. Part 1004.

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(PCAST, 2015) and this ongoing Academies study, the agency reopened the comment period on the draft guidance (FDA, 2016a). FDA asked the public to address the following issues:

1. The degree to which current FDA requirements are a barrier to hearing aid accessibility, affordability, and use;
2. The appropriateness of creating a category of "basic" hearing aids with labeling for OTC sale; and
3. Whether the benefits of OTC hearing aids would outweigh the risks of foregoing the requirement of medical evaluation.

Concurrently with reopening the comment period on the PSAP draft guidance, FDA also announced a public workshop (held in April 2016) to discuss the current quality system and good manufacturing practices requirements that apply to hearing aids (FDA, 2016b). FDA indicated that it would consider proposals for an alternative model for quality verification and quality standards developed by standards development organizations and key stakeholders.

FDA Regulatory Policy for Mobile Apps and General Wellness Products

The proliferation of mobile apps and consumer-oriented products intended for health and medical uses has challenged FDA with regard to where to draw the line between devices and nondevices. Some of the mobile apps under development might be useful in providing hearing assistance or enabling hearing assistive technologies (see Chapter 3). Some mobile apps might be represented as PSAPs. FDA has issued two guidance documents, one on mobile apps and the other on general wellness products (FDA, 2015a,b). As with PSAPs, FDA has tried to distinguish "medical device" products and uses from nondevice products. FDA has also described generic types of products that might be medical devices but that FDA would not affirmatively regulate in its exercise of enforcement discretion.

FDA has long held the view that software can be a medical device when it meets the statutory definition of "device." This includes software that controls a medical device, software that is an accessory to a device, and freestanding software that performs a device function. FDA's guidance document on mobile medical apps states that a mobile app meets the definition of device when it is intended either to be used as an accessory to a regulated medical device or to transform a mobile platform into a regulated medical device (FDA, 2015b). For example, the guidance states that a mobile app that functions as a stethoscope would be a mobile medical app subject to device regulation. By analogy, a mobile app that functions as a hearing aid would be a device.

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Also relevant to hearing health, FDA's guidance document states that apps intended for use as audiometers are mobile medical apps:

> Mobile apps that use tools within the mobile platform (e.g., speaker) to produce controlled levels of test tones and signals intended for use in conducting diagnostic hearing evaluations and assisting in the diagnosis of possible otologic disorders (i.e., an audiometer). Mobile apps that use a microphone or speaker within a mobile platform to serve as an audiometer to allow healthcare providers to determine hearing loss at different frequencies. (FDA, 2015b)

On the other hand, mobile apps that provide a checklist of symptoms to advise a consumer on when to see a physician, general educational tools, or tools that help a consumer communicate with a health care professional would not be medical apps.

To increase the availability to consumers of health-related technologies, FDA's draft guidance document on general wellness products describes categories of low-risk products that would not be subject to regulation as medical devices (FDA, 2015a). A general wellness product is described as having "(1) an intended use that relates to maintaining or encouraging a general state of health or healthy activity or (2) an intended use claim that associates the role of healthy lifestyle with helping to reduce the risk or impact of certain chronic diseases or conditions" (FDA, 2015a, p. 3). The former category includes products for weight management, improving mental acuity, and other such claimed effects where there is no reference to a disease, disorder, or medical condition. An intervention or technology that may pose a risk to user safety (such as radiation exposure) or that raises novel questions of usability is not considered to be low risk.

Both the mobile apps guidance and the general wellness guidance indicate that rapid advances in health-related technologies are driving consumer demand and that industry is responding by developing a broad array of products. FDA, in turn, has sought to respond to these products with a risk-based approach to the enforcement of its medical device regulations.

The committee provides details later in this chapter on its recommendation to FDA to establish a new category of OTC wearable hearing devices.

State Laws Relating to Hearing Aids and Hearing Aid Dispensing

Types of State Laws Affecting Hearing Aids and Dispensing

Numerous states have enacted laws that affect sales of "hearing aids" as defined in the state law. These state laws typically define a "hearing aid" as a wearable instrument or device intended for the purpose of "aiding

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or compensating for impaired human hearing," for improving the hearing of a "hearing-impaired person," or "aiding or improving defective human hearing."[29]

State laws require the licensing of persons who sell, rent, lease, dispense, or otherwise provide a hearing aid to a consumer. Some state laws require an evaluation or measurement of hearing prior to selling a hearing aid. Some state laws prohibit the sale or distribution of hearing aids through the mail or via the Internet, while other state laws permit such sale or distribution under specified conditions.

States also typically have unfair trade practice laws and consumer protection laws that apply to the promotion and sales of products, which could include hearing aids as well as PSAPs. Other state laws of general applicability might also be relevant, but they are beyond the scope of this review.

Relationship Between FDA and State Regulatory Requirements

There is a complicated relationship between FDA regulations and state laws as they apply to medical devices, and this relationship is particularly relevant to the regulation of hearing aids. Section 521(a) of the FDCA contains an "express preemption" provision applicable to medical devices. Under that provision, no state or local government

> may establish or continue in effect any requirement with respect to a medical device intended for human use having the force and effect of law (whether established by statute, ordinance, regulation, or court decision), which is different from, or in addition to, any requirement applicable to such device under any provision of the act [FDCA] and which relates to the safety or effectiveness of the device or to any other matter included in a requirement applicable to the device under the act [FDCA].

In essence, an FDA requirement applicable to a device that relates to either the safety and effectiveness of the device or a specific requirement for the device established under the FDCA preempts any state or local requirement that is not consistent with the FDA requirement.

State or local requirements are preempted only when FDA has established specific regulations or there are other specific requirements applicable to a particular device under the FDCA. Under FDA's regulations, some state or local requirements affect devices but are not preempted by section 521(a) because they are not "requirements applicable to a device." These include laws of general applicability to device and nondevice products (e.g., unfair

[29] E.g., California Business and Professions Code § 2538.10(d); Florida Statutes Chapter 484.041(5); Georgia Code Annotated § 43-20-3(5); Michigan Compiled Laws § 339.1301(a).

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trade practices) and licensing laws that relate to the practice of medicine or related professions or occupations that administer, dispense, or sell devices.

"Restricted device" regulations issued under section 520(e) may impose restrictions on the sale, distribution, or use of a device beyond those prescribed in state or local requirements. If there is a conflict between such restrictions and state or local requirements, FDA's federal regulations prevail. This would include the restrictions imposed on hearing aid labeling and sales.

Section 521(b) of the FDCA contains a provision whereby FDA may allow the imposition of a state requirement that is different from, or in addition to, any requirement applicable under the act to the device (and which is thereby preempted) by promulgating an FDA regulation exempting the state or local requirement from preemption. FDA's regulations in 21 C.F.R. Part 808 list numerous state requirements that FDA has exempted from preemption, and many of these apply to state requirements applicable to hearing aids and the dispensing of hearing aids.

FDA has treated state licensing laws and terms-of-sale laws as state requirements that are *not* expressly preempted by section 521(a). In contrast, FDA considers that state disclosure and recordkeeping laws, state laws requiring an audiological evaluation before the sale of a hearing aid to a minor, and state laws that are substantially identical to federal requirements *would be* preempted by section 521(a). Nevertheless, FDA has decided affirmatively to exempt these laws from federal preemption through the rule-making exemption procedure.[30]

A manufacturer seeking to market an OTC hearing aid or other innovative hearing assistive technology product thus faces at least four principal hurdles:

1. Federal regulations impose "restricted use" requirements on hearing aid dispensers regarding warnings and information that they must disclose to and obtain from consumers prior to a sale, as well as other conditions on the sale of hearing aids;[31]
2. Federal regulations *exempt* from federal preemption any state laws that (i) require hearing aid dispensers to disclose certain additional information related to the safety and efficacy of hearing aids or that provide consumers with advice at the time of sale, or both; and (ii) impose additional recordkeeping requirements on dispensers;[32]

[30] See 21 C.F.R. § 808.20 et seq. (describing the exemption procedure); 21 C.F.R. § 808.53 et seq. (listing the exemptions applicable to all states and identifying the specific hearing aid laws of 19 states and the District of Columbia that have been exempted from preemption).

[31] FDCA § 520(e); 21 C.F.R. §§ 801.420-801.421.

[32] 21 C.F.R. Part 808; 45 Fed. Reg. 67326 (1980).

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3. Federal regulations *exempt* from federal preemption state requirements that are "equal to, or substantially identical to, requirements imposed by or under" the FDCA;[33] and
4. FDA has by regulation and in statements in the Federal Register interpreted the FDCA as *not expressly preempting* (i) state laws related to the licensing, registration, and certification of hearing aid dispensers; and (ii) state regulations that require hearing aid dispensers to disclose at the time of sale certain information related to the terms of sale (does not include information related to the safety or effectiveness of hearing aids).[34]

In sum, under FDA's current regulations relating to preemption and exemptions from preemption for state laws relating to hearing aids and dispensing, manufacturers would need to consider various state laws and determine whether innovative technologies and marketing approaches would contravene either federal or state regulatory requirements. These state law requirements impose barriers to improving the accessibility and affordability of hearing aids and hearing technologies, in addition to any FDA-related barriers.

Federal Trade Commission

The FTC enforces laws that prohibit fraudulent, unfair, and deceptive trade practices.[35] FTC regulations prohibit the use of misleading sales and advertising practices, including giving inaccurate information about hearing loss, hearing aid performance, refund policies, or warranty coverage.

The FTC website advises consumers that the purchase agreement for a hearing aid should include information regarding the trial period for the product, the warranty, the total price, and what is available during service or repair (e.g., a loaner hearing aid) (FTC, 2016). The FTC also advises consumers about the FDA requirements applicable to hearing aids.

The FTC also provides advice relating to PSAPs. For example, the FTC website states: "Sound Advice: If your hearing is impaired, don't use a PSAP as a substitute for a hearing aid. That may delay the diagnosis of a potentially treatable condition, and cause more damage to your hearing" (FTC, 2016).

Thus, FDA, FTC, and states could bring enforcement with respect to misleading promotional practices for hearing aids and PSAPs.

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[33] 21 C.F.R. § 808.1(d)(2).

[34] 21 C.F.R. § 808.1(d)(3); 42 Fed. Reg. 9285, 9293 (1977); 45 Fed. Reg. 67326, 67331(1980).

[35] Federal Trade Commission Act, 15 U.S.C. §§ 41-58 as amended.

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Federal Communications Commission

The FCC is responsible for enforcing several laws intended to enable Americans with hearing loss to have greater access to wire-line and wireless communications services and emerging communications technologies. These laws include the Hearing Aid Compatibility Act of 1988[36] and the Twenty-First Century Communications and Video Accessibility Act of 2010 (CVAA),[37] which expanded accessibility laws to newer technologies, including digital, broadband, and mobile innovations (see Box 4-4).

The Hearing Aid Compatibility Act required the FCC to ensure that all wire-line telephones manufactured or imported for use in the United States and all "essential" telephones such as public phones, hospital and nursing home phones, emergency phones, and workplace phones are hearing aid compatible.[38] Cell phones (which were not common in 1988) were exempted, but the statute authorized the FCC to limit or eliminate that exemption.

In 2003, with the widespread availability of wireless phones, the FCC required manufacturers of wireless phones to make available a certain number or percentage of models that are hearing aid compatible.[39] The FCC established rules for hearing aid compatibility of digital wireless phones and to wire-line and wireless communications services through a wide array of phones, including voice-over-Internet protocol telephones and wireless handsets that use advanced mobile technologies.

FCC rules require that phones subject to the Hearing Aid Compatibility Act produce a magnetic field of sufficient strength and quality to permit coupling with hearing aids that contain telecoils. The telecoil picks up the voice signal from an electromagnetic signal from the telephone, enabling users of telecoil-equipped hearing aids to communicate over the telephone without feedback and without the amplification of unwanted background noise. FCC rules also establish technical parameters to ensure that telephones are compatible with hearing aids.[40]

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[36] Hearing Aid Compatibility Act of 1988, Public Law 100-394, 100th Cong. (August 16, 1988). 47 U.S.C. § 610.

[37] Twenty-First Century Communications and Video Accessibility Act of 2010, Public Law 111-260, 111th Cong., 2d sess. (October 8, 2010) and amendments, 124 Stat. 2795 (2010) (as codified in various sections of 47 U.S.C.).

[38] 47 U.S.C. § 610(b).

[39] The FCC issued a Notice of Proposed Rulemaking in November 2015 to require that all wireless handsets, not just a certain percentage of models, be hearing aid compatible in accordance with a staged plan for implementation. Fourth Report and Order, and Notice of Proposed Rulemaking, FCC 15-155 (November 19, 2015).

[40] ANSI standard C63.19 sets forth the standard for compatibility of digital wireless phones with hearing aids. A digital wireless handset is considered hearing aid compatible for inductive coupling if it meets a T3 (or U3T) rating under the ANSI standard. The ANSI standard also provides a methodology for rating hearing aids from M1 to M4, with M1 being the least immune to radio-frequency interference (including stray signals from the wireless phone) and M4 being the most immune.

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FCC rules also generally require that telephones allow the volume to be increased to accommodate individuals with hearing loss, whether or not they use hearing aids. Telephones allowing high volume levels must automatically reset to a lower volume each time the handset is returned to an on-hook condition (unless a waiver is granted in certain conditions).

Telephone manufacturers and wireless service providers are required to provide certain types of information to consumers in their product labeling and packaging for hearing aid–compatible products, and on their websites. Manufacturers and wireless carriers must also file annual reports with the FCC that list their hearing aid–compatible products.

Enacted in 2010, the CVAA updates the FCC requirements to address modern communications. Title I of the statute addresses telecommunications access issues to make advanced communications products and services fully accessible to people with disabilities. These services include voice-over-Internet protocol services and electronic messaging. For example, smartphones are required to be usable by people with hearing aids as well as by individuals who are blind or have vision impairments. Title II addresses video programming to make it easier for people with disabilities to view video programming on television and the Internet. For example, programs shown on television with captioning are required to include the captioning when they are distributed on the Internet. The statute also requires that people with disabilities have access to emergency information, including next-generation 911 services and emergency information on the television.

The FCC recently proposed to amend the hearing aid compatibility rules for wire-line handsets. The proposal would incorporate revised industry standards relating to volume control and set a standard for volume control for wireless handsets intended to ensure more effective acoustic coupling between handsets and hearing aids or cochlear implants.[41]

In November 2015, the FCC adopted new rules to expand hearing aid compatibility requirements to technologies such as Wi-Fi calling and Voice over Long-Term Evolution.[42] To avoid regulatory requirements lagging behind technological advances, these new rules also require that future technologies automatically comply with hearing aid compatibility rules.

One question that arises is whether the FCC regulations would govern compatibility with PSAPs, which are not considered "hearing aid" devices as defined by FDA. The answer to this question might depend on which rules are at issue. The FCC accessibility rules require noninterference with hearing technologies—defined to include hearing aids, cochlear implants, and hearing assistive technologies—to the lowest possible level that allows

[41] Notice of Proposed Rulemaking, FCC 15-144, adopted October 23, 2015.

[42] Fourth Report and Order, and Notice of Proposed Rulemaking, FCC 15-155, adopted November 19, 2015.

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a user to utilize the product.[43] In contrast, hearing aid coupling is defined as applicable to "effective wireless coupling to hearing aids."[44] The hearing aid compatibility rules assume that the ANSI standard applicable to hearing aids would apply in addition to the ANSI standard for handsets to achieve compatibility, which would appear to exclude the possibility of PSAPs not complying with that standard.[45]

Americans with Disabilities Act

The ADA includes requirements for nationwide telecommunications relay services and telephone access to local emergency services (911 call centers). Section 508 of the Rehabilitation Act of 1973 included provisions relating to accessibility to telecommunications technologies that are acquired and provided by the federal government.

Litigation under the ADA has been used to try to expand accessibility to communications technology. For example, there are court decisions with inconsistent outcomes as to whether a website for an entity that does not have a physical location open to the public is subject to ADA requirements relating to public accommodations.[46] The Department of Justice has not issued regulations regarding applicability to websites, but it has suggested that the ADA would obligate public accommodations to make the websites that they use to provide their goods and services accessible to and usable by individuals with disabilities.[47]

These statutes, enforced by private litigants as well as the Department of Justice, might also encourage the development of advanced communications technologies that are accessible and usable by individuals with hearing loss.

Voluntary Standards

Voluntary standards are being developed for PSAPs through the CTA. CTA is accredited through ANSI to develop standards and other technical documents for the consumer electronics industry. CTA voluntary standards committees engage industry, academia, consumers, and other constituencies in the development of performance criteria, measurement protocols, and other specifications. In 2015, CTA committee R6WG20 was finalizing a set of minimum performance metrics for PSAPs and a glossary of PSAP-related terms (Belt, 2015). Discussions are under way regarding the potential for

[43] 47 C.F.R. § 6.3(a)(2)(viii).
[44] 47 C.F.R. § 6.3(a)(2)(ix).
[45] 47 C.F.R. § 20.19(b).
[46] See discussion in the federal district court's opinion in National Federation of the Blind v. Scribd Inc., Case No. 2:14-cv-162 (D. Vt., March 19, 2015).
[47] 80 Fed. Reg. 35044 (June 18, 2015).

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a logo program or other mechanism to identify products that meet the performance standards to aid consumers in comparing PSAPs (Belt, 2015).

As noted above, FDA has recognized consensus standards that are applicable to hearing aids, including ANSI/ASA standards. These standards are intended to ensure the quality and performance of these devices. The standards address issues such as specifications of hearing aid characteristics, signal processing, the computation of loudness and speech intelligibility, measuring the intelligibility of speech over communications systems, and measuring performance characteristics under simulated real-world working conditions.

NEXT STEPS AND RECOMMENDATIONS

The broad spectrum of types and severity of hearing loss necessitates a wide range of hearing technologies to meet each individual's needs with options that adhere to safety requirements and are effective in improving hearing and communication in the complex environments of daily life. Interoperability with other technologies including cell phones, televisions, and emergency alert systems is critical.

Develop and Clarify Hearing Device Options

FDA's hearing aid regulations along with state laws relating to hearing aid sales and dispensing place obstacles in the way of new technologies that could make hearing assistance more easily available and accessible for adults who could benefit from such assistance in connection with mild to moderate hearing loss. As noted throughout this report, innovation in technologies relevant to hearing loss are occurring that can provide affordable, effective, safe, and usable technologies to address the unmet need for hearing health care. The committee carefully examined the regulatory and policy challenges and opportunities for expanding innovative technologies and thus provides a range of options for individuals with hearing loss.

FDA sought to carve out PSAPs as a category of nondevice products that could be more easily marketed. But FDA has defined PSAPs as being intended only for a user population of persons without hearing loss, while hearing aids are intended to compensate for hearing loss. Thus, PSAP manufacturers and distributors are not supposed to be offering their products for the purpose of compensating for hearing loss. This legal and regulatory distinction between hearing aids and PSAPs might not be readily apparent to users, and it might not be fully respected by PSAP sellers who explicitly or implicitly offer their products to compensate for hearing loss.

By taking this approach of removing PSAPs from device regulation, FDA has left PSAPs largely unregulated, without the design control requirements, performance standards, technical standards, or labeling

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requirements that apply to devices. The FTC would still apply its regulations prohibiting fraudulent, unfair, and deceptive trade practices, but that is a post-market enforcement that might put consumers at risk.

An approach that could better protect consumers and offer options for more informed consumer decision making would be for FDA to create a category of "OTC wearable hearing devices" intended for mild to moderate hearing loss. In order to ensure their safety and effectiveness, these devices could be subject to ANSI and other technical standards applicable to hearing aid performance. They would be exempted from premarket review if the technology was fundamentally the same as Class I air-conduction hearing aids, or else they would be subject to 510(k) notification if the technology was similar to the Class II hearing aid devices. These OTC wearable hearing devices would be subject to labeling requirements tailored to OTC selection, purchase, and use.

This regulatory approach would be similar to the FDA's regulatory approach of creating separate device classification regulations for "prescription eyeglasses" and "magnifying spectacles."[48] Magnifying spectacles are "convex lenses intended to be worn by a patient who has impaired vision to enlarge images." In contrast, prescription spectacle lenses "provide refractive corrections in accordance with a prescription for the patient." Similarly, a category of OTC wearable hearing devices could provide a simpler technological approach to improving hearing (e.g., amplification) than would a more complicated technology. (The parallel drawn with eyeglass regulation is specific to the regulatory approach and is not meant to draw parallels between the use and performance of the devices.) FDA has moved a variety of monitoring and therapeutic technologies to OTC status (such as noninvasive blood pressure monitoring systems, stethoscopes, burn dressings, medications) to enable consumers and patients to take more control of their own health and medical conditions.

In implementing an OTC wearable hearing device category, FDA should preempt state laws that could pose an obstacle to implementation. For example, FDA should preempt any state laws or regulations that would purport to prohibit OTC sale and distribution of these hearing devices, or purport to require dispensing, fitting, or evaluation by a licensed audiologist, hearing instrument specialist, or other professional occupation prior to purchase of these OTC wearable hearing devices. Various approaches to preemption could be considered by FDA. For example, preemption might be accomplished by making the OTC wearable hearing devices a new category of "restricted devices" (apart from the current regulations in 21 C.F.R. §§ 801.420 and 801.421) such that the FDA regulations would be requirements specifically applicable to the safety and

[48] 21 C.F.R. §§ 886.5840, 886.5844.

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effectiveness of this category of OTC wearable hearing device. In addition, the "OTC wearable hearing devices" would not be called "hearing aids," with the intention of avoiding application of state laws that already refer to and govern "hearing aids."

An alternative option that the committee considered was to retain the category of PSAP as a nondevice product that would be permitted to include claims to compensate for "normal" hearing loss as a result of aging. In essence, age-related hearing loss would not be considered a "disease," and thus the products would not be considered as within the statutory definition of "device." To keep PSAPs outside the device definition, FDA would also have to conclude that PSAPs are not intended to affect a structure or function of the body. This approach would not preempt state laws, however, and many state laws define "hearing aids" as instruments compensating for hearing loss and subject them to dispensing requirements. If the PSAPs claim to compensate for hearing loss, they might be swept into these state laws. Furthermore, this approach would not establish a framework for regulating the quality of PSAPs, the performance claims made for them, or the adequacy of labeling information provided to users—all of which are important considerations.

As medical devices, the OTC wearable hearing devices would be subject to regulatory requirements such as establishment registration (including payment of an annual user fee by the manufacturer), device listing, good manufacturing practices, labeling, and reporting. Compliance with FDA requirements would add to the costs of manufacturing and distribution of these devices. Nonetheless, compliance with these requirements would also provide safety and effectiveness benefits for users. FDA could apply the types of consensus standards that would be applicable to the performance of the OTC wearable hearing devices and also tailor or exempt certain regulatory requirements, such as specific quality system regulations, good manufacturing practices, or reporting requirements, as appropriate to the OTC wearable hearing devices.

Consumer-focused information (e.g., consumer education programs, user instructional brochures, package inserts, as well as specific labeling) will be important for OTC wearable hearing devices. Some OTC devices could be accompanied by software or apps for self-fitting and adjustment of the devices. The sales of OTC wearable hearing devices are anticipated to be similar to other OTC product sales with many reputable products having warranties and return policies. FTC requirements would continue to apply to protect consumers from fraudulent practices. The committee's recommendations regarding the OTC wearable hearing device category are generally consistent with the PCAST recommendation regarding the need for OTC devices (PCAST, 2015) but differ in certain respects and are more specific.

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The committee recognizes the need for an FDA guidance document regarding PSAPs to clarify that PSAPs are for specific purposes not related to hearing loss in contrast to hearing aids and OTC wearable hearing devices that are aimed at addressing hearing loss. The committee believes that this guidance could be accomplished by retaining the 2009 PSAP guidance or through revisions to the 2013 document including recognition that PSAPs are for specific hearing situations not related to hearing loss. As noted above, this distinction would be important to maintain in order to ensure that consumers with hearing loss receive the benefits relating to quality, performance, compatibility, and labeling envisioned under the OTC wearable hearing device category.

The committee notes that these changes would result in a wider range of options for adults with hearing loss, particularly mild to moderate hearing loss (see Table 4-2) and would clarify the purpose of PSAPs (see Table 4-3).

Goal 7: ***Implement a New FDA Device Category for Over-the-Counter Wearable Hearing Devices***

Recommendation 7: The Food and Drug Administration should establish a new category of over-the-counter (OTC) wearable hearing devices. This device classification would be separate from "hearing aids." OTC wearable hearing devices would be defined as wearable, OTC devices that can assist adults with mild to moderate hearing loss.

These devices would

- Explicitly be defined by FDA as intended for OTC sale;
- Be able to be marketed as devices that may assist with hearing loss and be sold as OTC, by mail, or online; and would include mobile apps and associated wearable technologies intended to function as an OTC wearable hearing device for mild to moderate hearing loss;
- Be subject to regulatory requirements that would explicitly preempt current state laws and regulations for hearing aids and dispensing and preempt potential future state laws and regulations seeking to limit OTC access;
- Be exempt from 510(k) premarket review to the extent that the technology is not fundamentally different from air conduction hearing aids;
- Include thorough consumer labeling, including information on
  - frequency gain characteristics,
  - adequate directions for use,
  - communication challenges for which it may be helpful to seek professional consultation, and

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TABLE 4-2
Proposed Range of Hearing-Related Devices and Products for Individuals with Hearing Loss

Devices and Products	Description	Federal Regulations, Standards, or Oversight	Availability
Hearing aids	Medical devices that meet FDA definitions and regulations; used across the range of hearing loss needs	• FDA Class I or Class II devices • Some exempt from premarket review by FDA • Restricted devices subject to FDA requirements in 21 C.F.R. 801.420 & 801.421 • Relevant ANSI standards and others • FCC oversight as relevant regarding compatibility and interoperability • FTC oversight as relevant regarding advertising	• Dispenser (audiologist, hearing instrument specialist) • Online (in some cases) • State law licensing requirements for hearing aids and dispensing • Remove regulatory requirement for medical evaluation or waiver
OTC "wearable hearing devices" (proposed new category of device)	Medical devices available OTC that focus on addressing mild to moderate hearing loss in adults and meet FDA safety and labeling requirements	• FDA Class 1 or Class II devices • Exempt from premarket review (unless fundamentally new technology) • Labeling requirements appropriate to self-selection; warnings regarding when to consult physician or audiologist • Relevant ANSI standards and others • FCC oversight as relevant regarding compatibility and interoperability • FTC oversight as relevant regarding advertising	• OTC • Online • State laws applicable to "hearing aids" and dispensing license would not apply • Apply federal preemption to assure availability over the counter
Other hearing assistive technologies	Consumer products that connect the user to other technologies and communication systems (e.g., phone, computer, hearing induction loop) or that provide the user with other hearing-related opportunities (e.g., self-testing, mobile apps)	• CPSC oversight • FCC and FTC regulations as applicable	• OTC • Online

NOTE: ANSI = American National Standards Institute; CPSC = Consumer Product Safety Commission; FCC = Federal Communications Commission; FDA = Food and Drug Administration; FTC = Federal Trade Commission; OTC = over the counter.

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TABLE 4-3
Consumer Products for Amplifying Sound

Products	Description	Federal Regulations, Standards, or Oversight	Availability
PSAPs	Consumer products that amplify sound and that cannot be labeled, claimed, or advertised for hearing loss; do not meet the OTC hearing device requirements	• CTA standards are being developed • FDA regulation under electronic product provisions of the FDCA applicable to non-medical-device products • FDA guidance to assure non-medical-device status • CPSC oversight • FTC oversight regarding advertising	• OTC • Online

NOTE: CPSC = Consumer Product Safety Commission; CTA = Consumer Technology Association; FDA = Food and Drug Administration; FDCA = Federal Food, Drug, and Cosmetic Act; FTC = Federal Trade Commission; OTC = over the counter; PSAP = personal sound amplification product.

  - medical situations, symptoms, or signs for which to consult with a physician;
- Meet minimum safety requirements and standards, including but not limited to
  - safe maximal sound output (e.g., upper limit for dB SPL [decibel of sound pressure level] peak output) at levels to be determined in conjunction with national experts in hearing conservation,
  - criteria for eartips (e.g., maximum depth for insertion into the ear canal),
  - amplification via air conduction only (wireless technology for programming and connectivity should be permitted), and
  - American National Standards Institute or other voluntary standards for audio characteristics and performance as determined by FDA, as appropriate for this category;
- Be subject to quality system regulation (QSR) requirements, but be considered for exemption from certain QSR requirements as determined by FDA to be appropriate for this category; and
- Have the option to include accessory tests for self-assessment of mild to moderate hearing loss for purposes of selecting and fitting an OTC hearing device.

To further clarify the types of hearing technologies and their oversight and regulation:

- FDA should retain a guidance document on personal sound amplification products (PSAPs) that describes PSAPs as products that

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are not to be offered or promoted to address hearing loss and are subject to the electronic product provisions of the Federal Food, Drug, and Cosmetic Act through its 2009 PSAP guidance document or a revision of its 2013 PSAP draft guidance document. The PSAP guidance document would establish the distinction between PSAPs for normal hearing and the OTC wearable hearing device category for hearing loss.

- The Consumer Product Safety Commission and the Federal Trade Commission should exercise their respective authorities in the regulation of consumer products marketed as PSAPs.

Improve Transparency, Compatibility, and Interoperability of Hearing Technologies and Telecommunications Systems

Individuals with hearing loss frequently use hearing aids with telecoils or other hearing assistive technologies to couple with many other electronic communications products. These individuals benefit from compatibility between and among products and from interoperable systems such as emergency communication system connections, text-to-911, and captioning of alerts. Performance standards and policies can ensure the needed interoperability among products so that the products can easily and seamlessly connect and provide optimum sound transmission and performance (see also Chapter 6). For example, the standards relevant to hearing aid telecoils and hearing induction loop technology ensure that consumers can use the telecoil available across many brands of hearing aids to effectively connect to induction loop systems from a number of different manufacturers that are available in a variety of public spaces.[49] Similar efforts are needed to standardize the interfaces and connection points of hearing aids, hearing assistive technologies, and OTC wearable hearing devices with other types of technologies and communications systems.

As discussed earlier in the chapter, an open platform for programming hearing aid settings could also increase accessibility to the devices and related services. The committee encourages standards development related to open platforms. An open platform approach would provide consumers with greater portability in their hearing health care including increasing the options for choosing their hearing health care professional. Consumers should

[49] The interoperability between telecoils in hearing aids and hearing induction loop technology is possible due to national and international standards that can be used by both technologies (e.g., International Electrotechnical Commission's standard, IEC 60118-4 [IEC, 2014]). It is the committee's understanding that efforts are under way to examine referencing the recently updated hearing induction loop standards in the International Building Code and the International Code Council/American National Standards Institute standard A117.1 regarding accessible buildings (Kirkwood, 2013).

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be notified prior to sale regarding the portability of hearing aid programming. Greater public awareness and user-friendly instructions about the availability, portability, connectivity, and use of hearing aids and hearing assistive technologies, as well as comparable details on product features, are needed to enable informed decision making.

Goal 8: *Improve the Compatibility and Interoperability of Hearing Technologies with Communications Systems and the Transparency of Hearing Aid Programming*

Recommendation 8: The Federal Communications Commission, the Federal Trade Commission, the Food and Drug Administration, the National Institutes of Health, and other relevant federal agencies; the American National Standards Institute and other standards-setting organizations; manufacturers; and industry, professional, and consumer advocacy organizations should

- **develop standards that ensure that hearing aids and over-the-counter (OTC) wearable hearing devices are compatible and interoperable with other technologies and communications systems;**
- **increase public awareness and consumer-friendly information on the availability, connectivity, and use of hearing aids and hearing assistive technologies; and**
- **develop and implement standards for an open platform approach for hearing aid programming that allows any hearing health care professional (or, as evolving technology allows, the device owner) to program the device settings, and require point-of-sale information about the programming features and programming portability of hearing aids in order to enable more informed purchasing decisions.**

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5

Improving Affordability of Services and Technologies

For many people cost can be a key factor in making health care decisions; for some people cost can be the driving factor in such decisions, including whether to forego the care entirely. Among respondents to the 2014 Survey of Household Economics and Decision Making who had a household income of less than $40,000, 45 percent reported going without some form of medical treatment in the preceding 12 months (Federal Reserve, 2015). The cost of hearing health care includes the cost of services and technologies, and these costs may be incurred multiple times over a period of many years in order to maintain and replace hearing aids and other technologies, to continue to monitor hearing status, and to retain the benefits from auditory rehabilitation and other services. In an ideal world, high-quality hearing health care would be easily and immediately accessible, and the costs would be fully covered. Opportunities for note-worthy improvement in affordability do exist throughout the U.S. hearing health care system. Lessons learned from individual health care systems and other health care models in the United States and internationally can shed light on appropriate paths forward to improve the affordability of hearing health care in the United States.

CONSUMER COSTS FOR HEARING HEALTH CARE

A key challenge to understanding the costs associated with hearing health care and how to make that care more affordable is the need to make accurate price comparisons (comparing technologies with similar technologies or services with equivalent services). As discussed in Chapters 3 and

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4, there are several types of hearing health care professionals, services, and technologies from which an individual may benefit. The variety of options and the interest in meeting the unique needs and specific preferences of each individual make it all the more important that consumers be able to make informed decisions about what their personal expenses for hearing health care will be. The committee recognized this challenge throughout its deliberations, and it urges changes to ensure that the public is able to accurately interpret and easily compare the costs for hearing technologies and services in order to make more informed decisions. It was with this concern in mind that the committee considered how to improve not only the affordability of the hearing health care system but also transparency in pricing. Where data were available, this chapter contains references to the prices of hearing health care. Every effort was made to include information about what hearing health care was included—or not included—in a given price.

Professional Services

When consumers are provided with the prices for hearing health care services, they are often presented as a set price for each type of hearing aid they are considering (basic to advanced). It may or may not be obvious that the price includes not only the price of the device (primarily hearing aids, but sometimes other assistive products as well) but also the price for professional fees for services, which may include all or some of the following: a comprehensive assessment of hearing loss and hearing aid candidacy, a functional communication assessment, hearing aid fitting and programming, and other associated services such as routine maintenance for a defined period of time and accessories (see Chapter 3). This is commonly referred to as a "bundled" pricing model. This package price may also include an unlimited number of visits to the dispenser for programming adjustments until the consumer is satisfied and has adjusted to the hearing aids or other technologies. Visits for auditory rehabilitation services may also be included. These services are often needed to achieve optimal fit and maximal benefit from the device and for the individual to learn strategies to maximize communication abilities. An alternative model, unbundled or itemized billing, lists the price of each test, device, and service individually. Results from a 2012 billing practices survey of audiologists showed that 67 percent of respondents used a bundled pricing model;[1] in a 2015 survey

[1]Personal communication. Letter to staff for the Committee on Accessible and Affordable Hearing Health Care for Adults, from Kim Cavitt, President, Academy of Doctors of Audiology; Judith Page, President, American Speech-Language-Hearing Association; and Larry Eng, President, American Academy of Audiology. Received August 27, 2015. Available by request from the National Academies of Sciences, Engineering, and Medicine Public Access Records Office. For more information, email PARO@nas.edu.

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of hearing instrument specialists, approximately 52 percent responded that they used a bundled model.[2] Thus, the majority of hearing health care financial transactions are conducted using a bundled price; moreover, the consumer may not be aware that this price includes devices and professional services and may incorrectly attribute the price solely to the device. A subsequent section of this chapter focuses on transparency in billing.

Nature and Scope of the Hearing Technology Market

The market for hearing aids is often expensive and generally not transparent. The hearing aid industry has been characterized as having "considerable vertical integration, with manufacturers controlling the design, development, manufacturing, and distribution of their products, nearly to the point of sale" (Seelman and Werner, 2014, p. 401). Audiologists and hearing instrument specialists may sell one or several brands of hearing aids but may not sell the full range of products due to the associated costs for programming and other reasons. Additionally, the average hearing health care professional may sell only about 20 hearing aids per month, limiting access to volume discounts (Strom, 2014b), or sell only one brand of hearing aid. These marketing and sales strategies can restrict competition and the associated benefits that competition provides for consumers.

The average retail price for a pair of hearing aids in 2013 was $4,700 (bundled price which includes professional services) (range: $3,300–$6,000) (Strom, 2014b). According to an industry estimate, 2.9 million hearing aids were dispensed in the United States during 2013, with approximately 20 percent dispensed by the Department of Veterans Affairs (VA) (Strom, 2014a). This number was estimated to be an increase of 4.8 percent over the previous year (Strom, 2014b). Globally, hearing aid sales were estimated to be 10.8 million in 2012, with total sales of $5.4 billion on the wholesale market. Of these, 45 percent were sold in Europe, 29 percent in North America, and 26 percent in other regions (Kirkwood, 2013).

A 2013 survey of hearing health care professionals (179 responding from 42 states) found the total weighted average price to the consumer to be $1,657 per economy-level hearing aid, $2,196 for a mid-level hearing aid, and $2,898 for a premium-level hearing aid, resulting in an average price of $2,363 per hearing aid of any level (it was not specified whether services were included in these prices) (Strom, 2014b). The respondents

[2] Personal communication. Letter to the Committee on Accessible and Affordable Hearing Health Care for Adults, from Kathleen Mennillo, Executive Director, International Hearing Society. Received January 15, 2016. Available by request from the National Academies of Sciences, Engineering, and Medicine Public Access Records Office. For more information, email PARO@nas.edu.

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indicated that 37 percent of hearing aids dispensed were in the premium level, 44 percent in the mid-level, and 19 percent in the economy level. Respondents reported that 84 percent of fittings were for binaural hearing aids—the consumer purchasing two devices—with some providers offering discounts on the second hearing aid (Strom, 2014b). The pricing of "high end" hearing aids so that they are much more expensive than "basic" hearing aids implies a substantial benefit to the consumer for using high-end devices; however, few studies have been conducted to examine the benefit to consumers, particularly regarding effectiveness in real-world listening environments (see Chapter 4). A study by Cox and colleagues (2014) found little functional benefit to justify the price disparity between these two levels of hearing aids, which can be as much as several thousand dollars. Additional consumer price data for hearing aids are presented in Table 5-1.

The VA procures hearing aids for its beneficiaries directly from hearing aid manufacturers as part of large-volume contracts. According to one report published in early 2014, the VA paid an average of $369 per hearing aid, while one vendor's retail price for a similar hearing aid in the open market was $1,400–$2,200 (VA Office of the Inspector General, 2014). The VA's negotiation power may be due to their bulk purchasing of large numbers of hearing aids. As noted earlier, the VA's hearing aid purchases made up approximately 20 percent of the U.S. hearing aid market in 2013 (Strom, 2014a); in fiscal year 2014, the VA issued nearly 800,000 hearing aids (Chandler, 2015). In addition to the effects of bulk purchasing on hearing aid prices, another key difference between the price paid by the VA and the price paid by the public lies in paying for professional services associated with the hearing aid purchase. As discussed above, the retail price for the general public is often bundled to include the prices for both the hearing aid(s) and the professional services. The VA, on the other hand, negotiates a price that is only for the hearing aid itself, with fitting and rehabilitative services provided by audiologists and other providers employed by or partnered with the VA; the expenses for these professional services are not part of the price the VA pays to manufacturers for hearing aids. The VA report referenced above did not specify whether additional services were included in the vendor's open market price of $1,400–$2,200. The VA purchasing system provides a glimpse into what may be wholesale or bulk-purchasing prices and demonstrates the potential for and feasibility of lower priced hearing aids.

As discussed in Chapter 4, technologies are rapidly changing and lower cost technologies (e.g., over-the-counter wearable hearing devices) are being explored that could potentially meet the demands of many adult consumers with mild to moderate hearing loss. Currently, there are consumer electronic products termed personal sound amplification products (PSAPs; see Chapter 4) that range in cost from less than $50 to more than $500 (see

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TABLE 5-1
Examples of Retail Prices for Hearing Aids and PSAPs

Retail Price	Reference
$1,800 per aid (2004)[a]	Donahue et al., 2010
$1,601 per aid (2008)[b]	Kochkin, 2009
Range of $1,182 to $2,876 per aid[b]	Kirkwood, 2009
Range of $1,000 to $6,000 per pair[b]	*Consumer Reports*, 2015
Average price $1,986 (2007)[b] Prices include professional services such as evaluation, selection, fitting, training, and care: Behind-the-ear: $1,149 to $2,672[a] Completely in the canal: $1,364 to $2,860[a] In the canal: $1,309 to $2,744[a] In the ear: $1,204 to $2,686[a] (not specified if price is per aid or per pair of hearing aids)	Johnson, 2008
$299 per aid via direct mail[b]	Kochkin, 2014
$1,500 per aid with custom fitting, although exact services included were not specified (survey included individuals receiving hearing aids through the Department of Veterans Affairs)	Kochkin, 2014
Average retail price per aid (2013): $1,657 for economy level[b] $2,196 for mid-level[b] $2,898 for premium level[b] $2,363 average price[b] (total weighted average of five brands and types of aids)	Strom, 2014b
Examples of range of economy level prices per aid in retail stores: $399.00 to $499.99	Costco Wholesale, 2016b; Walmart, 2016
Less than $50 for PSAP[b]	Kochkin, 2010
$25 to $500 for a PSAP[b]	*Consumer Reports*, 2015

NOTES: Many of these prices are from studies funded by the hearing aid industry. Prices reported as per aid (i.e., for one ear) or per pair (i.e., for two ears) depending on the unit used in the referenced source.

[a]Price includes professional services and technologies.

[b]Not specified what price includes in terms of services.

Table 5-1) and may overlap in some or many of the technological features that hearing aids have. Food and Drug Administration guidelines note that these products cannot be marketed for the intended purpose of addressing hearing loss. Product standards are being developed for PSAPs that may facilitate comparisons for consumers (see Chapter 4).

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TYPES OF COVERAGE AVAILABLE FOR TECHNOLOGIES AND SERVICES IN THE UNITED STATES

Medicare

Original Medicare

Services Original Medicare (also known as Medicare Part A and Part B) covers costs associated with hospital stays and outpatient services and supplies considered medically necessary to diagnose and treat a disease or condition. As part of the Patient Protection and Affordable Care Act (ACA), Medicare beneficiaries are eligible for an Initial Preventive Physical Exam when they turn 65 years old (CMS, 2015b) and an Annual Wellness Visit every year thereafter (CMS, 2015a) performed by a physician or other qualified health care provider. These visits can include screening for hearing impairment at no additional cost to the beneficiary (Koh and Sebelius, 2010). Medicare also covers hearing testing only if it is ordered by a physician or nonphysician medical practitioner for the purpose of diagnosing a hearing or balance disorder (CMS, 2016e). Audiologists can be reimbursed for conducting this testing if ordered by a physician or nonphysician medical practitioner (see Chapter 3). However, beyond this hearing test, Medicare does not pay for any other services provided by audiologists to beneficiaries, such as counseling about hearing test results, conducting a functional communication assessment, management planning, or auditory rehabilitation, even though these services are within the scope of practice of audiologists.

Medicare does cover rehabilitation services related to hearing when the services are provided by a speech-language pathologist, however (ASHA, 2016a). Services provided by a speech-language pathologist generally include evaluation and treatment to regain and strengthen speech and language skills, including cognitive and swallowing skills. In the case of patients with hearing loss (but not balance disorders), evaluation for and treatment with auditory rehabilitation can be performed by a speech-language pathologist and be covered by Medicare. Medicare payment for these services provided by a speech-language pathologist must be billed using a general speech-language pathology Current Procedural Terminology (CPT®) code, not a code that is specifically for rehabilitating these particular functions. Extending Medicare coverage of auditory rehabilitation to provide reimbursement to audiologists, whom many consumers and patients are already seeking out for other elements of hearing health care, would make this treatment more affordable for Medicare beneficiaries.

Technologies As stipulated in the Social Security Amendments of 1965, Medicare does not provide coverage for hearing aids. Section 1862(a)(7)

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of the Act states, "Notwithstanding any other provision of this title, no payment may be made under part A or part B for any expenses incurred for items or services . . . where such expenses are for . . . hearing aids or examinations therefor." This policy is codified in the regulation at 42 C.F.R. 411.15(d), which states that hearing aids or examination for the purpose of prescribing, fitting, or changing hearing aids are excluded from Medicare coverage. The question of whether Medicare should cover hearing aids has been raised (Whitson and Lin, 2014); however, some hearing health care and hearing industry professional associations discourage this measure for many reasons, including the projected loss of revenue from private and out-of-pocket payers (Wallhagen, 2014).

Medicare Reimbursement in Other Health Care Fields

Evaluating options for expanding Medicare coverage of hearing health care can build on other areas of health care where coverage is already provided.

Habilitative and rehabilitative services by occupational therapists, physical therapists, and speech-language pathologists Medicare provides coverage for evaluation and treatment related to habilitative and rehabilitative services and related technologies including for physical therapy, occupational therapy, and speech-language pathology. These services may be provided as outpatient, inpatient, in-home when the person is homebound, or in a skilled nursing facility. There is an annual therapy cap limit to reimbursement (see Table 5-2), which means that Medicare may not always cover all rehabilitation services needed by an individual beneficiary before the therapy limit is reached.

Prostheses Medicare covers programming and follow-up after cochlear implantation. This is based on the classification of a cochlear implant as a prosthetic device and the surgical placement as a medical necessity. Medicare defines a prosthetic device as one that replaces a body part or function. Prosthetic devices covered by Medicare include cochlear implants, corrective eyeglasses or contact lenses provided after a cataract operation (coverage is 80 percent), breast prostheses, and ostomy bags (CMS, 2016g).

Medicare Advantage

Medicare Advantage (also known as Medicare Part C) is a program that allows those eligible for Original Medicare to opt out of Medicare itself and choose their own private insurance plan. For each beneficiary who opts out of original Medicare and opts into a Medicare Advantage program, the

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TABLE 5-2
Reimbursement for Outpatient Auditory Rehabilitation and Other Related Therapies Under Medicare Part B

	Audiologist	Occupational Therapist	Physical Therapist	Speech-Language Pathologist
Type of Therapy	Auditory Rehabilitation	Occupational Therapy	Physical Therapy	Speech-Language Pathology
Reimbursed?	No[a]	Yes	Yes	Yes
Therapy cap limit per patient in calendar year 2016 (deductible may apply)	Not applicable	$1,960	$1,960 (maximum allowed shared with speech-language pathology)	$1,960 (maximum allowed shared with physical therapy)

[a]See above discussion about speech-language pathology reimbursement for auditory rehabilitation.

SOURCE: CMS, 2016f.

federal government diverts the money it would have paid into Medicare to that enrollee's Medicare Advantage plan; depending on the plan, the beneficiary may have to pay an additional premium. Medicare Advantage allows the beneficiary to choose a plan that offers specific benefits that meet his or her needs. Some Medicare Advantage plans include coverage for hearing health care services and technologies, or they may offer the option to purchase extra coverage for hearing health care. As such, Medicare Advantage plans can serve as a source of hearing health care coverage for Medicare beneficiaries. Medicare Advantage plans are becoming increasingly popular, with approximately 31 percent of Medicare beneficiaries enrolled in a Medicare Advantage plan in 2015, a number that has increased steadily since 2004 (Kaiser Family Foundation, 2015).

Medicaid

Medicaid Coverage for Adults

As of early 2015, only 28 states covered hearing aid purchases for adult Medicaid beneficiaries, and the extent of coverage varied widely between states, with it being very limited in some states (HLAA, 2015). Many states that provide Medicaid coverage for hearing aids for adult beneficiaries require that an individual obtain a medical exam and an audiological evalu-

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ation to determine if a hearing aid is appropriate. Many states also have an established minimum hearing loss requirement for an individual to be eligible for hearing aids. Some states only cover certain types of hearing aids, and many have a limit on the number of hearing aids and accessories, such as batteries, that beneficiaries can receive within a given period of time. Some states set an annual cap on payments. Even when a state offers Medicaid coverage for hearing health care, finding a provider who will accept Medicaid can present another hurdle to overcome.

The Early and Periodic Screening, Diagnostic, and Treatment Program

The Early and Periodic Screening, Diagnostic, and Treatment (EPSDT) program is the child health component of Medicaid in which services are provided for children until they turn age 21 years (CMS, 2016a). As part of this program, each state must provide minimum hearing health care services to Medicaid beneficiaries under age 21 years, such as diagnosis and treatment, including hearing aids. When young adults covered by EPSDT turn 21 years old, they transition to the adult Medicaid program, if eligible, and receive the Medicaid hearing health care benefits provided by the state in which they reside. Thus, young adults may receive hearing health care benefits through the EPSDT program and then lose the benefits on their 21st birthday if their state Medicaid program does not provide hearing health care benefits to adults, which can make the transition to adulthood more challenging. It is important to note that states are not required to extend their EPSDT program to those who are covered by their Children's Health Insurance Program, which supports uninsured children and young adults up to 19 years of age if their families have an income that is too high for them to qualify for Medicaid.

Affordable Care Act

The ACA established state-level health benefit exchanges that provide access to a marketplace of affordable health insurance coverage for people who were previously uninsured and did not qualify for Medicaid. The ACA also offers states the option to expand their Medicaid programs to cover more people—anyone whose family income is up to 138 percent of the federal poverty line (CMS, 2016d).

While the ACA has improved access to medical services for many people, it has not substantially improved access to affordable hearing health care for adults. Under the ACA, individual state marketplace health insurance plans and expanded Medicaid programs are required to cover 10 "essential health benefits," including "rehabilitative and habilitative services and devices (services and devices to help people with injuries, disabilities,

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or chronic conditions gain or recover mental and physical skills)" (CMS, 2016b). The specific interpretation of what constitutes the benefit varies by state. Many states have chosen benchmark insurance plans that do not include hearing health care services or hearing aids for adults; if the benchmark plan does not include hearing health care coverage, then the expanded Medicaid program (if the state chose to expand) and the plans offered in that state's marketplace are not required to offer hearing health care coverage. Out of 50 states and the District of Columbia, only 7 states (Arizona, Hawaii, Nevada, New York, Rhode Island, Texas, and Wisconsin) have chosen benchmark plans that offer hearing aid coverage for adults, with the amount of the benefit and coverage for hearing aid–related services varying by state (CMS, 2016c). Other states have chosen benchmark plans that include hearing aid coverage for children defined in a variety of ways ranging from newborns to individuals under age 24 years.

Employer-Sponsored and Private Health Insurance

Third-party payment for hearing health care is limited; only a small number of private insurance companies cover hearing health care for adults (Andrews, 2012; *Consumer Reports*, 2015). Employer-based coverage for hearing health care tends to be modest at best. Of those insurance plans that provide some coverage of hearing health care, some cover diagnostic and evaluation services, while others cover part or all of the costs for hearing aids, and some employers offer their employees the option to purchase hearing health care insurance similar to optional dental or vision insurance (ASHA, 2016b).

Many adult Americans under the age of 65 years (i.e., the age to qualify for Medicare) are covered by employer-sponsored health plans, which are regulated under the federal Employee Retirement Income Security Act of 1974[3] (ERISA). There are two distinct types of ERISA plans: (1) those in which employers purchase health insurance coverage for their employees from a private health insurer or health maintenance organization (HMO), with the latter parties bearing the "insurance risk" of plan insolvency; and (2) employer "self-funded" plans in which the employer in effect "self-insures" the health care costs for its employees and bears the insurance risk itself but possibly engages an insurer to assist with claims administration or other non-risk-bearing functions for an agreed-upon fee. This distinction is important because it affects the degree to which state legislators and regulators can impose requirements—such as that employers must offer hearing health care insurance—on employer-sponsored health plans. States can

[3]Employee Retirement Income Security Act of 1974, Public Law 93-406, 93rd Cong. (September 2, 1974).

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legislate benefits mandates that apply to commercially sold health insurance or HMO plans, and these mandates will affect employer-sponsored plans to the extent that employers purchase such policies for their employees. However, because of a legal doctrine known as "ERISA preemption," states cannot impose benefits mandates on ERISA self-funded plans. Thus, employers that offer self-funded health plans are not subject to state-imposed benefits mandates. Large employers may elect to use self-funded plans because their large workforces may be diversified enough to make the insurance risk financially manageable.

As of 2014, only three states—Arkansas, New Hampshire, and Rhode Island—mandated that health insurance plans include coverage for hearing aids (with some specifically stating that related services were included) for adults (ASHA, 2016c). In addition, self-insured plans are exempt, meaning that large companies that have their own insurance programs and that may hire thousands of employees do not have to provide coverage to their employees even if they are in a state with mandated coverage.

Employees who have access to a flexible spending arrangement, regardless of hearing health care insurance coverage, can contribute pretax income (up to a prespecified amount, the maximum being $2,550 in 2015) to their flexible spending arrangement to cover the costs of hearing aids, hearing exams, and other audiological services—in addition to all other medical costs—during the year (IRS, 2016). With this type of arrangement, the employee bears some risk because he or she must use the funds during the calendar year, and if the employee does not incur medical expenditures during the year, he or she will lose the funds (although some employers give their employees a grace period of up to 2.5 months into the following year to use the money in the account or they may allow their employees to carry over up to $500 per year to use in the following year).

Some Federal Employee Health Benefits plans—which cover many federal employees and members of the U.S. Congress—other fee-for-services plans, and HMO plans provide coverage for hearing aids and other services for adults (HLAA, 2008). The comprehensiveness of the benefits depends on the individual plan.

TRICARE, which provides health care for members of the military, military retirees, and their families, covers hearing aids and hearing aid services for beneficiaries with hearing loss that meets specific parameters (TRICARE, 2015). Military retirees may be able to access VA services for hearing health care (see next section on benefits for veterans) or access the Retiree-At-Cost Hearing Aid Program, which is available at certain military hospitals and clinics (MAA, 2016; TRICARE, 2015).

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Benefits for Veterans

Audiology is one of the highest demand services in the VA; hearing loss and tinnitus are the two most prevalent causes of service-connected disability for U.S. military veterans (Chandler, 2015; VA Office of the Inspector General, 2014). These conditions affect veterans of all ages and may not be apparent until years after military service has ended. The VA provides diagnostic audiology services for all veterans enrolled in the VA's health care system, and hearing aids are provided at little or no cost to veterans who have a predefined minimum hearing loss that is determined to be the result of active military service (Beck, 2015) (38 C.F.R. 3.385). In some cases, veterans can receive hearing aids if their hearing loss is not directly related to their military service (38 C.F.R. § 17.149).

The VA's audiology services include the assessment, evaluation, treatment, and management of hearing loss and tinnitus; the fitting and programming of hearing aids and hearing assistive technologies and rehabilitation with cochlear implants and other bioelectric auditory implants; hearing screening and prevention services; and auditory rehabilitation services to optimize residual hearing.

Vocational Rehabilitation Programs

The Rehabilitation Act of 1973[4] authorizes and funds state vocational rehabilitation programs to assist individuals with a physical or mental disability that is a barrier to gaining part- or full-time employment or engaging in post-secondary education. Furthermore, it must be determined that vocational rehabilitation will help the individual with gaining employment or post-secondary education. Eligible individuals work with a counselor to create an Individualized Plan for Employment.

The program provides services, such as counseling, and devices to assist eligible individuals of all ages with disabilities. In 2014 the Workforce Innovation and Opportunity Act[5] amended the Rehabilitation Act of 1973 to require that all state vocational rehabilitation agencies dedicate at least 15 percent of their federal funds to services for young adults transitioning from secondary education to post-secondary education or employment. Efforts to aid young adults include summer programs for students with hearing loss transitioning to college (see Chapter 6).

For individuals with hearing loss or deafness, vocational rehabilitation services can include the provision of hearing aids and other hearing health

[4] Rehabilitation Act of 1973, Public Law 93-112, 93rd Cong. (September 26, 1973).

[5] Workforce Innovation and Opportunity Act, Public Law 113-128, 113th Cong. (July 22, 2014).

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care services if needed for obtaining employment. Vocational rehabilitation services are administered by state programs with funding primarily through the Department of Education's Rehabilitation Services Administration (RSA, 2016). State vocational rehabilitation agencies can and do differ in the way they operate, including how they operate when they have insufficient funds to support all eligible individuals. During these times, by law a state vocational rehabilitation agency determines priority for clients by a process called Order of Selection for Services. Under this process, individuals determined to have the most significant functional limitations are given the highest priority for benefits, while others who are determined to have less severe disabilities may be placed on a waiting list to receive services. The determination of which functional limitations should be given the highest priority is left to the state. Order of Selection for Services may reduce access to vocational rehabilitation services for people with hearing loss as they may not be seen as having as significant a functional limitation as other individuals (University of Arkansas Rehabilitation Research and Training Center, 2008).

One of the challenges identified by state vocational rehabilitation agency staff is raising awareness in the general public, particularly among individuals with hearing loss, that vocational rehabilitation programs exist and may be able to provide them with needed hearing technologies and services.[6] Opportunities to disseminate this information more widely include collaborations among state and local disability agencies and through hearing health care professionals, as well as through advocacy organizations.

LESSONS LEARNED FROM HEARING HEALTH CARE BENEFITS PROVIDED IN OTHER COUNTRIES

Several countries with comparable development and resources to the United States provide some form of public hearing health care funding, which offers a number of funding models from which the U.S. hearing health care system can learn (see Table 5-3). The extent of coverage for technologies and services varies widely, including the extent to which maintenance, batteries, and repair are covered. Wait times to see a professional for the purpose of accessing hearing health care can be several months in some public health systems, which may lead some individuals with hearing loss to choose self-pay options to avoid long wait times.

In some countries that subsidize the cost of hearing aids or provide them free of charge, use of the devices is greater than in the United States (see Chapter 4), but market survey data indicate that the rates of use are still

[6] Personal communication, B. Bell, Alabama Department of Rehabilitation Services, February 16, 2016.

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TABLE 5-3
Examples of Countries with Publicly Funded Hearing Health Care for Adults

	Australia	Denmark	Finland	Germany	Switzerland	United Kingdom
Who is eligible for public coverage?	Adults with a pension, disability, veteran, or under age 26 years	All	All	All	Working adults with disability insurance or retired adults	All
Public coverage for basic hearing aid and related services	100%	100%	100%	Fixed subsidy	Fixed subsidy; covers ~75% for retirees	100%
Public coverage for batteries, repair, maintenance	Yearly fee	Batteries: covered Repair and maintenance: covered	Batteries: usually not covered Repair and maintenance: usually covered	Batteries: not covered Repair: usually covered	Batteries: subsidized Repair: subsidized	Batteries: covered Repair and maintenance: covered
Wait times to receive care	Public: 4–8 weeks Private: minimal	Public: 10–84 weeks Private: none	Public: 8–24 weeks Private: shorter wait time	None	None	Public: ~18 weeks Private: minimal
Uptake of hearing aids by those with hearing loss	39%	47.8% (50.0% of people 18+ years)	< 15%	34.9% (35.0% of people 18+ years)	41.4% (41.9% of people 18+ years)	42.4% (42.7% of people 18+ years)

SOURCES: Anovum, 2016a,b,c,d; Australian Government Office of Hearing Services, 2016a,b; Bisgaard, 2009; Egbert et al., 2012; Hear-it.org, 2016a,b,c,d,e; National Health Service, 2015.

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low even in these countries (see Table 5-3). Population-based epidemiological studies of hearing loss have similar findings: In the Age, Gene/Environment Susceptibility–Reykjavik study (Iceland), hearing aids were found to be used by 21.9 percent of the participants with hearing loss (Fisher et al., 2015). Use was strongly related to the severity of hearing loss and ranged from less than 10 percent usage among those with mild loss to more than 90 percent of those with severe hearing loss (≥ 65 decibel hearing level). In addition to the severity of hearing loss, another, independent predictor of whether an individual used a hearing aid was self-reported hearing loss.

A similar effect was seen in the Blue Mountains Hearing Study (Australia), where the cost of hearing aids was subsidized for older adults with limited means. The 5-year incidence of hearing aid use was 18 percent and 48 percent, respectively, among participants with mild and moderate/severe bilateral hearing loss, was 6 percent among those with unilateral hearing loss, and was 23 percent overall. This was slightly higher than the 15 percent utilization rate reported in the Epidemiology of Hearing Loss Study (Wisconsin, USA) (Fischer et al., 2011; Gopinath et al., 2011). As in the study by Fischer and colleagues (2011), self-reported hearing loss was an independent predictor of the incidence of hearing aid use (Gopinath et al., 2011). Uptake rates in non-U.S. countries that provide subsidized or free hearing health care indicate that the cost of hearing aids is one of a complex combination of factors that contribute to an individual's decision of whether to seek help for hearing loss and is not necessarily the sole reason that some of those who could benefit from hearing aids do not get them (see Chapter 4 for other contributing factors).

INNOVATIVE APPROACHES TO IMPROVING AFFORDABILITY

Improving Transparency in Hearing Health Care Billing Practices

Over the past several years, questions have been raised about the use of a bundled model for hearing health care billing (described earlier in this chapter). First, there is a lack of transparency for the consumer regarding the itemized costs of professional services and technologies. Fees for services are included in the purchase price of the device, which raises the (apparent) cost of hearing aids to the consumer. Second, in the bundled model, prices include a package of services that the individual consumer may or may not use. In the bundled model, prices for services are generally set by computing the average number of appointments across a large number of patients for a specific time period (typically within the manufacturer's warranty period for the hearing aid or other technology or for a certain number of months after fitting). This calculation estimates the fee for providing services and running the business for the average patient in the practice, and this fee is

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then added to the retail price of the hearing aids. Third, bundled models may include services that are advertised as "free," such as hearing tests to determine candidacy for hearing aids and follow-up appointments. The advertised "free" hearing test may not include a comprehensive audiologic evaluation and functional communication assessment (see Chapter 3 for detailed description) but rather a screening-type evaluation, with a comprehensive exam included in the bundled cost presented to the consumer (if this exam is not covered by the consumer's insurance or Medicare as being a medically necessary evaluation). Thus, in a bundled billing system, individuals may be paying for services that they do not need (or may need but do not use), while not paying for or receiving additional services that they do need.

There is some evidence that improved transparency in health care services pricing can lead to substantial reductions in the prices paid by consumers (Reinhardt, 2014). For example, employers with self-funded health plans have used reference pricing to reduce health care costs; if an employee chooses a health care provider that charges more than a given price limit (i.e., the reference price), the employee then pays the difference in price for obtaining the device or service. Reference pricing has proven effective in lowering the price of orthopedic surgery, imaging, and laboratory tests (Robinson and MacPherson, 2012), and it proved to be an effective mechanism for lowering health care expenditures per capita for hearing aids in Germany (Baumler et al., 2008; Schreyogg et al., 2009).

Transparency in hearing health care billing could help to differentiate the cost of the technologies from professional fees for hearing tests, professional services to fit the device, and services to provide follow-up care as needed. This type of "fee-for-service" model is familiar to patients in other areas of health care where they are accustomed to paying for visits to health care professionals, including those providing a combination of devices and services, such as in the cases of physical therapy and dental care, or the separate costs associated with a procedure versus professional services, such as often occurs when billed for visiting a primary care provider and receiving a vaccination or laboratory test.

Separating out the price of the technologies from the price of associated professional services educates the consumer about the retail prices of hearing aids and facilitates a direct comparison of similar devices across manufacturers. A better understanding of the retail prices of hearing aids also makes it easier to make an educated evaluation of the added costs of special features and technologies, such as directional microphones, noise reduction, and multiple programs. In addition, transparent pricing allows consumers to distinguish among the many components of hearing health care services, and it can promote informed decision making by allowing individuals to make informed comparisons and choose the care appropriate and afford-

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able for them. Itemized and transparent lists of prices for technologies and professional services may help consumers understand all of the facets of services that may be helpful in addressing their hearing loss, including assessing the individual's functional communication abilities and the need for intervention, selecting and fitting of the hearing aid or other technologies as needed, auditory rehabilitation services to enhance communication, and ongoing care and support. Price transparency for hearing aids and hearing assistive technologies, professional services, and follow-up care is particularly relevant under new health insurance and health care financing models that are increasing consumer exposure to health care costs (HFMA, 2014).

With transparent pricing options available, consumers can choose to itemize and pay using a "fee-for-service" model. Alternatively, consumers may opt to pay for a separate "service plan" over a fixed period of time, but this package can be billed separately from the fees for pre-fit evaluations and the cost of the devices. Because in an unbundled model individuals are paying only for the services they need and use, unbundling has the potential to reduce the total cost of services for the individual. To further enhance transparency, individuals purchasing technologies should be notified by the seller that additional visits for more services may be necessary and whether the cost of any of those visits is included in the initial purchase price. This model may also lessen the need for a large upfront investment by the consumer because the fees are collected as services are used, which occurs over an extended period of time.

Increased transparency and itemized billing may also be of benefit to consumers who use a direct-to-consumer model of delivery (e.g., online ordering), who are traveling and may want assistance with their hearing aids, or who may want to seek assistance in learning how to use the devices to their full potential, to acquire needed accessories, or to obtain assistance with ongoing maintenance and repairs. Itemized billing provides a means for dispensers to establish a unique fee schedule for these services to provide care for individuals who already own their devices but still require assistance, thus reaching more people and increasing the likelihood that those who have hearing technologies will have opportunities to learn how to get maximal benefit from those technologies. It also provides the means for individuals who purchased technologies from one dispenser to obtain service from another dispenser should the individual move, become dissatisfied with the original dispenser, or have some other reason for wanting to see a different dispenser (see Chapters 3 and 4). Although increasing transparency in pricing can help consumers make more informed decisions, some consumers and their family members still might not know exactly what services they need and will require additional help. Consumer education that accounts for an individual's health literacy level will be needed to complement transparent pricing and itemized billing (see Chapter 6).

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Alternative Care Delivery Systems

As described in Chapter 3, a number of alternative and innovative systems for delivering hearing health care exist and continue to be tested. For example, telehealth models of care have been tested as ways to expand access to various types of health care services, including audiology, and can be particularly useful for patients living in rural areas (see Chapter 3). The use of community health workers is also being tested as a potentially cost-effective mechanism for expanding access, and it may be especially beneficial in bridging access gaps caused by health professional shortages and in providing culturally sensitive care in underserved communities. Additionally, retail clinics are being used to improve access and reduce the growing demands on primary care providers. These alternative approaches to care delivery have the potential to increase access, reduce disparities, promote efficiency and value, and reduce costs for consumers, insurers, and health care as a whole. This section will focus on the potential costs and reimbursement factors related to the provision of care under these models, as Chapter 3 already described these innovative models and considered how they could affect access to care while reducing disparities.

Community Health Workers

The World Health Organization—which supports the use of community health workers in low-income countries as a cost-effective approach to greatly expanding access, maximizing finite resources, and improving health outcomes—describes how community health worker programs can be integrated into larger health care systems (Global Health Workforce Alliance and WHO, 2010; McCord et al., 2013). As noted by McCord and colleagues (2013), the resulting close connections between the community health worker programs and the health care system can lead to such benefits as timely referrals, sufficient supervision, and evidence-based information and processes. Although the specific costs associated with community health worker programs (e.g., HIV and tuberculosis screening, nutrition, pneumonia care) in low-income countries are not relevant to this discussion (McCord et al., 2013), the types of operating costs for a community health worker–delivered program for hearing-related services are likely to be similar. For example, costs might include training, salary, and benefits for the community health workers; equipment for basic screening and education; consultation time for community health workers with health care professionals (e.g., audiologists); and other overhead costs (e.g., transportation, community engagement and outreach).

In the United States, information on the costs and cost effectiveness of community health worker–provided services is limited. A systematic review

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of evidence related to community health worker programs concluded that the available evidence was insufficient to assess and compare the cost effectiveness of the services provided (Viswanathan et al., 2010). Of the 53 studies identified for the review, only six featured data relevant to the cost or cost effectiveness of community health worker programs. The studies—which included interventions related to children's health, cancer screening, and the management of chronic health conditions (e.g., asthma and mental health)—found a large range of annual costs per patient ($52–$6,200) depending, in large part, on the intensity and follow-up requirements of the program (Viswanathan et al., 2010).

Using community health workers to extend access to hearing health care services is still in the very early phases of testing and implementation. In terms of cost, researchers affiliated with the Access HEARS program[7] in Baltimore, Maryland, have reported affordable preliminary outcomes, with the complete cost of the service provided plus the hearing product averaging approximately $200 per person served (Leaderman, 2015). If proven effective, this approach to basic care and treatment options could offer a significant reduction in costs for individuals with mild hearing loss when compared to the much higher cost (discussed earlier in this chapter) that might be required for clinical hearing health care services, which may be a barrier for some individuals. In Arizona, a partnership between academia, a local community, and a private, nonprofit Federally Qualified Health Center serving a mostly rural, low-income population employs Promotoras de Salud (i.e., community health workers) to deliver a hearing health education program in Spanish (Colina et al., 2016). Researchers from the University of Arizona are currently conducting a randomized controlled trial to evaluate the efficacy of this community health worker program to expand access to culturally and linguistically relevant hearing health care education and support. It is important to note that within each of the above-cited examples under research and development, mechanisms for referral and access to clinical care are embedded within the program. There is an ethical responsibility to provide underserved populations with equitable access to quality health care from well-trained professionals. Community health worker programs present novel ways to facilitate this access and make pathways to care more efficient. Currently, coverage and reimbursement for community health worker–provided services through

[7]The Access HEARS program (http://accesshears.com) was launched from the Johns Hopkins University and initially funded through a grant from the AARP Foundation. The program recently completed the proof-of-concept trial and hopes to achieve sustainability through fund raising and employ two full-time community health workers (Leaderman, 2015).

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Medicare, Medicaid, and other insurers are limited. However, the ACA has expanded reimbursement and funding opportunities for community health worker–provided services. For example, the ACA authorized the Centers for Disease Control and Prevention (CDC) to administer grants for various types of evidence-based interventions, including efforts to "educate, guide, and provide outreach in community settings regarding health problems prevalent in medically underserved communities," (CDC, 2015, pp. 4–5), which may represent an opportunity for hearing health care. The legislation also led to an amendment to the Centers for Medicare & Medicaid Services' rules regarding who may be paid for preventive services under the Medicaid program; although this ruling was not directly relevant to audiology, it may open a door for other types of services to be added in the future. Effective October 2013, nonlicensed care providers, including community health workers, may be eligible to receive payment under Medicaid, as long as these services are recommended by a licensed health professional (CDC, 2015; CMS, 2013). States are also establishing a more defined place for community health workers within the health care system through Medicaid. A policy brief from the CDC describes how individual states are authorizing Medicaid reimbursement for community health workers that goes beyond preventive services to integrate community health workers into team-based approaches to health care (CDC, 2015), which could lead to improved access and outcomes for individuals in underserved communities. Leveraging existing models of community health worker–provided services across the United States may provide opportunities for the hearing health care field.

Telehealth and Tele-Audiology

The use of telehealth has been promoted as a mechanism to expand access, improve care continuity and coordination, ensure quality, and increase value and efficiency (AMA, 2016; Klink et al., 2015). Telehealth can also save patients time and money on travel and transportation. For example, the Alaska Federal Health Care Access Network, which provides telehealth services in a state where approximately one-third of the population lives in a rural area, estimated a savings of $8.5 million in travel costs for Medicaid beneficiaries in 2012 (AHRQ, 2013; U.S. Census Bureau, 2012). However, the overall potential for costs saving and the cost effectiveness of telehealth is less certain and will depend on the type of care being provided, the health professionals providing the care, and the types of equipment and other resources needed to provide the care. A systematic review of literature concluded that telehealth services appear to be no more cost effective than conventional health care delivery mechanisms (Mistry, 2012). Despite these

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findings, telehealth, like retail clinics (described below), holds the potential to reduce expenditures on more expensive forms of care (e.g., emergency department visits), which would result in a net savings for payers and the health care system.

Inconsistencies and limitations related to reimbursement regulations have been cited as barriers to the wider adoption of telehealth (e.g., AMA, 2016; Klink et al., 2015). For example, Medicare coverage of telehealth services is currently limited to beneficiaries who live in rural areas; a defined set of services provided by specific providers;[8] and live, synchronous interactions between the patient and provider (CMS, 2015c). Legislation has been introduced in Congress to update Medicare's coverage of telehealth services: the Medicare Telehealth Parity Acts of 2014 and 2015 (H.R. 5380 and H.R. 2948), if enacted, would have expanded coverage beyond rural areas; included reimbursement for audiologists, speech-language pathologists, and other types of health professionals; and allowed remote patient monitoring for some chronic health conditions (Lacktman, 2015).

Many states have also enacted laws which provide for reimbursement through Medicaid and private insurances (Bachrach et al., 2015). Almost every state allows some form of reimbursement for telehealth services through Medicaid (48 total), and almost half have parity laws covering private insurances (24 total). However, the legal frameworks in many states set limits on the provisions of telehealth. For example, nine states have reimbursement restrictions related to distance or population density (e.g., distance between patient and provider, use in rural areas), and four states forbid the use of cell phone videos for the purposes of telehealth. Additionally, many states limit reimbursement to only cover live, synchronous interactions, prohibiting the use of remote patient monitoring, store-and-forward interactions, or transfer of saved images (Thomas and Capistrant, 2015). In its most recent gap analysis, the American Telemedicine Association, an advocacy organization that supports the broad implementation of telehealth in the United States, ranked Alaska as the most telehealth-friendly state in numerous categories (e.g., Medicaid reimbursement, the use of eligible technologies) (Thomas and Capistrant, 2015).

With regard to hearing health care in the United States, the use of telehealth services is currently limited due, in part, to reimbursement restrictions. As noted above, Medicare regulations do not include audiologists and speech-language pathologists as eligible providers of telehealth services (AAA, 2016; CMS, 2015c). However, Medicaid programs in some states do allow reimbursement for audiology services that can realistically be provided remotely. For example, earmold impressions cannot be taken

[8] I.e., physicians, physician assistants, specific types of nurses, registered dieticians and nutritionists, and clinical psychologists and sociologists.

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remotely, but teleprogramming of hearing aids could be covered in some states (AAA, 2016; ASHA, 2012). Beyond expanding access to care and reducing travel costs for patients, other possible cost savings associated with tele-audiology remain unclear. Given the uncertainties about time requirements, administrative and technical costs and requirements, and reimbursement coverage and rates, some hearing health care professionals may be reluctant to offer telehealth to their patients. Further investigation and policy changes will be required to ensure the widespread adoption of tele-audiology services that satisfy the needs and preferences of both patients and providers.

Retail Clinics

The number of retail clinics in the United States has increased by more than 9-fold in the past 10 years (from 200 in 2006 to more than 1,800), and estimates suggest that the number of visits to these clinics increased between 4- and 7-fold during roughly the same timeframe (Bachrach et al., 2015; Mehrotra and Lave, 2012). As described in Chapter 3 and in previous reports from the Institute of Medicine, these clinics offer a convenient and efficient alternative to some primary care services, which may also result in savings to patients, payers, and the health care system as a whole (IOM, 2010, 2011). For example, a 2010 study by Weinick and colleagues (2010) estimated that approximately 13 to 27 percent of emergency department visits could be managed safely and effectively in retail and urgent care clinics, representing a possible overall savings of approximately $4.4 billion dollars per year. However, questions remain about whether the increased availability of retail clinics in the last decade is reducing unnecessary emergency department visits or driving an increased utilization of health care services overall and thus increasing cost (Mehrotra, 2015).

In setting costs for patients, the retail clinic model uses a transparent, fixed pricing scheme in which prices for services are readily available or clearly posted in stores and online. The costs for most services range from $30 to $75, representing a significant savings to patients and insurers when compared with the cost of a visit to a physician's office or an emergency department (IOM, 2010; Mehrotra, 2015). For example, the cost of care in physicians' offices or emergency departments for the three most commonly treated conditions in retail clinics (i.e., otitis media, pharyngitis, and urinary tract infections) ranges from approximately $160 to more than $550, whereas care for those conditions in a retail clinic cost approximately $100[9] (IOM, 2010; Mehrotra, 2015; Mehrotra et al., 2009). Although

[9]These estimates include the cost of the consultation with the health care professional(s), pharmacy/prescription services, and laboratory expenses (Mehrotra et al., 2009).

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most retail clinics accept health care insurance—Medicare, Medicaid, and private insurance—and some insurance companies encourage the use of retail clinics by reducing or waiving copay fees, approximately 35 percent of patients choose to pay for services out of pocket (IOM, 2010; Rudavsky et al., 2009). The lower costs for these services can be attributed to the use of less costly health care professionals (e.g., nurse practitioners, physician assistants); efficient models of care that implement clearly defined care protocols, algorithms, and clinical practice guidelines; and new technology.

The services offered through retail clinics are evolving to include management for some chronic health conditions, and more retail clinics are being integrated into health care systems as a way of ensuring timely referrals, improving care coordination, and possibly lowering costs for payers (Bachrach et al., 2015), further opening the possibility of including hearing health care services. Just as community health workers can be trained to administer basic audiometry services and technologies in underserved communities, so too can health care professionals in retail clinics, as is currently being considered by the partnership between the Walgreens Boots Alliance and Connect Hearing (Sonova) (see Chapter 3). Costco Wholesale warehouses offer another retail example with approximately 500 hearing aid centers located in Costco Wholesale warehouses across the United States. These hearing aid centers offer hearing tests and sell hearing aids from four of the six largest hearing aid manufacturers at prices lower than average retail prices (from $499.99 per hearing aid) (Costco Wholesale, 2016b; Kirkwood, 2014; Stock, 2013) (see Table 5-1). Costco Hearing Aid Centers also provide free follow-up care and assistance with cleaning (Costco Wholesale, 2016a). Although this model offers more affordable options to those who have a Costco membership, there are concerns about the lack of training some Costco Hearing Aid Center employees have (e.g., Kasewurm, 2014). In conjunction with companies that operate retail clinics, researchers, health care professionals, health care systems, and regulators, the hearing health care field needs to determine which services and treatments can be provided in retail clinic settings and still ensure high-quality, cost-effective care that is integrated with other hearing health care professionals and services.

NEXT STEPS AND RECOMMENDATIONS

In the hearing health care system that serves adults, nearly all costs are out of pocket and the costs are relatively high. The vast majority of employers do not provide hearing health care insurance. Few state Medicaid programs offer hearing health care benefits without strict limitations. Vocational rehabilitation programs offer a tremendous benefit for those with hearing loss who are seeking employment, but wait times can be long, and

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those with hearing loss who are seeking assistance can be skipped over in order to help those who have disabilities considered to be more prohibitive for gaining employment. Given the high number of Americans who have hearing loss and the high cost of hearing health care, changes to the cost of hearing health care are needed.

Goal 9: *Improve Affordability of Hearing Health Care*

Recommendation 9: The Centers for Medicare & Medicaid Services (CMS), other relevant federal agencies, state Medicaid agencies, health insurance companies, employers, hearing health care providers, and vocational rehabilitation service agencies should improve hearing health care affordability for consumers by taking the following actions:

- **Hearing health care professionals should improve transparency in their fee structure by clearly itemizing the prices of technologies and related professional services to enable consumers to make more informed decisions;**
- **CMS should evaluate options, including possible statutory or regulatory changes, in order to provide coverage so that treating hearing loss (e.g., assessment, services, and technologies, including hearing aids) is affordable for Medicare beneficiaries;**
- **CMS should examine pathways for enhancing access to assessment for and delivery of auditory rehabilitation services for Medicare beneficiaries, including reimbursement to audiologists for these services;**
- **State Medicaid agencies should evaluate options for providing coverage for treating hearing loss (e.g., assessment, services, and hearing aids and hearing assistive technologies as needed) for adult beneficiaries;**
- **Vocational rehabilitation agencies should raise public awareness about their services that enable adults to participate in the workforce, and they should collaborate with other programs in their respective state to raise this awareness;**
- **Hearing health care professionals and professional associations should increase their awareness and understanding of vocational rehabilitation programs and refer as appropriate; and**
- **Employers, private health insurance plans, and Medicare Advantage plans should evaluate options for providing their beneficiaries with affordable hearing health care insurance coverage.**

Goal 10: *Evaluate and Implement Innovative Models of Hearing Health Care to Improve Access, Quality, and Affordability*

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Recommendation 10: The Centers for Medicare & Medicaid Services, the Patient-Centered Outcomes Research Institute, the Agency for Healthcare Research and Quality, the National Institutes of Health, the Centers for Disease Control and Prevention, the Health Resources & Services Administration, the Department of Defense, the Department of Veterans Affairs, researchers, and health care systems should prioritize and fund demonstration projects and studies, including randomized controlled trials, to improve the evidence base for current and innovative payment and delivery models for treating hearing loss.

Specifically,

- Innovative models to be evaluated should include, but not be limited to, community health workers, telehealth, mobile health, retail clinics, and self-administered hearing health care. These projects and studies should include outcomes that are patient centered and assess value, comparative effectiveness, and cost effectiveness.
- Demonstration projects should evaluate the health impact of beneficiary direct access to audiologist-based hearing-related diagnostic services, specifically to clarify impact on hearing health care accessibility, safety, and the effectiveness of the medical home. This excludes direct access to audiologic testing for assessment of vestibular and balance disorders and dizziness, which require physician referral. Successful outcomes would provide evidence of effective communication and coordination of care with primary care providers within a model of integrated health care, and evidence of appropriate identification and referral for evaluation of medical conditions related to hearing loss and otologic disease.
- Models that are found to be most effective should be widely implemented.

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6

Engaging a Wider Community: Awareness, Education, and Support

Hearing plays a vital role in how individuals experience, interact with, and relate to the people and environment around them. Hearing is sometimes referred to as the "social sense" because of its function in developing and maintaining intimate relationships and social connections with family, friends, coworkers, and acquaintances. As described in Chapter 1, the social-ecological model depicts the complex network that encompasses the interplay among individuals and their families, the social networks and relationships in their lives, the organizations and institutions that provide services and support to the individuals, the communities in which the individuals work and live, and society at large. Supporting individuals with hearing loss requires adaptable solutions that span society—not just solutions geared toward individuals with hearing loss or solutions within the context of a medical model that revolves around the delivery of care and services in a health care setting. Components at all levels of the social-ecological model can contribute to hearing health and overall well-being.

This chapter focuses on education, support, and awareness for individuals with hearing loss, their families, their communities, and society as a whole. Attitudes and beliefs about hearing loss and the use of hearing health care services and technologies are explored from the perspectives of individuals and family members, employers and coworkers, and the general public, including the media. The chapter provides insights on the role of health literacy, the Internet, community-based support, and the built environment, such as public and private spaces that can be designed or altered to enhance acoustics and accessibility, and it also describes how these fac-

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tors can empower individuals with hearing loss. The chapter also examines the role of the community, organizations, and the public in supporting individuals with hearing loss and considers whether attitudes about hearing loss have improved with the increasing use of technology, specifically mobile technologies. Finally, the chapter highlights areas of focus for next steps as well as research priorities that are essential for optimizing support and access for individuals with hearing loss.

Although the knowledge, attitudes, education initiatives, and community support associated with other health conditions, such as HIV/AIDS, epilepsy, cancer, and substance use and mental health, have been well studied and are thoroughly described in published, peer-reviewed literature and in previous Institute of Medicine (IOM) reports (e.g., IOM, 2006, 2012; IOM and NRC, 2005), the literature about hearing loss is considerably more limited and is often based on relatively small samples (frequently less than 100 individuals) and anecdotal evidence. In conducting its literature searches and reviews for this chapter, when possible the committee focused on articles that were relatively recent—less than 15 years old—because of the natural evolution in attitudes and beliefs that are often associated with advances in technology, changes in education, and shifts in societal norms.

INDIVIDUALS AND FAMILIES

Living with hearing loss or having a loved one with hearing loss, especially when the loss is severe or untreated, has the potential to affect many aspects of everyday life and can be associated with a diminished quality of life (see Chapter 2). Hearing loss has been associated with serious health comorbidities such as depression, anxiety, low self-esteem and insecurity, social isolation, stress, mental fatigue, cognitive decline and dementia, reduced mobility, falls, and mortality (see Chapter 2). As described in earlier chapters, both the severity of hearing loss and the impact that hearing loss has on individuals' lives vary. These variations combined with numerous individual-specific factors (e.g., environment, available support, attitudes, preferences, or socioeconomic status) create unique circumstances for each person with hearing loss. Recognizing these individual circumstances and empowering individuals and their families to take action and to become familiar with the full range of options for managing hearing loss is fundamental to maximizing quality of life and ensuring that individuals with hearing loss and members of their families have every opportunity to thrive. Individual empowerment should be built on a foundation of awareness, education, and support, where individuals and families play a central role within a constellation of other entities across the social-ecological model (see Chapter 1), including health care providers, employers, advocacy or-

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ganizations, communities, and the public—all of which can contribute to empowerment.

Attitudes and Beliefs

People with hearing loss may perceive and experience a range of feelings and emotions about hearing loss, seeking care, and using such technologies as hearing aids. Negative attitudes and beliefs about hearing loss can originate both internally—arising from the beliefs and attitudes of the individual experiencing the hearing loss—and externally—produced by the beliefs and attitudes held by various social connections, including family members, friends, health care professionals, employers and coworkers, the general public, and the media. When considering how hearing loss may affect self-perception and social identity, many individuals cite fears of feeling or being perceived as old, frail, less capable, vulnerable, uninteresting, unattractive, or less desirable or as having a disability or cognitive impairment (Habanec and Kelly-Campbell, 2015; Kochkin, 2007b; Munro et al., 2013; Southall et al., 2010; Wallhagen, 2010). Because of these perceptions, people may hide their hearing loss or deny that it affects their lives, may opt not to seek treatment, or may choose not to use hearing aids after they have been purchased.

Similar to many other health conditions, attitudes and beliefs about hearing loss are directly linked to behavior (Glanz et al., 2008; van den Brink et al., 1996). Studies of older adults have demonstrated that hearing loss is often accepted as a natural part of aging that does not require intervention and that individuals often believe that hearing aids are not effective or that they only marginally benefit the user (Kochkin, 2000; McCormack and Fortnum, 2013; Ng and Loke, 2015; Oberg et al., 2012; van den Brink et al., 1996). As discussed in Chapter 4, there are numerous reasons why individuals choose not to adopt or use hearing aids or choose not to seek hearing health care. One notable factor is attitude. In a market survey, Kochkin (2007b) found that attitudes and stigma played a sizable role in decisions about hearing aid adoption. Two-thirds of survey respondents reported negative attitudes that resulted from problems with hearing aid performance, and almost half chose not to use a hearing aid due to some form of perceived stigma; respondents specifically noted embarrassment, pride, and fear of being viewed by others as old or frail or as having a physical or mental disability (Kochkin, 2007b).

In a longitudinal study of experienced and reinforced stigma among older adults with hearing loss and their communication partners,[1] Wallhagen (2010) developed a model of the interaction between three primary areas

[1] A communication partner can be a spouse, partner, family member, or friend who frequently converses with the individual who has hearing loss.

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of experienced stigma—self-perception, ageism, and vanity—and reinforced stigma (see Figure 6-1). The specific attitudes and beliefs that are described converge and affect decisions about whether to be evaluated for hearing loss, to seek treatment, and to use hearing aids and hearing assistive technologies. These types of beliefs, misperceptions, and stigmas, in combination with other barriers described earlier in the report (e.g., affordability, accessibility), can directly hinder action and timely access to the kinds of high-quality care and community-based services that can help greatly to optimize quality of life and overall well-being.

The attitudes and beliefs of spouses, partners, family members, and friends are also highly influential in decision making and can either help to overcome or reinforce the perceived stigma associated with hearing loss and the use of hearing aids and other technologies. Positive attitudes and beliefs of partners and family members, along with greater levels of family support, have been associated with seeking help for hearing loss, the successful adoption and use of hearing aids, and increased self-efficacy in the use of hearing aids (Dawes et al., 2014; Hickson et al., 2014; Meyer and Hickson, 2012; Meyer et al., 2014; Ng and Loke, 2015). In fact, Hickson and colleagues (2014) concluded that the strongest indicator of positive outcomes for hearing aid use was having the support of family, friends, and significant others. Conversely, negative attitudes of family members—such as perceptions of old age, disability, and poor aesthetics—contribute to delays in disclosing

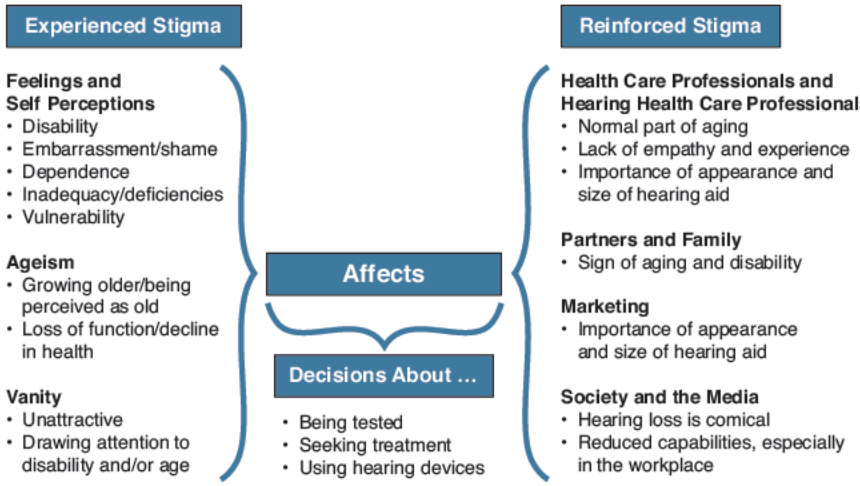

FIGURE 6-1 The interrelationship between experienced and reinforced stigma and how stigma can affect decision making for people with hearing loss.
SOURCE: Adapted from Wallhagen, 2010. Reprinted with permission of Oxford University Press.

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hearing loss, seeking help, and using hearing aids (Kochkin, 2007b; Meyer and Hickson, 2012; van den Brink et al., 1996; Wallhagen, 2010). The attitudes and support of others, especially loved ones, do matter and can have a meaningful effect on the attitudes and beliefs of the individual with hearing loss, which in turn can promote action.

Although experienced and perceived stigma can prompt delays in disclosing hearing loss and seeking assessment and treatment (Clements, 2015; Southall et al., 2010; Wallhagen, 2010) (see Figure 6-1), not everyone manages stigma and negative attitudes in the same way. Some individuals tend to have more positive attitudes and to be more resilient and are able to overcome the effects of stigma by pursuing positive opportunities, learning new skills to manage the hearing loss, and seeking out interactions with others who have hearing loss (Shih, 2004; Southall et al., 2010; Wallhagen, 2010). Some individuals look within their social circles for support or focus on the possible benefits that treatment can offer. Studies demonstrate that, among other factors, people with more positive attitudes and expectations are more likely to be empowered to take action and experience success with treatment options such as hearing aids and communication programs (Laplante-Lévesque et al., 2012b; Ng and Loke, 2015; van den Brink et al., 1996). This ability for some to thrive in spite of perceived stigma presents an opportunity for educating others and fostering resilience among individuals with hearing loss. Resilience and educational interventions, for both individuals with hearing loss and their families, should be studied in greater depth in order to develop and evaluate techniques and adaptable programs that can encourage resilience and enable individuals to overcome barriers and take action in communities across the country.

Health Literacy and Understanding Hearing Loss

Health literacy is defined as "the degree to which individuals have the capacity to obtain, process, and understand basic health information and services needed to make appropriate health decisions" (Ratzan and Parker, 2000, p. vi). It was elevated to a national public health priority following the 2000 release of the goals and objectives for the Healthy People 2010 initiative and the release of the IOM report *Health Literacy: A Prescription to End Confusion* in 2004 (HHS, 2000; IOM, 2004). Adults more than 65 years old; racially and ethnically diverse populations, especially Hispanic adults; people with lower socioeconomic status (i.e., lower levels of education and income); and people with disabilities all tend to have lower levels of health literacy, as do more men when compared with women (Kutner et al., 2006; NCHS, 2012). In recent years, health literacy researchers have uncovered various serious consequences of low health literacy, such as poor health outcomes and overall health status, declines in physical function

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among older adults, decreased access to and use of health care services, and increased health disparities among racially and ethnically diverse populations (e.g., Bennett et al., 2009; Berkman et al., 2011; Smith et al., 2015b). The IOM's 2004 report concluded that increasing health literacy is a shared responsibility, "based on the interaction of individuals' skills with health contexts, the health-care system, the education system, and broad social and cultural factors at home, at work, and in the community" (IOM, 2004, p. 35).

Despite the national focus on increasing health literacy, few studies have examined the role of health literacy on hearing health care or the impact it may have on the uptake of and adherence to various treatments. Nair and Cienkowski (2010) identified a clear mismatch between the literacy levels of individuals with hearing loss and the language that audiologists used during consultations and also the language used in written hearing aid user instructional brochures produced by manufacturers and given to individuals purchasing hearing aids, as mandated by the Food and Drug Administration (FDA). Caposecco and colleagues (2014) conducted a review of 36 hearing aid user instructional brochures and determined that 25 of them (69 percent) were not suitable for older adults because of the terminology, technical vocabulary, and jargon used. The authors also identified deficiencies with the scope of the content and the layout/typography. Another recent review of a modified hearing aid user instructional brochure, which was developed using best practices in health literacy (e.g., the use of graphics, lower-level vocabulary, and increased font size), found that people who were given the modified brochure performed better on a test of hearing aid management and were able to complete more hearing aid operation tasks without assistance than those who were given the manufacturer's brochure (Caposecco et al., 2016). In addition to the FDA-mandated provision of user instructional brochures, some manufacturers and hearing health care professionals provide customized information on specific hearing aids and other technologies in order to better guide and educate consumers. However, the written information provided during consultations may vary widely in content, depth, and health literacy scores.

Atcherson and colleagues (2013) found that audiologists may not be aware of the extent of low levels of literacy and health literacy in the United States and that they may also be unaware of the discrepancies between literacy rates and the written materials that are often presented to patients (e.g., consent forms, privacy forms). The American Academy of Audiology's *Standards of Practice* calls for audiologists to develop and use language and written materials that are at appropriate heath literacy levels (AAA, 2012). When communicating with individuals with hearing loss and their families, there are numerous other communication factors that audiologists and other health care professionals need to be aware of if they are to ensure

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effective communication and comprehension. For example, self-efficacy and the comprehension of hearing terminology and hearing aid jargon may increase over time with experience. Therefore, an individual diagnosed with hearing loss or using a hearing aid for the first time may require a more simplified explanation than an individual who has been managing hearing loss and using hearing aids for many years.

An individual's hearing loss in and of itself may create unique communication challenges for patients, regardless of the health care setting. The possibility that some individuals with hearing loss may not accurately hear some explanations and instructions may compound underlying barriers related to health literacy, further complicating the individual's ability to understand and process information provided during hearing assessments and consultations, as well as during other interactions with the health care system (see Chapter 3). Furthermore, possible language barriers need to be considered when consulting with patients and their families. Appropriate and comprehensible communication, both written and verbal, is crucial to further empower people with hearing loss, increasing the likelihood of successful self-management of hearing loss and uptake of appropriate treatments.

Improving Consumer Measures

In considering how to improve health literacy and understanding about hearing loss for individuals and their families, the committee suggests that researchers explore the possibility of developing an easy-to-understand measure of hearing and hearing loss for patients. There is currently no simple, consumer-friendly measure in wide use, and the results of standard hearing evaluations, in the form of audiograms and other measures of hearing and communication, may be too complicated for some individuals with hearing loss to understand or retain. Although audiometric results are complex, the committee recognizes the importance of the pure-tone thresholds recorded on an audiogram as an important, basic measure of hearing acuity and urges efforts to determine ways to better convey this important information. One such example of a counseling tool in audiology is the familiar sounds audiogram, although there is potential for further simplification into a tracking metric.

Physicians and researchers have identified and developed numerous measures to assess, quantify, and improve health. Table 6-1 provides examples of commonly used health measures and indicators. Although some consumers may not fully understand the underlying principles and physiological mechanisms of these measures, the measures provide individuals with a discrete number, usually associated with a range of outcomes (e.g., normal, at risk, high), that can be used to better understand risk factors and

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TABLE 6-1
Examples of Health Measures That Are Available for Individuals to Easily Track and Monitor Changes in Their Health Status

Measure/Test	Testing Methods and Use
A1C	A1C levels are determined through a blood test and offer an average measure of blood glucose levels during the prior 3 months. A1C can be used to help identify and diagnose diabetes and pre-diabetes. Levels can be measured periodically to identify changes in blood glucose and to determine whether treatments and lifestyle changes are effective for individuals with diabetes (NIDDK, 2014).
Blood pressure	Blood pressure can be measured using an automated blood pressure cuff or with a cuff and a stethoscope. It is reported with two numbers: systolic, the pressure in the vessels when the heart beats, and diastolic, the pressure when the heart is at rest. Blood pressure measures are divided into three categories—normal, at risk (prehypertension), and high—and can be used to determine risk for heart disease, stroke, and kidney disease (CDC, 2014).
BMI	Body mass index (BMI) is an estimated measure of body fat, which is calculated by dividing a person's weight by his or her height and squaring that number. The BMI scale is usually divided into four categories—underweight, normal, overweight, and obese—and it can be used to assess risk for health conditions such as diabetes, hypertension, some types of cancer, and other conditions associated with obesity (CDC, 2015a).
Visual acuity	Visual acuity tests are administered using standardized vision charts. Visual acuity is frequently expressed as a fraction: The top number is the distance of the patient from the eye chart (usually 20 feet) and the bottom number is the distance away from the chart that a person with normal vision would need to stand in order to read the same line correctly as the person being tested. The test can be used to measure changes in vision over time and identify possible eye conditions that may need further treatment (NLM, 2016).

more easily track changes in their health over time. These specific measures also provide a simplified starting point for discussions between individuals and health care professionals about opportunities to improve health and well-being and may contribute to improved hearing health literacy.

The American Heart Association and health care systems across the United States have leveraged specific health metrics through Know Your Numbers campaigns in order to educate individuals about diabetes and about risk factors for cardiovascular disease, such as obesity, high cholesterol, and high blood pressure. These education initiatives encourage individuals with pre-diabetes and diabetes to track their weight and body mass index, blood sugar levels, cholesterol, and blood pressure (AHA, 2015; BCBS of Nebraska, 2016; Johns Hopkins University, 2016). In Australia,

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researchers developed a community-based Know Your Numbers intervention that focused on educating consumers in pharmacies about high blood pressure and other risk factors for stroke. Three months after measuring the participants' blood pressure and providing educational resources, knowledge about hypertension and its risk factors improved across the study population (Cadilhac et al., 2015). A similar consumer measure is needed for hearing.

An easy-to-remember consumer measure could be generated from the results of pure-tone audiometry, but a simplified, real-world measure of communication abilities could also be beneficial in providing consumers with understandable and realistic results. For many years, researchers have suggested that measuring speech recognition in noisy backgrounds has substantial benefits over the traditional assessment, which involves measuring speech recognition using lists of simple words that are presented at relatively high volumes in a quiet background (e.g., McArdle and Wilson, 2008; Smeds et al., 2015; Wilson, 2011). McArdle and Wilson (2008) argued that testing speech recognition in the presence of noise offers four primary advantages, including

- better alignment with the most common concern of people with hearing loss—understanding speech in noisy or complex acoustic environments;
- a more accurate assessment of the impact of hearing loss in real-world settings;
- informing the selection of the most appropriate hearing technology given individual needs; and
- helping set expectations regarding hearing aids and their performance in real-life situations.

Box 6-1 provides examples of hearing tests that were designed to measure speech recognition in noise by presenting the listener with sentences or words in the presence of various types and levels of background noise. Primarily, there are two types of tests that measure speech recognition in noise. The first uses fixed levels of speech and noise, with the outcomes reported as a percentage of words or sentences repeated correctly (i.e., 0–100 percent). In the second type, known as an adaptive procedure, the speech or noise levels, or both, are adjusted depending on the response of the listener, and the outcomes are reported in terms of signal-to-noise ratio in decibels (dB SNR). This ratio represents the difference between the level of speech and noise that is required for an individual to understand 50 percent of the words or sentences presented during the test. Evidence-based reference standards for dB SNR results have been established through tests of large numbers of people with normal hearing.

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Box 6-1 EXAMPLES OF TESTS DESIGNED TO ASSESS SPEECH RECOGNITION IN NOISE

- **Bamford-Kowal-Bench Speech-in-Noise Test**—(Bench et al., 1979, 2006)
- **Connected Speech Test**—(Cox et al., 1987)
- **Digit Triplet Test/Digits-in-Noise Test**—(Jansen et al., 2010; Smits et al., 2013; Watson et al., 2012)
- **Hearing in Noise Test**—(Nilsson et al., 1994)
- **Listening in Spatialized Noise-Sentences Test**—(Brown et al., 2010; Cameron and Dillon, 2007; Cameron et al., 2011; Glyde et al., 2013)
- **Matrix Sentence Test**—(Kollmeier et al., 2015; Zokoll et al., 2013)
- **Quick Speech-in-Noise Test**—(Killion et al., 2004)
- **Speech-in-Noise Test**—(Killion and Villchur, 1993)
- **Speech Perception in Noise Test**—(Bilger, 1984; Kalikow et al., 1977)
- **Words-in-Noise Test**—(Wilson, 2003, 2011; Wilson and Strouse, 2002; Wilson et al., 2007)

These standards serve as a point of comparison for dB SNR measures for people with hearing loss, and they can provide an assessment of the ability to understand speech in noisy environments.[2] As part of a consultation with a hearing health care professional, these results—along with the pure-tone audiogram, which is a measure of hearing acuity—could provide a more comprehensive assessment of how individuals might function in real-life settings, which are frequently filled with background noise (e.g., restaurants, classrooms, offices with an open design, public transportation, sports arenas, gatherings of friends and family), and how hearing technologies and auditory rehabilitation may be used to improve communication. Although these tests do exist and have been validated in some cases, little is known about how frequently they are employed during hearing assessments and consultations.

The exploration, development, and widespread application of easy-to-understand and real-world tests of hearing loss could provide a basis for moving beyond the current focus on the audiogram. Additionally, a consumer-friendly measure, particularly if it were tied to outcomes of real-world tests, could be used to promote regular hearing assessments for those who have questions about changes in their hearing and would enable

[2] For example, a result of –5 dB SNR indicates that the speech level was 5 dB lower than the noise level in order to correctly identify the words or sentences 50 percent of the time, which is a standard result for an individual with normal hearing. A +5 dB SNR indicates that the speech level had to be 5 dB higher than the noise level in order to achieve the same 50 percent correct score. This dB SNR outcome is considered poorer compared to someone with normal hearing and may be typical of some individuals with hearing loss.

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individuals to more easily monitor changes in their hearing over time, potentially reducing confusion about hearing loss measures and empowering individuals to seek treatment. These types of easy-to-understand tests and measures could also be used to realistically set expectations and demonstrate the effectiveness of hearing aids in more realistic listening environments to individuals and their families so that they can compare them to un-aided hearing in those environments.

Improving Information for Consumer Comparisons

In order for consumers to obtain, process, and understand information relevant to hearing loss treatment options, easy-to-understand, evidence-based information needs to be readily available and presented by health care professionals following a diagnosis of hearing loss. Given the assortment of hearing aids and assistive technologies on the market, the decisions that individuals must make regarding which type of services or product will best meet their needs, preferences, and budgets can be overwhelming, and they are further complicated by marketing materials that do not meet health literacy standards. Currently, there are few independent information sources available to consumers that would allow easy comparisons across hearing aids and hearing assistive technologies. Furthermore, the lack of standardized terminology between manufacturers about the features and capabilities of these technologies makes comparisons even more challenging (see Chapter 4).

Consumer Reports recently issued a consumer's guide to buying hearing aids that offers advice on factors to consider when purchasing a hearing aid. However, the guide does not feature a head-to-head quality comparison across brands, as has been done with other consumer products (*Consumer Reports*, 2015). In an effort to better guide consumer decision making, the Hearing Loss Association of America (HLAA) developed a consumer checklist that provides individuals and their families with questions to ask when purchasing hearing aids (HLAA, 2016c). However, additional efforts are necessary in order to provide consumers with information that is easy to understand, fulfills health literacy requirements, and uses standardized terminology to describe hearing aid features. Consumer information on hearing aids and hearing assistive technologies should be made available through independent websites and other media. To ensure that consumers have the necessary tools to make informed decisions, websites with this information should include the following:

- comprehensive descriptions of the full range of hearing aids and hearing assistive technologies available and their features, including connectivity options and requirements; and

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- comparative data on technical traits and differences, clinical traits and performance variations, and practical traits, such as variations in features, connectivity, and costs.

Empowering Individuals and Families through Education and Support

The path toward the recognition of hearing loss and the seeking of treatment can be influenced by numerous factors and will vary from one person to the next. Still, that path will often follow the transtheoretical model, also known as the stages-of-change model (see Figure 6-2). Since its development in the 1980s, the transtheoretical model has been applied to numerous public health concerns including smoking cessation, substance use, weight loss and obesity, cancer screening, HIV/AIDs testing, and medication compliance, and it has also been applied in the hearing loss literature (e.g., Laplante-Lévesque et al., 2012b, 2013, 2015; Ng and Loke, 2015; Saunders et al., 2012). Ng and Loke (2015) hypothesized that factors such

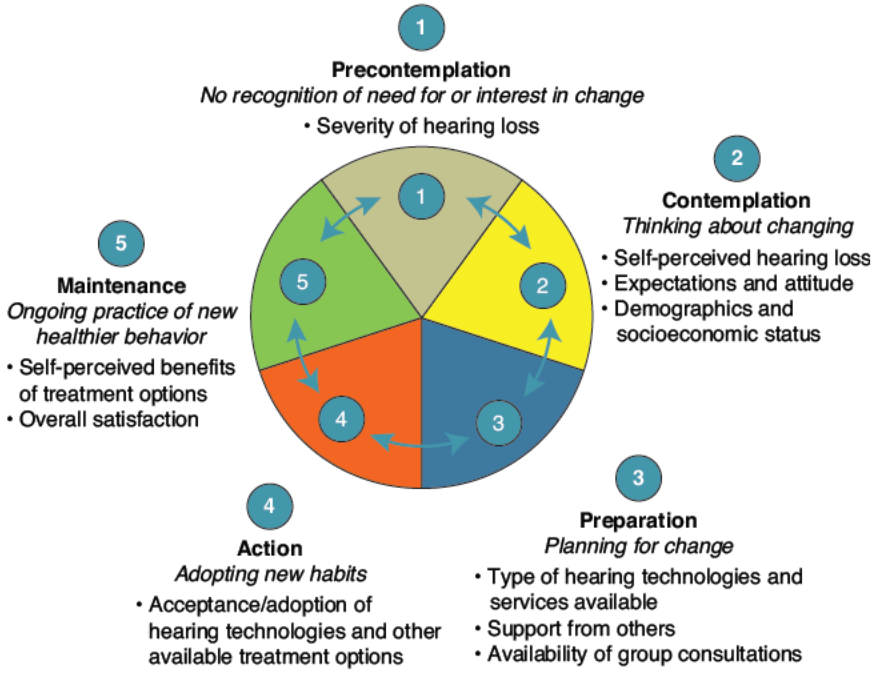

FIGURE 6-2 Transtheoretical model of behavior change.
SOURCES: Adapted from Ng and Loke, 2015, and Prochaska and Di Clemente, 1982. Reprinted with permission from Taylor and Francis, Ltd. Copyright British Society of Audiology; International Society of Audiology; Nordic Audiological Society.

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as self-perception of severity of hearing loss, expectations about hearing aid efficacy, the types of hearing aids that are available, support from others, and the availability of group consultations may all contribute to how an individual advances through the stages of the transtheoretical model.

During the first stage, which can last up to approximately a decade, an individual begins to recognize and may admit to age-related hearing loss (precontemplation stage) (Davis et al., 2007). Even after a hearing loss is first recognized, it may take another period of time for that individual to seek assessment, diagnosis, and treatment (contemplation and preparation stages). Although the stages are somewhat fluid, the contemplation stage typically entails the individual confirming that the hearing loss exists, that it has an impact on everyday life, and that some action needs to be taken. It is also the phase in which the individual begins to consider possible actions and treatments options. During the preparation phase, the individual becomes poised to take action (e.g., talking more openly about the hearing loss with others, researching assessment and treatment options, making the first appointment). Active steps toward seeking assessment and diagnosis, as well as adopting a treatment option, represent the action phase. Following a diagnosis, some individuals may begin to wear hearing aids, use other assistive technologies, or participate in peer-support groups (maintenance phase), while others may choose not to take action (returning to the precontemplation and contemplation stages). Still others may decide not to use or maintain a hearing aid after it has been purchased (a breakdown in the action and maintenance stages).

The transtheroetical model exists within the broader social-ecological model that is described above and in Chapter 1. Numerous factors, external and internal, can influence an individual's progression or regression through the five stages of the transtheoretical model. As described above, the attitudes and beliefs of the individuals and the support of family and friends play a role in an individual's ability to recognize the problem, seek professional assistance, and use hearing aids and other technologies and services. Additionally, health care professionals, advocacy organizations, and the availability of community-based resources can also affect progress, both directly and indirectly. The specific individual needs, environment (e.g., living or working in a noisy environment rather than a quiet one), and preferences of the person will also affect progression through the model. There are times when an individual may be ready to take action but cannot because of a lack of resources or support at the health care system or community levels—challenges that are directly related to accessibility and affordability. Therefore, the committee reiterates the need for solutions at all levels of the social-ecological model that will in turn empower individuals to progress through the stages of change represented by the transtheoretical model and will ensure that care and support are readily available.

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The committee believes that awareness, education, and community-based support are central factors in overcoming barriers that prevent people with hearing loss from getting the care and services that they need. The following sections explore the role of community-based education and support programs, advocacy organizations, and the Internet in educating, supporting, and empowering people with hearing loss as they move through the stages of the transtheoretical model. A subsequent section in this chapter will describe other aspects of community—work environments and the built environment—that can benefit and support people with hearing loss. (See below and Chapter 3 for the role of the health care community.) Chapter 4 and other sections throughout the report have described other mechanisms for empowering individuals to take a more active role in identifying and managing their hearing loss (e.g., mobile applications; over-the-counter wearable hearing devices; self-fitting hearing aids) with innovations developing in multiple areas.

Community-Based Education and Support

Studies suggest that portions of medical information presented at the time of diagnosis can be misunderstood or quickly forgotten (Kessels, 2003; Martin et al., 1990; Reese and Hnath-Chisolm, 2005). Although written information presented at the time of a diagnosis can be helpful in many ways, information provided in that form may not be sufficient to address the personal adjustment and psychosocial elements of living with hearing loss. In order to effectively meet the needs and preferences of people with hearing loss and their families, education and support should not terminate in the professional office setting; it needs to extend into homes and communities, where it can be available when individuals are ready to absorb and operationalize it. Educational and support resources can take numerous shapes, from formal auditory rehabilitation programs in audiology clinics (see Chapter 3) to informal community-based support groups and self-guided resources provided by advocacy organizations. It is essential that health care professionals, particularly hearing health care professionals, are fully aware of what resources are available in their communities and reliably connect individuals with hearing loss and their families with those resources.

Community-based support resources and peer-support groups dedicated to hearing loss can promote resilience and provide resources for individuals with hearing loss. In recent years, the United Kingdom has increased its emphasis on community-based support services, some of which are specifically designed for hearing loss and may provide good models for supporting individuals and families. In order to respond to some of the growing demands on primary care providers and hospitals, the govern-

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ment of Scotland has set up community-based "sensory support centres" to deliver support services to individuals with hearing or vision loss (Smith et al., 2015a). Services provided include hearing aid fittings, mobility training, the installation of smoke alarm systems and doorbells designed for individuals with hearing loss, the provision of other assistive technologies such as telephones and alarm clocks, and instruction on how to use hearing aids and hearing assistive technologies. A review of one of the support centers in rural Scotland concluded that clients were satisfied with the services and levels of empathy shown in the providers. Additionally, individuals who used the services cited reductions in feelings of isolation and increases in self-confidence, self-esteem, and sense of safety.

In another study from the United Kingdom, Pryce and colleagues (2015) examined the role of volunteers in providing community-based peer support for people with hearing loss. The researchers found that volunteers can be used to bridge the gaps between audiology services and the community. However, the interactions were mostly limited to hearing aid maintenance and troubleshooting (e.g., cleaning, battery changes, re-tubing) and did not extend to psychosocial support and adjustment (Pryce et al., 2015). Despite the limited focus of the interactions described in this study, volunteers could be trained to provide greater support in psychosocial areas. For example, in previous studies (e.g., Brooks and Johnson, 1981; Norman et al., 1994) volunteers were trained to provide pre- and post-fitting counseling in an effort to set expectations, improve satisfaction, and increase the use of hearing aids among first-time hearing aid users. In addition to the use of volunteers for the provision of community-based support, ongoing studies are also investigating the possible role of community health workers in identifying and screening for hearing loss, as well as implementing community-based rehabilitation programs (see Chapters 3 and 5).

Peer-support groups can provide opportunities for individuals to connect with others who have hearing loss in order to share concerns, experiences, and strategies for coping with challenges in daily life, and these groups can foster resilience and restore social identity. The possible benefits and limitations of peer-support groups, including Internet- and phone-based groups, for other health conditions (e.g., cancer, diabetes, mental health) have been widely discussed in the literature, with mixed results (e.g., Campbell et al., 2004; Dale et al., 2012; Galinsky and Schopler, 2013; Griffiths et al., 2012). However, few studies have focused on peer-support groups designed for individuals with hearing loss and their families, and little is known about how prevalent or active such groups are throughout the United States. Many local chapters of HLAA (described below) offer peer-support groups led by trained volunteer leaders. Additionally, some state universities with speech and hearing centers and academic medical centers (e.g., Indiana University, 2016; University of Arizona, 2016) have

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established counseling or support groups, usually led by audiologists, where participants can share experiences and discuss the challenges of living with hearing loss. Cummings and colleagues (2002) reviewed a Web-based peer-support group for individuals and families. The researchers found that participants with less real-world support and less hearing loss were more active within the group, and those who were most active derived the most personal gains. The use of peer-support groups may offer a valuable mechanism for community-based education and support, but further research is needed to establish efficacy and determine best practices.

Advocacy organizations at the national and local levels can also play an important role in supporting those affected by hearing loss. In the United States, HLAA is a national membership and advocacy organization dedicated to improving communication access for people with hearing loss through education, support, and public policy and advocacy work. In addition to working at the national level, the organization has a network of approximately 200 state and local chapters. These chapters organize meetings, provide psychosocial support, make connections among people who have hearing loss, and offer education related to living with hearing loss and assistive services and technologies. Although most states have multiple local chapters, there are 13 states without a state or local chapter,[3] leaving large geographic regions without access to these resources and supports (HLAA, 2016a).

In addition to HLAA, which covers a broad constituency of types of hearing loss, there are organizations that provide support to individuals with more severe hearing loss and deafness, such as the Association of Late-Deafened Adults, the National Association of the Deaf, the American Cochlear Implant Alliance, and TDI (formerly the Telecommunications for the Deaf and Hard of Hearing, Inc.) (ACI Alliance, 2016; ALDA, 2016; NAD, 2016; TDI, 2016). A number of international organizations also are geared toward maximizing independence for people with hearing loss, such as Action on Hearing Loss and Hearing Link in the United Kingdom, Better Hearing Australia, and the Canadian Hard of Hearing Association (Action on Hearing Loss, 2016b; Better Hearing Australia, 2016; CHHA, 2016; Hearing Link, 2016). Although the resources and services offered through advocacy organizations certainly provide value, the reach and efficacy of available resources have not been studied.

As young adults with hearing loss transition from adolescence to adulthood, they may require focused community-based education and support. When they leave secondary school systems, where the Individuals with Disabilities Education Act ensures that they receive an education tailored

[3] Alabama, Alaska, Hawaii, Louisiana, Maine, Mississippi, Montana, Nevada, New Hampshire, North Dakota, South Dakota, West Virginia, and Wyoming.

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to meet their needs, they must advocate for themselves and clearly express their needs, preferences, and rights. For youth with disabilities, including those with hearing loss, reviews of available literature and meta-analysis of data have identified small, but positive associations between specialized education and support (e.g., the development of self-advocacy skills, vocational education, and transition programs) and positive outcomes in employment and higher levels of educational attainment (Haber et al., 2016; Schoffstall et al., 2015; Test et al., 2009). In communities across the United States, vocational rehabilitation counselors can offer a blend of educational and support services for young adults to help them build the skills and knowledge needed to maximize success in workplaces, colleges, and universities (Schoffstall et al., 2015). Some communities and states offer summer programs to assist college-bound students with hearing loss in their transition (e.g., Marion Downs, 2016; RIT, 2016). Additionally, peer-support groups and advocacy organizations can provide community-based resources and play a supportive role to better prepare young adults for managing real-world challenges.

At the other end of the age spectrum, older adults may also need specialized education and support. Beyond the community-based education and support resources that are specific to hearing loss, Schneider and colleagues (2010) found that older adults with hearing loss, especially untreated hearing loss or more severe hearing loss, are more likely than those without hearing loss to use community support services, such as Meals on Wheels programs, community-based nursing services, and home care services. This study also found that these individuals had an increased reliance on nonspouse family members and friends for assistance with daily activities, including grocery shopping and household chores. In a 5-year follow-up, individuals with hearing loss—both hearing aid users and those with untreated hearing loss—relied more heavily on community services and nonspouse family or friend support, with increasing use seen by those with greater severity of hearing loss. The participants with hearing loss were more likely to report having low health status, having experienced a fall in the last year and having an impairment related to walking, vision, or cognition (Schneider et al., 2010). These comorbid health concerns combined with the hearing loss may contribute to the increase in demands for the services described in this study. Understanding the community services and support needs of older adults with hearing loss will be beneficial as communities prepare for aging populations that will include large proportions of individuals with hearing loss and other health concerns that could affect independence.

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The Role of the Internet in Educating Individuals and Their Families

When faced with a health concern or a new diagnosis—including hearing loss—many individuals and their families turn to the Internet for information and support (e.g., Bundorf et al., 2006; Couper et al., 2010; Medlock et al., 2015; Purcell and Rainie, 2014). Additionally, health care systems are now employing the Internet as a means to facilitate patient education and self-management of chronic conditions. In the United States, Internet access has increased rapidly since the 1990s, with more than 87 percent of the population using the Internet as of 2014 and almost 75 percent of households having high-speed Internet as of 2013 (File and Ryan, 2014; World Bank, 2016). Despite high rates of overall access, there are still groups with lower levels of access, including older populations, people with lower levels of education and income, those who live in rural areas, and ethnic and racial minority populations, especially black and Hispanic populations (File and Ryan, 2014; Pew Research Center, 2014).

The methodologies used to study Internet and computer use among individuals with hearing loss vary, as do the findings. For the most part, studies have found that those with hearing loss use the Internet at a rate similar to that of the general public. However, some studies have found higher rates of Internet use among those with hearing loss compared to their age-matched peers without hearing loss or the general public (Barak and Sadovsky, 2008; Henshaw et al., 2012; Thoren et al., 2013). Despite these findings, Henshaw and colleagues (2012) found that Internet use among adults between the ages of 50 and 74 years was reduced among individuals with more severe hearing loss compared with those with mild to moderate loss. In another study of older adults with hearing loss ages 55 to 95 years, Moore and colleagues (2015) concluded that increasing age is often associated with lower computer literacy and self-efficacy, a finding that is also reflected in the older adult population in general, which tends to have lower rates of technology adoption and Internet use (Pew Research Center, 2014). All of these findings may change in the coming decades as baby boomers, who tend to be more tech savvy, grow older.

Individuals searching for information on hearing loss on the Internet can get tens of millions of results within fractions of a second. These results have varying degrees of relevance and reliability, and the sheer number can present a challenge in terms of identifying which Web-based resources can be trusted to provide evidence-based information. Health information from government agencies, national advocacy organizations, and health care systems offer a wealth of helpful information. However, reviews of the readability of hearing and hearing loss information on the Internet suggest that consumers would need between 9 and 14 years of education to comprehend the available information, representing a sizable mismatch when compared to average health

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literacy rates in the United States[4] (Laplante-Lévesque and Thoren, 2015; Laplante-Lévesque et al., 2012a). Although readability is a fundamental factor in the comprehension of the information, Laplante-Lévesque and colleagues (2015) noted, "Readability is only one of the many prerequisites for successful . . . understanding, comprehending, and making good use of health information" (p. 287). Additional factors in the comprehension of information include usability, visual design, ease of navigation, searchability, reliability, compatibility with multiple Web browsers and devices, and accessibility. Box 6-2 presents examples of Internet resources on hearing loss.

Regardless of the type of information and the mechanism by which that information is provided, Internet-based resources must be written and presented at appropriate levels of literacy and usability to maximize comprehension by the target audiences. Health literacy and usability are imperative design factors, especially when the target audiences are older adults with hearing loss and other populations that may have limited Internet access and computer literacy. Since an emphasis on health communications was announced as part of Healthy People 2010, the Department of Health and Human Services (HHS) and its agencies have released numerous freely available resources to encourage and facilitate public and private entities, such as advocacy organizations, nonprofit organizations, and health care systems, to simplify Internet-based health information. For example,

- Usability.gov is an HHS-sponsored website that provides resources and best practices for Web developers to make websites more accessible and user friendly (HHS, 2016b).
- HHS has published an online guide to health literacy and simplifying content to better meet the needs of the public (HHS, 2016a).
- The National Institutes of Health (NIH) Office of Communications & Public Liaison has a webpage devoted to clear communication that features information on health literacy and cultural respect (NIH, 2016).
- The Centers for Disease Control and Prevention (CDC) has a webpage and numerous resources devoted to health literacy and has created the Clear Communications Index, which is a tool to help plan and assess materials and resources that will be used for public communication purposes (CDC, 2015b).

The hearing loss community and advocacy organizations need to evaluate Internet-based resources, take advantage of available government resources,

[4] Studies suggest that approximately one-third of the U.S. population has low levels of health literacy defined as basic and below basic (e.g., the ability to read and comprehend basic medical instructions) (HHS, 2008; NCES, 2006).

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Box 6-2 EXAMPLES OF INTERNET RESOURCES FOR ADULTS WITH HEARING LOSS

Consumer and Patient Organizations:

- Action on Hearing Loss (www.actiononhearingloss.org.uk)
- American Cochlear Implant Alliance (www.acialliance.org)
- Association of Late-Deafened Adults (www.alda.org)
- Better Hearing Australia (www.betterhearingaustralia.org.au)
- Canadian Hard of Hearing Association (www.chha.ca/chha)
- Hearing Link (www.hearinglink.org)
- Hearing Loss Association of America (www.hearingloss.org)
- National Association of the Deaf (www.nad.org)
- TDI (formerly Telecommunications for the Deaf and Hard of Hearing) (www.tdiforaccess.org)

U.S. Federal Government Agencies:

- Americans with Disabilities Act information (www.ada.gov)
- Centers for Disease Control and Prevention (resources about noise-induced hearing loss) (www.cdc.gov/niosh/topics/noise)
- Department of Defense Hearing Center of Excellence (www.hearing.health.mil)
- Department of Education Rehabilitation Services Administration (www.rsa.ed.gov)
- Department of Veterans Affairs (www.research.va.gov/topics/hearing.cfm)
- Disability.gov (www.disability.gov)—multiple agencies
- Federal Communications Commission (www.fcc.gov/consumer-and-governmental-affairs/about-bureau/disability-rights-office/general/disabilities)
- Federal Trade Commission (www.consumer.ftc.gov/articles/0168-buying-hearing-aid)

and implement strategies to optimize the information and educational materials on hearing and hearing loss for individuals and their families. Additionally, health care professionals need to be aware of the available online information sources and resources, and they should discuss the wide range of resources with their patients to ensure that people with hearing loss and their families are directed to reliable, evidenced-based information.

THE ROLE OF COMMUNITIES

Individuals and families are intrinsically woven into their communities, as is indicated in the social-ecological model. Communities are complex social structures where all people live, work, socialize, learn, and play. Most of the topics discussed throughout this chapter touch on community

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- Food and Drug Administration (www.fda.gov/MedicalDevices/ProductsandMedicalProcedures/HomeHealthandConsumer/ConsumerProducts/HearingAids/default.htm)
- National Institute on Aging (www.nia.nih.gov/health/publication/hearing-loss)
- National Institute on Deafness and Other Communication Disorders (www.nidcd.nih.gov)
- National Institute on Disability, Independent Living, and Rehabilitation Research (www.acl.gov/programs/NIDILRR)

Professional Associations:

- Academy of Doctors of Audiology (www.audiologist.org/patient-resources)
- American Academy of Audiology (www.howsyourhearing.org)
- American Academy of Otolaryngology-Head & Neck Surgery (www.entnet.org/content/patient-health)
- American Speech–Language–Hearing Association (www.asha.org/public/hearing/hearing-loss)
- International Hearing Society (www.ihsinfo.org/IhsV2/Hearing_Health_Info/Index.cfm)

Additional Resources:

- AARP (www.aarp.org/health/conditions-treatments/hearing-resource-center)
- Consumer Reports Hearing Aids Guide (www.consumerreports.org/cro/hearing-aids/buying-guide.htm)
- Mayo Clinic (www.mayoclinic.org/diseases-conditions/hearing-loss/basics/definition/con-20027684)
- World Health Organization (www.who.int/mediacentre/factsheets/fs300/en)

in one way or another. This section focuses on workplace environments and the built environment. Although these factors are vital to supporting and encouraging participation for people with hearing loss, these environments are not always designed specifically for people with hearing loss and may require some form of modification or education to fully support people with hearing loss. This section also provides a high-level overview of the protections and opportunities that are offered by the Americans with Disabilities Act (ADA), which was signed into law in 1990 and revised in 2009.

Employers and the Workplace

Communication is necessary in the vast majority of jobs and career paths, whether it involves communication with a client or a coworker in a

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conference room or it ensures an employee's safety in a factory or industrial setting. In recent decades the profile of workplaces and workers has changed; more jobs than ever are found in office settings, and individuals are remaining in the workforce longer, increasing the likelihood that hearing loss could affect interactions and relationships with coworkers, job performance, promotion potential, and overall employment opportunities at some point in workers' careers (Munro et al., 2013). Despite the enactment and revision of the ADA, which provides a series of protections for employees (see Box 6-3), individuals with hearing loss may continue to experience stigma, unfavorable attitudes, employment disadvantages, and overt or perceived discrimination in the workplace. For example, among 174,610 allegations of discrimination filed with the U.S. Equal Employment Opportunity Commission under Title I of the ADA between 1992 and 2003, Bowe and colleagues (2005) found that almost 9,000 complaints had been filed by individuals with some degree of hearing loss. Additionally, a study by McMahon and colleagues (2008) concluded that of the discrimination claims they studied, hearing was the second most cited reason—after back problems—for claims related to hiring decisions.

Box 6-3 HIGHLIGHTS OF TITLE I OF THE AMERICANS WITH DISABILITIES ACT[a]

- Employers with 15 or more employees may not discriminate against individuals with actual or perceived disabilities with regard to the following:
  - job applications (e.g., qualification standards, selection criteria);
  - hiring procedures (e.g., testing, screening);
  - promotion or advancement;
  - compensation (e.g., pay, benefits);
  - training opportunities;
  - discharge or dismissal; or
  - other employment terms, conditions, or privileges.

- Employers with 15 or more employees are required to make reasonable accommodations for employees with disabilities, which may include the following:
  - job restructuring;
  - modified work schedules;
  - reassignment;
  - acquisition or modification of equipment or devices;
  - adjustment or modifications of examinations, training materials or policies;
  - availability of readers or interpreters; and
  - other similar accommodations.

[a]Americans with Disabilities Act of 1990, Public Law 101-336, 101st Cong. (July 26, 1990).

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People with hearing loss can experience a variety of challenges in terms of employment and the workplace, including obstacles related to finding employment, career development, promotion and career advancement, equitable compensation, and the balance between job demands and a sense of control or confidence in managing work-related situations (Southall et al., 2010, 2011; Tye-Murray et al., 2009). When they occur, these challenges may reflect the presence of stigma in the workplace. In interviews conducted by Southall and colleagues (2010), participants described instances of being compelled to give up responsibilities or duties; being demoted, terminated, or forced to seek disability payments through Social Security; and being pressured or bullied by coworkers and supervisors. For many individuals, these experiences created stress and isolation, reinforced stigma, and undermined self-confidence (Southall et al., 2010).

The perceived attitudes and beliefs of coworkers, supervisors, and employers have been cited as reasons for employees not disclosing their hearing loss, not seeking accommodations in the workplace, and delaying assessment and treatment for hearing loss (Clements, 2015; Kochkin, 2007a; Southall et al., 2011). However, as described earlier, not everyone perceives or responds to stigma in the same way. The majority of participants (70 percent) in focus groups[5] conducted by Tye-Murray and colleagues (2009) had disclosed their hearing loss in the workplace, and many described positive interactions with and support from coworkers, supervisors, and employers. The participants in this study maintained positive, "can-do" attitudes; had used effective coping mechanisms; developed the resolve and stamina to overcome barriers; and noted that hearing loss was becoming more commonplace in professional employment settings because of the aging baby boomer generation (Tye-Murray et al., 2009). In part, these employment experiences can be attributed to supportive relationships and environments—beneficial factors that are often associated with positive outcomes and resilience. These positive experiences are encouraging and lead to the question of how to ensure these types of experiences become the norm in workplaces across the United States.

Although Tye-Murray and colleagues (2009) suggest that stigma associated with hearing loss in the workplace has declined, perceived stigma is still a concern. Further reducing stigma, fostering a supportive environment in the workplace, and developing coping mechanisms and resilience among employees with hearing loss are crucial steps to eliminating discrimination, promoting broader support in the workplace, and enabling employees to remain in the workforce longer, if they so choose. These steps are also necessary to encourage and empower employees to see the value in seeking

[5] Focus groups included 48 individuals with confirmed hearing loss—27 men and 21 women, ages 29–79 years (average 61).

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assessment and treatment for possible hearing loss rather than hiding it and possibly allowing it to interfere with performance, employment, and career opportunities. Some auditory rehabilitation programs (see Chapter 3) include instruction on assertiveness and communication strategies, which can be beneficially applied in the workplace. A group-based rehabilitation program evaluated by Habanec and Kelly-Campbell (2015) encouraged people with hearing loss to be assertive in the workplace in order to ensure that their communication needs were being met, that effective communication strategies with the employer were being used, and that employees were aware of their rights and employer obligations under the ADA.

Additionally, people with hearing loss need to receive information from health care and hearing health care professionals as well as from employers about the accommodations that are available, the protections that are afforded by the ADA, and the resources that are available through the U.S. Equal Employment Opportunity Commission in the event that workplace discrimination does occur (e.g., EEOC, 2015). This type of information is also important for young adults as they transition from an academic setting to join the workforce and begin to navigate various workplaces and career paths for the first time. On the employer side, human resources professionals and hiring supervisors need to have information on what are reasonable accommodations for hearing loss and how to acquire them; and tools for interviewing, hiring, working with, and supporting people who have hearing loss.

Built Environment and Universal Design

The acoustic profile of community and personal spaces in which people live, work, learn, and gather determines the atmosphere and functionality of those locations just as much as other aspects of structure and design. For people with hearing loss, the availability of hearing aids and hearing assistive technologies, acoustics, and the connections to other communications systems (see Chapter 4) may mean the difference between participating in conversations and engaging with their surroundings and feeling isolated. For the purposes of this report, the built environment refers to public and private spaces within a community that can be designed or altered to improve the experience for people with hearing loss through enhanced acoustics and accessibility. The committee believes that the built environment is an intrinsic part of addressing hearing loss and one that represents a major opportunity where solutions at many levels of the social-ecological model can be used to further empower people with hearing loss and enhance listening conditions for everyone. This is a broad topic with a number of ongoing efforts.

In addition to providing individuals with hearing loss meaningful protections and accommodations within the workplace, the ADA also includes

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provisions for the built environment. Title II (local, state, and federal government facilities) and Title III (places of public accommodation and commercial facilities[6]) of the ADA were designed to make public spaces more accessible for people with disabilities, including individuals with hearing loss. Additionally, section 504 of the Rehabilitation Act of 1973, and its subsequent amendments, requires that programs that receive federal funding provide accommodations in order to ensure effective communication. These laws emphasize that communication with individuals who have a disability must be equivalent to those without a disability, and thus auxiliary aids or services should be provided whenever requested and feasible. Examples of communication services and technologies for individuals with hearing loss may include the following:

- written materials, exchange of written notes, or the availability of note takers;
- real-time, computer-aided transcription;
- amplifiers and hearing aid–compatible telephones;
- open and closed captioning, as well as closed captioning decoders;
- various telecommunication systems (e.g., captioned telephones, video phones);
- videotext screens and displays;
- secondary auditory programs; and
- other assistive technologies or systems.

When a government facility, school, or business is unable to provide a requested aid or service because of financial limitations, the law requires that other forms of assisted communication be offered to ensure that the person with hearing loss understands what is being said and can communicate effectively (ADA National Network, 2014). The committee emphasizes the importance of these laws in ensuring that all students with hearing loss (from kindergarten through post-doctoral programs) regardless of race/ethnicity, socioeconomic status, or geographic location have access to communication aids and assistive services in schools and universities, thus giving them an equal opportunity to learn; to actively engage with their peers, teachers, and professors; and to thrive.

In 2010 the Department of Justice released revisions to ADA regulations that included the ADA Standards for Accessible Design. The standards outline specific minimum requirements that are enforceable for newly designed

[6]Examples of places of accommodation include any place where the public may conduct business or gather: restaurants, hotels, movie theaters, places of worship, bakeries, shopping malls, stores of all types, museums, libraries, public transportation hubs, zoos, health clubs, hospitals, schools, homeless shelters, senior citizen centers, etc.

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or renovated public spaces as defined under titles II and III (DOJ, 2016). For example, sections 219 and 706 of the document provide standards and requirements for the implementation of assistive systems, and sections 215 and 702 describe requirements for fire alarm systems (DOJ, 2010). Acoustic design in the built environment has been a point of consideration for advocacy efforts and guideline development for decades with mixed results. For example, in 1993 the U.S. Architectural and Transportation Barriers Compliance Board—now called the U.S. Access Board—commissioned a report to provide guidelines for designated quiet areas in restaurants. The purpose of the quiet areas was to allow people with hearing loss to enjoy the experience of dining out while more easily interacting and communicating with other people around them.[7] However, these guidelines have not been endorsed or implemented broadly. The availability of design standards and guidelines is a valuable step to strengthening the built environment and ensuring equitable accessibility. However, it is the consistent prioritization, application, and enforcement of evidence-based standards and guidelines that is needed in order to make real differences in the coming decades. Box 6-4 provides additional examples of current design standards and guidelines that are relevant to creating favorable acoustic environments and greater accessibility for people with hearing loss.

As discussed in Chapter 4, hearing assistive technologies include systems that employ transmitters, receivers, and coupling technologies to connect listeners to the source of sound via technologies such as wired devices (e.g., receivers with headsets), induction loops, or infrared or radio technologies (DOJ, 2010). These systems may also include technologies such as Bluetooth and will likely encompass emerging technologies as they become available. The installation of induction loops (also referred to as hearing loops) are an example of one type of hearing assistive technology that can be integrated into the built environment and has been described in various news outlets recently (e.g., National Public Radio, *The New York Times*, and *Scientific American*) (Hearingloop.org, 2015). As described in Chapter 4, when installed within a public space, induction loops can be paired with hearing aids and cochlear implants that have embedded telecoil technology to directly receive the transmission from the sound system. While this pairing requirement may be a limiting factor for those without hearing aids, hearing loops have been installed in a variety of public spaces, including theaters, museums, airports, sports arenas, classrooms and audi-

[7] Personal communication. Email to staff for the Committee on Accessible and Affordable Hearing Health Care for Adults from Daniel Fink, Quiet Areas in Restaurants. Final report to U.S. Architectural and Trasportation Barriers Compliance Board by R. Moulder, 1993. Received January 20, 2016. Available by request from the National Academies of Sciences, Engineering, and Medicine Public Access Records Office. For more information, email PARO@nas.edu.

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Box 6-4 EXAMPLES OF DESIGN STANDARDS AND GUIDELINES FOR ENHANCING THE BUILT ENVIRONMENT

- Department of Justice's ***ADA Standards for Accessible Design*** "set[s] minimum requirements—both scoping and technical—for newly designed and constructed or altered State and local government facilities, public accommodations, and commercial facilities to be readily accessible to and usable by individuals with disabilities" (DOJ, 2010, p. 1).
- American National Standards Institute's ***American National Standard Acoustical Performance Criteria, Design Requirements, and Guidelines for Schools Part 1 and Part 2*** are available to guide the design of classroom settings, both permanent and temporary (part 1 and part 2, respectively), that ensure optimal speech comprehension for students.
- ASTM International's ***Standard Guide for Open Office Acoustics and Applicable ASTM Standards*** provides guidance for architects, engineers, and office managers who are interested in enhancing the acoustic environment and privacy in an open office setting.
- The Ceilings & Interior Systems Construction Association's ***Acoustics in Healthcare Environments*** is a white paper that provides design strategies and guidance to improve patient experience, privacy, and safety in health care settings.

toriums, places of worship, and other large venues. However, the use of this technology is not limited to large public venues, as it can also be installed in private homes and on other smaller scales (Shaw, 2012). Current efforts to further expand the use of hearing loops in public spaces include installation in subway booths by the New York City Metropolitan Transit Authority and in taxicabs, post offices, and banks in the United Kingdom (Myers, 2010; Shaw, 2012). Further efforts to provide hearing assistive technologies and ensure compatibility among assistive technologies and across other communications technologies (e.g., phone, emergency alert systems) are critical (see Chapter 4).

In addition to the availability of hearing assistive technologies and services, the built environment can also be augmented to permit an optimal acoustic environment that benefits all individuals, regardless of hearing ability. Universal design is a concept that calls for environments and products to be designed so that they are "usable by all people to the greatest extent possible" (Mace et al., 1991, p. 2). The researchers who conceived universal design believed that the solutions should be of little or no cost and should simplify everyone's lives. Sidewalk cutouts are a prime example of a universal design element: There is little or no additional cost associated with the cutouts, and they benefit people who use wheelchairs, scooters, walkers, and canes, as well as people pulling luggage, pushing strollers, riding bikes,

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or using wheeled dollies. In terms of improving the acoustic environment to benefit those with hearing loss and the general public, universal design elements could include installing noise-dampening panels, insulation, floor covering/carpet, and plush furnishings; diminishing excessive background noise whenever possible; optimizing reverberations; and configuring floor plans and workspaces to enhance acoustics (CHHA, 2008). The committee urges the development, evaluation, and implementation of design elements that can optimize acoustics in public spaces whenever possible, with an emphasis on universal design solutions. Additional work in the arena of universal design and the built environment in terms of ameliorating the effects of hearing loss is also needed.

PUBLIC EDUCATION AND AWARENESS

Society is the all-encompassing level of the social-ecological model within which all other activities occur. At this level, laws, regulations, policies, culture, and social norms shape solutions that are implemented at community and organizational levels, which then affect individuals with hearing loss, their families, and their social networks. The public, broadly speaking, also resides at this level. This section will explore public attitudes toward and understanding of hearing loss. It will consider how the media, public awareness campaigns, and advocacy efforts can be used to better educate the public, thus building a more supportive society and public experience for people with hearing loss. Although large-scale, nationwide initiatives that are designed to influence the public can be expensive; time consuming; requiring of multipoint stakeholder partnerships; and challenging to plan, execute, and measure, the solutions at this level arguably offer the potential for the largest impact and benefit to the most people.

Public Attitudes and Understanding

Changing public attitudes and understanding represents another opportunity to reduce the stigma that individuals with hearing loss experience. Although a few studies and targeted surveys have reported a positive evolution in public attitudes (described below), some literature suggests that individuals with hearing loss can be deemed by others as being old, socially inept, less friendly, cognitively impaired, or poor communication partners (Clements, 2015; Erler and Garstecki, 2002; Wallhagen, 2010). For example, when people respond inappropriately to verbal cues or do not respond at all, those people may be mistakenly perceived as being confused or being disengaged from or disinterested in their surroundings, when in fact the person did not hear the cue. Although negative public attitudes and stigma are serious concerns and can have a strong impact on

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the attitudes, beliefs, and decision making of people with hearing loss, interviews of people with hearing loss and targeted surveys suggest that public perceptions might be improving (AARP and ASHA, 2011; Rauterkus and Palmer, 2014; Wallhagen, 2010). This shift may be a result of an increased awareness and acceptance of disabilities in recent decades; the aging of the baby boomer generation, which is experiencing and openly discussing chronic, age-related health conditions and focusing on living well; younger generations that tend to have more tolerant views of individual differences; and advances in technology that provide individuals with new hearing and communication options.

Interviews of individuals with hearing loss suggest that there is an overall perceived lack of awareness and understanding about hearing loss among the general public (Southall et al., 2010). Surveys focused on noise-induced hearing loss shed some light on knowledge and understanding of this specific type of hearing loss. In a survey of university students and faculty, Shah and colleagues (2009) found that a large majority of participants (85 percent) expressed some concern about age-related hearing loss, and almost three-quarters (73 percent) were interested in learning about opportunities to prevent noise-induced hearing loss. However, participants cited a limited availability of information on hearing loss and prevention (Shah et al., 2009). Despite the possible gaps in available information, college students were generally knowledgeable about noise-induced hearing loss, with most participants correctly stating that this type of hearing loss could not be cured and was not reversible (Crandell et al., 2004; Shah et al., 2009). However, Crandell and colleagues (2004) found that young African American respondents were less likely to correctly answer questions about the reversibility of noise-induced hearing loss and symptoms related to excessively loud, potentially damaging noise. In considering these findings, the authors also noted that young African Americans were also less likely to report exposure to activities associated with risks for noise-induced hearing loss (e.g., motorcycle riding, racing cars, and listening to portable music devices).

The public also seems to be unaware of the difficulties and challenges that people living with hearing loss experience on a daily basis (Southall et al., 2010). Interviews focused on hearing loss in the workplace indicate that people do not necessarily know how to respond to or communicate with individuals who have hearing loss. Another commonly cited concern from these interviews was that colleagues tend to forget about an individual's hearing loss and need to be reminded by the person with hearing loss. Table 6-2 lists basic communication strategies that can be used by friends, family members, coworkers, and the public to enhance communication with individuals who have hearing loss. Although many of these strategies target general interpersonal communication skills, they also offer the possibility of increasing comprehension and reducing frustrations.

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TABLE 6-2
Examples of Communication Strategies

Strategy	Rationale
Speak face-to-face	When the speaker's face is turned toward the listener, there is improved signal-to-noise ratio, and the listener uses facial cues to fill in the gaps that he/she may not have heard.
Reduce background noise	The ability to understand speech in the presence of background noise or distractors (e.g., television or restaurant noise) declines as a function of age, even for older adults without hearing loss.
Speak slower, instead of louder	When someone speaks loudly or shouts, it actually distorts the speech, often making it more difficult to understand. Also, shouting can make both the speaker and the listener more stressed.
State the topic	By making the topic of conversation clear at the beginning, the listener can more effectively use context cues to fill in the gaps.
Rephrase the statement	Repeating oneself becomes frustrating for the speaker and the listener. When the question or statement is rephrased, the listener has more context cues to fill in the gaps. In addition, some words are actually easier to hear, depending on the person's hearing loss and the frequencies of the sounds in the word.

SOURCES: Adapted from Mamo et al. (2016) and Marrone et al. (2012). Reprinted with permission from ASHA. Copyright 2012. Reprinted with permission from Elsevier. Copyright 2016.

During the committee's third workshop, Zina Jawadi and Patrick Holkins, speakers for the panel that focused on the young adult perspective, described hearing loss as an invisible disability that is often misunderstood, noting that moderate hearing loss is especially difficult for the public to understand in comparison to deafness (Holkins, 2015; Jawadi, 2015). A general lack of understanding by the public can contribute to negative attitudes and can lead to stigma, which highlights the importance of public education efforts and campaigns that can reach diverse audiences through a variety of mechanisms.

The Role of the Media

Very little academic research exists on how hearing loss is represented in the media. Anecdotal experience and indirect references in the literature suggest that hearing loss is often portrayed as something comical in entertainment media (Foss, 2014; Noble, 2009). Cartoons, comic strips, television shows, and movies have depicted hearing loss using images that commonly involve an older person cupping his or her hand around an ear or using an ear trumpet, a person who completely misunderstands a conversation and responds inappropriately, or a person shouting at someone

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with some degree of hearing loss. The media uses these types of images as a comedic tool, in part, because most people have experienced amusing miscommunications due to a misheard statement, regardless of hearing loss; therefore, the audience can relate to these images to some extent. However, this type of comedy is not only insensitive to people who live with hearing loss, but it also reinforces public misperceptions and stigma associated with hearing loss.

A review of 276 fictional television shows originally broadcast between 1987 and 2013 examined how hearing loss has been portrayed in the media and why stigma has been perpetuated (Foss, 2014). The review focused on complete, start-to-finish storylines that featured characters who experienced hearing loss, most of which was sudden and due to an acute cause (e.g., foreign object, explosion, infection, magic). Therefore, this review did not capture all scenes or all images of hearing loss. The review found instances of hearing loss in 11 television shows over a total of 47 episodes. The characters that experienced the hearing loss were typically young, attractive professionals, and in the majority of cases (8 out of 11) the hearing loss was short-term and remedied by the end of the episode. A total of three characters experienced permanent hearing loss, with the loss being age-related in only one case. In all three cases, the character with permanent hearing loss adopted hearing aids, but there were no challenges with using the devices, there were no other accommodations or support needed, and the individual's hearing was restored completely by the hearing aid—a combination of outcomes that is not very realistic. Despite many inaccuracies in the storylines studied, most characters denied the presence of their hearing loss and tried to hide it from their coworkers and friends—a reaction that is common in real life (Foss, 2014).

As discussed in the IOM report on the public health dimensions of epilepsy, a highly stigmatized health condition, the media portrayal of health concerns is an important tool for educating large audiences, increasing awareness, and possibly reducing stigma (IOM, 2012). In 2005 more than half of the respondents to the Porter Novelli HealthStyles survey reported that they learned new information about a health condition or disease through television dramas or comedies (CDC, 2005). Box 6-5 summarizes lessons that were highlighted in the IOM epilepsy report and the lack of storylines featuring hearing loss, especially age-related hearing loss, combined with the high prevalence of and overall misperceptions about hearing loss indicate that there is an opportunity for action. As concluded in the CDC's analysis of the HealthStyles survey, "TV dramas/comedies serve a critical health education function when they provide accurate, timely information about disease, injury and disability in storylines for the vast majority of U.S. residents who watch at least a few times a month, and especially for 64% of the population . . . who are regular viewers watching

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Box 6-5 LESSONS TO PROMOTE THE DEVELOPMENT AND USE OF HEARING LOSS STORYLINES[a]

- Principles from social-cognitive theory, or social modeling, suggest that audiences learn from individuals with whom they identify and that they are likely to emulate behavior that has positive outcomes and avoid behavior with negative outcomes (Bandura, 1986).
- Careful evaluation and viewer surveys are required to measure the success of story lines and to identify best practices for future efforts.
- Clear, concise, accurate, and compelling information is necessary to inform writers and producers.
- A variety of resources, such as websites, social media, and toll-free numbers, offered in connection with the story lines provide viewers with multiple access points to valuable information, as well as a way to track audience response.
- Public–private partnerships facilitate and expand advocacy and outreach efforts and can play an important role in activities, such as expert consultations on story lines and development of informational resources.
- Existing initiatives, which include a variety of educational opportunities and awards that typically target journalists and entertainment media writers and producers, can be leveraged in order to inform and engage writers whose stories and interviews will inform and educate the public.

[a]Text excerpted from the 2012 Institute of Medicine report *Epilepsy Across the Spectrum: Promoting Health and Understanding*, pp. 393–396.

two or more times a week" (CDC, 2005, p. 3). Furthermore, a national study of health literacy found that individuals with lower health literacy are more likely to obtain health-related information from radio and television programs than individuals with higher levels of health literacy, who tend to seek information from written sources such as the Internet, newspapers, and magazines (Kutner et al., 2006).

Such fictional portrayals of hearing loss are not the only media opportunity for educating the public about hearing loss; the news media can also play a role. One type of hearing loss that has been frequently discussed in the news media is noise-induced hearing loss (see Chapter 2). Concerns about the risks of hearing loss caused by loud noise became more prevalent with the widespread use of portable music devices starting in the 1980s (Peng et al., 2007; Punch et al., 2011). As researchers considered the effects of portable music devices on hearing, the news media began to highlight the risks of and prevention strategies for noise-induced hearing loss (NIDCD, 2015b). Although the available evidence regarding the link between portable music devices and noise-induced hearing loss is mixed and somewhat controversial, most experts agree that young adults should be educated on the topic and consider the intensity and duration of listening (Punch

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et al., 2011). In surveys of young adults through the MTV.com website, Quintanilla-Dieck and colleagues (2009) found that young people identified popular media as the most informative resource available for information on hearing loss and the prevention of noise-induced hearing loss, which highlights the opportunities for the media to reach various audiences. Social media efforts, often applied in association with public education campaigns (described below), may also contribute to educating the public, especially young adults, about hearing loss—both noise-induced and age-related hearing loss. The use and efficacy of social media to educate the public and increase awareness warrants additional investigation.

Marketing and Its Role in Educating the Public

Interviews and surveys of people with hearing loss suggest that many of them view hearing aids as a visual reminder of the stigma and negative attitudes and feelings about hearing loss that are described above (Dawes et al., 2014; Kochkin, 2007b; Laplante-Lévesque et al., 2010; Southall et al., 2011), and factors related to vanity and overall aesthetics are commonly cited as reasons why people choose not to adopt or use hearing aids (McCormack and Fortnum, 2013; Wallhagen, 2010). To combat these concerns, hearing aid manufacturers and marketers have focused on developing and advertising smaller, easy-to-hide hearing aids over the last three decades (Clements, 2015). Although advances in technology and size reductions may be credited for prompting individuals who are sensitive about the size and appearance of hearing aids to purchase and use them, the emphasis on these features in advertising—another form of media—may also be responsible for reinforcing negative public attitudes and stigma associated with hearing aids by implying that a small hearing aid is more desirable because it enables the wearer to hide his or her hearing loss (Wallhagen, 2010). This attitude can also magnify the perception of stigma for those for whom a small hearing aid may be challenging to use and thus a larger hearing aid is more appropriate (e.g., an individual who has trouble manipulating very small objects). Hearing aid advertisements commonly appear on television, in print media (e.g., magazines, newspapers), and in audiology clinics and physician offices, thus reaching—and possibly influencing—large segments of the population.

To better serve people with hearing loss, reduce stigma, and educate the public, the marketing for hearing aids and any hearing assistive technology should focus on individuals finding a solution that is effective, meets their needs, and helps them reconnect with family and friends, become more socially engaged, and continue to participate in their communities, rather than highlighting the ease with which an individual can hide his or her use of hearing aids or hearing assistive technologies. Kochkin and Rogin (2000)

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call for a shift in messaging that moves away from hiding the hearing aid and away from thinking of it as device to be sold and toward a message that technology can change people's lives, enhance relationships and intimacy, and reduce stress.

Public Education and Advocacy Efforts

Education is one of the most effective mechanisms available to combat misperceptions and stigma and should be used to help address these types of challenges with hearing loss. Public awareness campaigns and other public education efforts have been used successfully in the public health sphere for decades. In many cases, campaigns focus on educating the public and promoting behavior change (e.g., smoking cessation, exercise, and physical fitness), while others are developed to increase awareness and encourage a clearly defined, achievable action (e.g., taking part in cancer screening or HIV/AIDs testing, stopping drunk driving, using seat belts) or are designed to increase public awareness, correct misperceptions, encourage normalization, and reduce the stigma associated with a specific health condition (e.g., mental health conditions, disabilities, or epilepsy).

The most effective public awareness campaigns are usually large scale and multifaceted, have a specific goal, and involve a range of outreach activities, stakeholders and sponsors, educational materials, messaging, and media platforms. Public awareness campaigns may also include lobbying efforts to change laws, regulations, and policies at the local, state, and national levels. However, limitations in resources—for example, funding, time, and expertise—often hinder the development and implementation of large-scale public awareness campaigns. When a public awareness campaign is not feasible, advocacy organizations, government agencies, and other stakeholders often use smaller-scale efforts (e.g., videos, public service announcements, blogs) to educate the public about various public health topics and, in some cases, to reduce stigma.

WISE EARS! is an example of a nationwide public awareness campaign that was designed to educate the public about noise-induced hearing loss and strategies for prevention. The campaign ran from 1999 to 2006 and was jointly sponsored by the National Institute on Deafness and Other Communication Disorders (NIDCD) and the National Institute for Occupational Safety and Health. Nearly 90 public and private organizations were also involved in some capacity (NIDCD, 2015b). The far-reaching campaign was not targeted to a specific audience or age group, but it featured audience-specific materials and outreach activities. For example, the campaign included activity books for elementary school children (grades 3–6) and an interactive web curriculum for middle-school students (grades 7–8). To convey its messages, the campaign used bilingual (English and Spanish)

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multimedia educational materials including factsheets, a website, promotional items, presentations, and other tools. In 2006, NIDCD conducted a two-pronged evaluation of the campaign through an environmental scan of available information about noise-induced hearing loss and informal discussion with campaign collaborators. The evaluation pointed to the need to focus on a specific age range as the target group for the campaign as well as to expand partnerships for this effort (NIDCD, 2015b). The new campaign, It's a Noisy Planet, has a broad partnership (NIDCD, 2015a).

Box 6-6 describes other hearing loss campaigns that have been carried out over the last decade. Many of these efforts, such as WISE EARS! and those described below, have focused on the prevention of noise-induced hearing loss. Unfortunately, most of the campaigns identified by the committee for this report did not include a planned evaluation, or if they did, the results of the evaluations are not publicly available. The lack of an evaluation makes measuring success impossible at this time. It also limits the opportunities to identify lessons learned that could be used to inform plans for future public awareness efforts.

Advocacy organizations also play an important role in educating the public and supporting public education efforts. Action on Hearing Loss, a nonprofit organization started in 1911 in the United Kingdom, has developed and continues to operate several public campaigns covering a variety of topics, such as the need for screening, improving access to health and human services for people with hearing loss, the increased use of subtitles on television, and providing access to lip-reading classes and services. In its campaign efforts, Action on Hearing Loss lobbies the government, raises money, holds conferences, engages and activates people with hearing loss, provides educational materials, and provides guidance and support for local campaigns and awareness activities (Action on Hearing Loss, 2016a). HLAA also organizes public education and awareness events. Since 2006 it has supported walks across the United States in the spring and fall (HLAA, 2016b). Additionally, the American Academy of Audiology, NIDCD, the CDC, HLAA, and other organizations have supported October as National Protect Your Hearing Month and National Audiology Awareness Month, while May has been designated as Better Hearing Month (AAA, 2016; ASHA, 2016; CDC, 2015c; HLAA, 2013; NIDCD, 2014). In honor of these months, organizations may provide promotional tools, factsheets, posters, customizable press releases, and other materials that can be used to educate people with hearing loss and the public about healthy hearing. Other advocacy organizations, such as AARP and the National Council on Aging, have also dedicated resources to educating the public and their constituents about hearing loss, possible comorbidities associated with hearing loss, and resources that are available to assess and treat hearing loss (AARP, 2016; NCOA, 2016).

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Box 6-6 EXAMPLES OF CAMPAIGNS RELATED TO HEARING LOSS

Get in the Hearing Loop was a year-long campaign (June 2010–June 2011) that was jointly sponsored by the Hearing Loss Association of America and the American Academy of Audiology. This marketing-based campaign was specifically targeted toward hearing aid users, audiologists, and hearing instrument specialists and technicians, and it focused on educating these audiences about the benefits of hearing loops, telecoils, and other assistive technologies and systems.

National Campaign for Better Hearing is an ongoing campaign in Canada to increase awareness of hearing loss and to ensure access to hearing assessments for Canadians over the age of 60 years. The campaign is sponsored by a number of hearing aid centers, and it hosts events across Canada which include free hearing tests, hearing aid check-ups, and educational sessions about available hearing technologies. The campaign website provides research findings and an active blog that features interviews with people with hearing loss.

Speak Up About Hearing Loss was a campaign led by the American Speech-Language-Hearing Association in 2012 that focused on television and radio public service announcements (PSAs). The goal of the PSAs was to encourage families to speak openly about hearing loss and to encourage loved ones to seek assessment and treatment. The PSAs were available in both English and Spanish and were featured on major media outlets nationwide. The campaign also featured a website that linked to research findings, podcasts, and additional information for individuals and families.

Turn it to the Left is a campaign that was launched by the American Academy of Audiology in 2008. The ongoing campaign is focused on increasing awareness about noise-induced hearing loss and raising money for research. The interactive website offers educational resources (e.g., posters, diagrams, a quiz), fact sheets, press releases, articles and stories that have appeared in the media, and a link to the academy's Find an Audiologist portal.

The availability of reliable, evidence-based information for consumers helps to reduce misperceptions and empower individuals with hearing loss to seek care and more openly discuss their hearing loss, the challenges it presents, and successful treatment stories with others. Given the current and expected number of individuals with hearing loss in the United States, advocacy organizations, government agencies, health care professionals, researchers, and industry need to collaborate in order to identify the best mechanisms for educating the public about hearing loss, the importance of hearing health, and what services and treatment options are available to people who live with hearing loss. To fully understand the impact of public awareness campaigns and advocacy efforts and to maximize the success of these initiatives, the following are needed:

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Other campaigns have been tailored toward younger audiences with a goal of educating children, young adults, and their parents about noise-induced hearing loss. For example, the following multimedia campaigns have featured messages of risk reduction, prevention, the development of healthy listening practices, and overall healthy hearing:

- **Dangerous Decibels**—jointly supported by the Oregon Health & Science University, Portland State University, and the University of Northern Colorado.
- **It's a Noisy Planet**—sponsored by the National Institute on Deafness and Other Communication Disorders.
- **Listen to Your Buds**—sponsored by the American Speech-Language-Hearing Association.
- **It's How You Listen That Counts**—sponsored by the House Ear Institute.

SOURCES:

- Get in the Hearing Loop: http://www.hearingloss.org/content/get-hearing-loop
- National Campaign for Better Hearing: http://www.campaignforbetterhearing.org/#about-marquee
- Speak Up About Hearing Loss: http://www.asha.org/About/news/Speak-Up-About-Hearing-Loss
- Turn it to the Left: http://www.turnittotheleft.org
- Dangerous Decibels: http://www.dangerousdecibels.org
- It's a Noisy Planet: http://www.noisyplanet.nidcd.nih.gov
- Listen to Your Buds: http://www.asha.org/buds
- It's How You Listen That Counts: http://www.hearingreview.com/2010/12/to-teens-its-how-you-listen-that-counts

- clearly defined goals, target audiences, messaging, milestones, and successes;
- data and research to establish baselines of awareness and the misperceptions associated with hearing loss;
- participation and involvement of targeted audiences throughout the planning and implementation phases to ensure that the messaging and education efforts are reaching their intended audiences, are culturally sensitive, and are making a difference;
- coordination, collaboration, and partnerships to leverage limited resources, expand reach, and meet goals; and
- short- and long-term evaluation plans to measure success, adjust ongoing initiatives, and target future efforts.

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New Technology and Shifting Public Perspectives

Over the past 30 years, high-tech mobile technologies (e.g., music players, smartphones, tablets) have changed the way people communicate, receive information, and interact with one another. Many of these technologies are paired with communication products such as headphones, earbuds, and Bluetooth headsets, vastly expanding the number of people who use some form of electronic technology in or near their ears. In a 2006 editorial, Jackler (2006) predicted that the public stigma associated with hearing aids would vanish with the pervasive use of earpieces among the general public, and preliminary data suggest that Jackler's prediction may be coming to fruition.

Since 1977, a series of studies have assessed the hearing aid effect, which is defined as "the assignment of negative attributes to individuals using hearing aids" (Rauterkus and Palmer, 2014, p. 894). More recently, Rauterkus and Palmer (2014) replicated study designs that were used in the 1970s and 1980s to determine whether, given the increasing use of personal listening devices by the public, the hearing aid effect has persisted over time. Study participants viewed images, each of which showed an individual wearing a different technology: three types of hearing aids (two behind-the-ear designs and one in-the-canal design), earbuds, and a Bluetooth headset. Participants were asked to rate the individual in each image based on eight attributes (e.g., from unattractive to attractive, from unintelligent to intelligent, from lazy to hard working). Rauterkus and Palmer had hypothesized that there would be an overall reduction in the hearing aid effect (i.e., reduction in negative attitudes). In fact, the images of individuals wearing hearing aids were not rated any more negatively than the images of individuals wearing earbuds or Bluetooth headsets, suggesting that the hearing aid effect was no longer present. Notable shortcomings of this study include the sample size and participant demographics; the study was conducted with 24 participants who were pursuing a masters of business administration degree in one city (Rauterkus and Palmer, 2014). Therefore, the findings show promise but are not generalizable to the U.S. population.

In a nationwide survey that was jointly conducted by AARP and the American Speech–Language–Hearing Association, stigma did not seem to be a major concern for participants. For example, most respondents, regardless of hearing status, indicated that they would not mind having others know about a hearing problem (66 percent), being seen wearing hearing aids (71 percent), or discussing difficulties with hearing (73 percent). Although attitudes may be shifting among older adults, the remnants of stigma may still be identifiable in these survey results. For example, few individuals with untreated hearing loss were willing to talk to family or friends about suspected hearing loss (25 and 15 percent, respectively), and more than

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half of respondents with untreated hearing loss (57 percent) found ways to "cover up" their hearing loss rather than seeking treatment (AARP and ASHA, 2011). The participants for this survey were carefully selected to reflect the demographics of AARP constituents; thus, like the Rauterkus and Palmer study, this survey is not representative of the U.S. population.

Companies within the consumer technologies market are beginning to work with hearing aid manufacturers in an effort to adapt micro hearing aid technologies (e.g., chips, batteries) for use in technologies that can stream audio and voice from a cell phone via Bluetooth. As these types of high-end technologies become available, the line between hearing aids and consumer technologies will blur and the negative perceptions about hearing aids may erode further (Hunn, 2015). Recent advances in hearing aids and hearing assistive technologies (described in Chapter 4)—including the pairing/controlling of hearing aids and hearables with apps for smartphones and watches—are bringing these technologies to younger and more tech savvy sectors of society. These new technologies are also putting an increased emphasis on user experience and visual design, offering colorfully patterned cases that draw attention to the device as a high-tech gadget rather than as something that should be hidden from view (Kosner, 2015). The continuing evolution and marketing of high-tech hearing technologies that are both functional and stylish is likely to promote additional shifts in public perceptions and attitudes about hearing aids and other technologies. However, some of these high-tech options may come with a higher price tag, something that is already a concern for many seeking hearing health care (see Chapter 5), and ensuring compatibility among assistive technologies will be important.

Although the studies and survey findings described in this section are encouraging, stigma is still cited in recent literature (described earlier in this chapter) as a concern among individuals with hearing loss, and additional efforts are required to ensure that stigma, negative attitudes, and misperceptions are not barriers that prevent individuals from seeking hearing assessments, treatments, and community-based support.

NEXT STEPS AND RECOMMENDATIONS

As discussed in previous chapters, hearing loss is about more than just the hearing loss itself. It is also associated with diminished physical and psychosocial well-being and overall quality of life, depression, anxiety, low self-esteem, social isolation, stress, mental fatigue, cognitive decline and dementia, reduced mobility, falls, and mortality (Dalton et al., 2003; Genther et al., 2015; Hornsby, 2013; Lin and Ferrucci, 2012; Lin et al., 2011, 2013; Mener et al., 2013; Mick et al., 2014; Munro et al., 2013). Although overall quality of life may be improved with the appropriate use

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of hearing aids and hearing assistive technologies (Chisolm et al., 2007; Kochkin and Rogin, 2000), many individuals delay seeking help and treatment or else do not regularly use their hearing aids or other technologies. Further, there has been limited research into positive experiences and adaptation to hearing loss as well as resilience factors among adults and their families (Hallam et al., 2008; Manchaiah et al., 2015; Stephens and Kerr, 2003). Multifaceted solutions are needed across the social-ecological model to improve support for individuals with hearing loss. Box 6-7 provides areas of focus and research priorities for improving attitudes and beliefs, fortifying education and community-based support, and enhancing public awareness.

Box 6-7 AREAS OF FOCUS AND RESEARCH PRIORITIES FOR IMPROVING SUPPORT FOR PEOPLE WITH HEARING LOSS

- The development of education and support programs along with other tools and techniques for individuals and families to foster resilience and empower them to overcome negative attitudes and perceptions
- The normalization of hearing health, screening, treatment, and management, as has been done with dentistry and eye/vision care
- The empowerment and education of individuals and their families to identify good hearing as a health priority, seek care, and pursue the services and technologies that meet their needs, with an emphasis on improving overall well-being
- The provision of high-quality community-based support to overcome misperceptions about hearing loss and the use of hearing technologies
- The development and evaluation of adaptable community-based education and support initiatives using multimedia platforms, the Internet, and peers with hearing loss to engage individuals and families together across the United States
- Education for employers and employees about the Americans with Disabilities Act (ADA) requirements, accommodations, and tools for successful interviews and hiring of people with hearing loss
- The widespread installation and use of hearing assistive technologies in public spaces, as stipulated in the ADA
- The development, evaluation, and implementation of design elements that can optimize acoustics in public spaces whenever possible, with an emphasis on universal design solutions
- A more positive portrayal of hearing loss and the use of hearing aids and hearing assistive technologies in the media
- The application and evaluation of social media to educate the public about hearing loss and the risks of noise-induced hearing loss
- Positive messaging and themes in hearing technology marketing, with an emphasis on topics such as connecting with family and friends rather than on aesthetics and hiding the hearing aid or hearing assistive technology

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Goal 11: ***Improve Publicly Available Information on Hearing Health***

Recommendation 11: The National Institutes of Health, the Centers for Disease Control and Prevention, the Food and Drug Administration, the Department of Defense, the Department of Veterans Affairs, the Administration for Community Living, state public health agencies, other relevant government agencies, advocacy organizations, hearing health care professional associations, hearing technology manufacturers, hearing health care professionals, and media organizations should improve public information on hearing health and hearing-related technologies and services and promote public awareness about hearing and hearing health care.

Specifically,

- Strengthen publicly available, evidence-based information on hearing through multiple avenues (e.g., centralized websites, community-based services, local councils on aging) that explain hearing and related health concerns for adults of all health literacy levels, and address the breadth of services and technologies, including their comparative effectiveness and costs;
- Work through media, social marketing, and public education campaigns to disseminate and evaluate key evidence-based messages about hearing and hearing health and to promote accuracy in media portrayals;
- Implement and support a consumer-based metric to enable individuals to understand and track their communication abilities and hearing needs and a consumer-oriented format for audiogram and other hearing test results;
- Adopt standardized terminology across manufacturers about the features and capabilities of hearing aids and hearing assistive technologies so that consumers and hearing health care professionals can make easy, clear, unambiguous comparisons; and
- Develop and disseminate criteria that individuals and families can use to evaluate and compare hearing-related products and services.

Goal 12: ***Promote Individual, Employer, Private-Sector, and Community-Based Actions to Support and Manage Hearing Health and Effective Communication***

Recommendation 12: Individuals, families, community-based organizations, advocacy organizations, employers, private-sector businesses, and government agencies (local, state, federal) should take actions to

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support and manage hearing health and foster environments that maximize hearing and communication for all individuals.

- Individuals and their family members can
  - Reduce exposure to noise that is at high volume levels for extended periods of time and use hearing protection as appropriate,
  - Be aware of and recognize difficulties in hearing and communication and seek information and care through the range of available services and technologies when appropriate, and
  - Seek out peer-support groups and other opportunities for those living with hearing loss, when appropriate.
- Community-based organizations, advocacy organizations, employers, private-sector businesses, and government agencies (local, state, federal) should promote work and community environments that are conducive to effective communication and that support individuals with hearing loss. Specifically, they should
  - Ensure compliance with the Americans with Disabilities Act and other related laws supporting people with disabilities and strive to exceed their minimum requirements, and
  - Research and incorporate features into buildings and public spaces that improve hearing and communication (e.g., universal design, hearing assistive technologies).

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7

Opportunities for Action

Hearing is a vital human sense important to communications, health, function, and quality of life. Currently, hearing health care is simultaneously on the brink of and in the midst of innovation and change. Changes in technologies, changes in the delivery of hearing health care services, and changes in opportunities for consumer empowerment and public awareness are occurring at various rates and with various levels of research rigor and evidence. Thus, with the benefit of key institutional, technological, and regulatory changes to improve access and affordability, hearing health care is poised to undergo advances that will help individuals with hearing loss and their families find and fully utilize the appropriate, affordable, and high-quality services, technologies, and support they need. The committee's findings and recommendations for change are highlighted in Box 7-1 and discussed throughout this report. The recommended actions will require collaborative, determined, and sustained efforts to ensure that stakeholders from across the public and private sectors and across professions come together to provide accessible and affordable hearing health care. Fully developing the array of options for adults of all ages and with all levels of hearing loss (see Table 7-1) requires that hearing loss be recognized as a public health concern that demands multidisciplinary and collaborative efforts by all stakeholders working together with the common goal to improve hearing and communication abilities for individuals and across the population.

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Box 7-1 KEY MESSAGES FOR IMPROVING ACCESSIBILITY AND AFFORDABILITY OF HEARING HEALTH CARE FOR ADULTS[a]

Findings:

- Hearing is vital to communications, health, function, and quality of life. Individuals need to be alert to their hearing health, as hearing loss can range from mild to profound and tends to increase with age, onset can be gradual, and each individual's hearing needs are unique.
- Hearing health care involves a wide range of services and technologies with ever-expanding and evolving options; however, many people do not have access to these options or cannot afford them.
- Hearing loss is a public health and societal concern; engagement and action are needed across the spectrum of relevant stakeholders, including individuals and families, professionals, nonprofit organizations, industries, government, and the health care community.

Recommended Actions:

- Improve population-based information on hearing loss and hearing health care
- Develop and promote measures to assess and improve quality of hearing health care services
- Remove Food and Drug Administration (FDA) regulation for medical evaluation or waiver of that evaluation prior to hearing aid purchase
- Empower consumers and patients in their use of hearing health care
- Improve access to hearing health care for underserved and vulnerable populations
- Promote hearing health care in wellness and medical visits for those with concerns about their hearing
- Implement a new FDA device category for over-the-counter wearable hearing devices
- Improve the compatibility and interoperability of hearing technologies with communications systems and the transparency of hearing aid programming
- Improve affordability of hearing health care by actions across federal, state, and private sectors
- Evaluate and implement innovative models of hearing health care to improve access, quality, and affordability
- Improve publicly available information on hearing health
- Promote individual, employer, private-sector, and community-based actions to support and manage hearing health and effective communication

[a]All findings and recommended actions are of equal importance and are not prioritized.

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TABLE 7-1
Hearing Loss–Related Services and Technologies

Services	• Evaluation and assessment • Selection, fitting, adjustment, and maintenance of hearing aids and hearing assistive technologies • Auditory rehabilitation
Technologies	• Hearing aids • Over-the-counter wearable hearing devices (proposed) • Hearing assistive technologies, including products that connect with other communications technologies (e.g., phones, television)

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A

Meeting Agendas

Committee on Accessible and Affordable Hearing Health Care for Adults

FIRST COMMITTEE MEETING
APRIL 27, 2015

Keck Center of the National Academies
Room 100
500 Fifth Street, NW
Washington, DC 20001

Open Session – Room 100

10:30–10:35 a.m.	**Welcome and Introductions** *Dan Blazer, Committee Chair*
10:35 a.m.–12:30 p.m.	**Context for Study**
10:35–11:35 a.m.	**Panelist Presentations** • *Theresa H. Chisolm, University of South Florida* • *Dianne Van Tasell, Bose* • *Meg Wallhagen, University of California, San Francisco, School of Nursing*
11:35 a.m.–12:30 p.m.	**Committee Discussion with Panelists**

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Hearing Health Care for Adults: Priorities for Improving Access and Affordability

12:30–1:30 p.m.	**Lunch (Keck Atrium)**
1:30–4:45 p.m.	**Discussion of the Charge to the Committee**
1:30–3:30 p.m.	**Perspectives from Study Sponsors**
	National Institute on Deafness and Other Communication Disorders, *Amy Donahue* National Institute on Aging, *Molly Wagster* Hearing Loss Association of America, *Anna Gilmore Hall* Food and Drug Administration, *Eric Mann and Srinivas Nandkumar* Department of Defense, *Mark Packer and Lynn Henselman* Department of Veterans Affairs, *David Chandler* Centers for Disease Control and Prevention, *Marcus Gaffney*
3:30–3:45 p.m.	**Break**
3:45–4:45 p.m.	**Committee Discussion with Study Sponsors**
4:45–5:15 p.m.	**Public Comment**
5:15 p.m.	**Open Session Adjourns**

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Hearing Health Care for Adults: Priorities for Improving Access and Affordability

Committee on Accessible and Affordable Hearing Health Care for Adults

SECOND COMMITTEE MEETING
JUNE 30, 2015

Keck Center of the National Academies
Room 100
500 Fifth Street, NW
Washington, DC 20001

Open Session – Keck 100

8:00–8:10 a.m.	**Welcome and Opening Remarks** *Dan Blazer, Committee Chair*
8:10–9:15 a.m.	**Panel 1: Impact of Hearing Impairment and Use of Services** *Facilitator: Karen Cruickshanks*
8:10–8:15 a.m.	Panel Introductions
8:15–8:55 a.m.	Presentations • *Karen Cruickshanks, University of Wisconsin, Committee Member* • *Carrie Nieman, Johns Hopkins University*
8:55–9:15 a.m.	Discussion with the Committee
9:15–10:40 a.m.	**Panel 2: Hearing Health Care Providers and Scope of Practice** *Facilitator: Deb Tucci*
9:15–9:20 a.m.	Panel Introductions
9:20–10:20 a.m.	Presentations • *Philip Zazove, University of Michigan* • *Gail Linn, Potomac Audiology* • *Michael Andreozzi, Beltone New England* • *Wade Chien, Johns Hopkins University*
10:20–10:40 a.m.	Discussion with the Committee
10:40–10:55 a.m.	**Break**

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Hearing Health Care for Adults: Priorities for Improving Access and Affordability

10:55 a.m.–12:05 p.m.	**Panel 3: Affordability and Coverage** *Facilitator: José Pagán*
10:55–11 a.m.	Panel Introductions
11:00–11:45 a.m.	Presentations • *Susan Miller, Centers for Medicare & Medicaid Services* • *Virginia Ramachandran, Henry Ford Health System* • *Stephanie Sjoblad, University of North Carolina at Chapel Hill*
11:45 a.m.–12:05 p.m.	Discussion with the Committee
12:05–1:05 p.m.	**Lunch** (Keck Atrium)
1:05–2:15 p.m.	**Panel 4: Hearing Health Care Service Delivery** *Facilitator: Judy Dubno*
1:05–1:10 p.m.	Panel Introductions
1:10–1:55 p.m.	Presentations • *Lu Beck, Department of Veterans Affairs* • *Marc Klau, Kaiser Permanente* • *Lisa Tseng, Optum, hi HealthInnovations*
1:55–2:15 p.m.	Discussion with the Committee
2:15–3:40 p.m.	**Panel 5: Devices** *Facilitator: Richard Ellenson*
2:15–2:20 p.m.	Panel Introductions
2:20–3:20 p.m.	Presentations • *Thomas Powers, Sivantos, Inc.* • *Holly Hosford-Dunn, Hearing Health and Technology Matters* • *Mead Killion, Etymotic Research, Inc.* • *Kinu Masaki, SmartEar, Inc.*
3:20–3:40 p.m.	Discussion with the Committee
3:40–3:55 p.m.	**Break**

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Hearing Health Care for Adults: Priorities for Improving Access and Affordability

3:55–5:20 p.m.	**Panel 6: Consumer Perspective** *Facilitator: Brenda Battat*
3:55–4:00 p.m.	Panel Introductions
4:00–5:00 p.m.	Presentations • *Julie Kearney, Consumer Electronics Association* • *Harvey Abrams, Hearing Industries Association* • *Richard Einhorn, Einhorn Consulting, LLC* • *Richard Uzuanis, Americans for Better Hearing Foundation*
5:00–5:20 p.m.	Discussion with the Committee
5:20–6:00 p.m.	**Public Comment** *Moderator: Dan Blazer*
6:00 p.m.	**Open Session Adjourns**

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Hearing Health Care for Adults: Priorities for Improving Access and Affordability

Committee on Accessible and Affordable Hearing Health Care for Adults

THIRD COMMITTEE MEETING
SEPTEMBER 10–11, 2015

Keck Center of the National Academies
Room 100
500 Fifth Street, NW
Washington, DC 20001

Thursday, September 10, 2015

Open Session–Keck 100

8:30–8:40 a.m.	**Welcome and Opening Remarks** *Dan Blazer, Chair*
8:40–10:00 a.m.	**Panel 1: International Perspective** *Facilitator: Frank Lin*
8:40–8:45 a.m.	Panel Introductions
8:45–9:30 a.m.	Presentations • *Adrian Davis (via Webex)* • *Curtis Alcock, Audira (via Webex)* • *Mark Laureyns, AEA - European Association of Hearing Aid Professionals (via Webex)*
9:30–9:55 a.m.	Discussion with the Committee
9:55–10:05 a.m.	**Break**
10:05–10:55 a.m.	**Panel 2: Young Adult Perspective** *Facilitator: Kate Seelman*
10:05–10:10 a.m.	Panel Introductions
10:10–10:40 a.m.	Presentations • *Zina Jawadi, Stanford University (via Webex)* • *Patrick Holkins, Department of Justice*
10:40–10:55 a.m.	Discussion with the Committee

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Hearing Health Care for Adults: Priorities for Improving Access and Affordability

10:55 a.m.–12:30 p.m.	**Panel 3: Improving Accessibility and Affordability** *Facilitator: Darrell Gaskin*
10:55–11:00 a.m.	Panel Introductions
11:00 a.m.–12:00 p.m.	Presentations • *Ateev Mehrotra, Harvard Medical School* • *David Zapala, Mayo Clinic, Committee Member* • *Jani Johnson, University of Memphis* • *Gustav Chiarello, Federal Trade Commission*
12:00–12:30 p.m.	Discussion with the Committee
12:30–1:00 p.m.	**Public Comments**
1:00 p.m.	**Open Session Adjourns**

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Hearing Health Care for Adults: Priorities for Improving Access and Affordability

Committee on Accessible and Affordable Hearing Health Care for Adults

FOURTH COMMITTEE MEETING
NOVEMBER 13, 2015

Keck Center of the National Academies
Room 100
500 Fifth Street, NW
Washington, DC 20001

Open Session – Keck 201

11:00 a.m.–12:00 p.m.	**Report of the President's Council of Advisors on Science and Technology** Presentation *Christine Cassel, President's Council of Advisors on Science and Technology Member* Discussion with the Committee

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B

Committee Biographies

Dan G. Blazer, M.D., Ph.D., M.P.H. (*Chair*), is the J. P. Gibbons Professor of Psychiatry Emeritus at Duke University. He served 9 years as chair of the Department of Psychiatry and dean of medical education at Duke School of Medicine. Dr. Blazer's research interests include the epidemiology of late-life substance use disorders and depression, psychosocial predictors of adverse health outcomes, and trajectories of health outcomes. He has worked on the Established Populations for Epidemiologic Study of the Elderly (EPESE) and the National Comorbidity Study. He is the author or editor of 36 books, including *The Age of Melancholy: Depression and Its Social Origins* and a research methods textbook for clinical psychiatry research. He has produced a second edition of *Emotional Problems in Later Life* and authored or co-authored more than 200 published abstracts and more than 460 peer-reviewed articles. Dr. Blazer was president of the American Association of Geriatric Psychiatry and is a current member of the editorial board of *JAMA Psychiatry*. He has been a member of the National Academy of Medicine since 1995. Currently he is the chair of the National Academies of Sciences, Engineering, and Medicine's (the Academies') Board on the Health of Select Populations. He has served as a member or chair of many past Academies committees. He received the Walsh McDermott Award for Distinguished Service to the Institute of Medicine in 2014.

Brenda Battat, M.S., MCSP, is the retired executive director of the Hearing Loss Association of America (HLAA). During 24 years with the HLAA, 5 as executive director, she led nationwide advocacy efforts to change the way society views hearing loss, pushed for accessible and affordable hearing

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health care and consumer choice in the marketplace, promoted hearing-friendly environments through technology such as looping and captioning, and successfully advocated for hearing-aid-compatible mobile products. She upheld the philosophy of self-help and encouraged and taught consumers to self-advocate. Ms. Battat has served on government, professional, and business advisory boards, including the U.S. Access Board's Telecommunications Access Advisory Committee, the Federal Communications Commission's Consumer/Disability Advisory Committee, the AT&T Advisory Panel on Access and Aging, the National Advisory Group—National Technical Institute for the Deaf, the American and Northwest Airlines Consumer Advisory Committees, and the National Institute on Deafness and Other Communication Disorders Advisory Council of the National Institutes of Health. Ms. Battat received an M.S. in education from Indiana University and a B.Sc. in physical therapy from St. Mary's Hospital, London, England. For her work she received the Sheldon Williams Itzkoff Leadership Award (2010); Robert H. Weitbrecht Telecommunications Access Award (2007); Oticon Focus on People Advocacy Award (2005); and Self Help for Hard of Hearing People National Access Award (2002).

Karen J. Cruickshanks, Ph.D., is a professor of ophthalmology and visual sciences and population health sciences at the University of Wisconsin School of Medicine and Public Health. She received her Ph.D. in epidemiology from the University of Pittsburgh Graduate School of Public Health. Her research program is studying the health problems of aging through epidemiological cohort studies. The Epidemiology of Hearing Loss Study (EHLS) is funded by the National Institute on Aging (AG11099) to study hearing, olfactory, and cognitive impairments in a population-based cohort of 3,500 older residents of Beaver Dam, Wisconsin. The focus of this research is on the roles of inflammation and vascular factors on age-related disorders. The Beaver Dam Offspring Study funded by the National Institute on Aging follows the adult children of the EHLS to study generational differences in the risk of age-related sensorineural disorders. She is the director of the EpiSense Audiometry Reading Center which provides support for other cohort studies of hearing, including the Hispanic Community Health Study, a multicenter study of 16,000 Latinos, and the Epidemiology of Diabetes Interventions and Complications study of hearing impairment. A major theme of her research is the links between subclinical atherosclerosis, inflammation, and the sensory and neurological disorders of aging. Dr. Cruickshanks has served on a number of Institute of Medicine committees, including the Committee on Gulf War and Health: Long-Term Effects of Blast Exposure.

Jennifer E. DeVoe, M.D., D.Phil., is a practicing family physician and doctorally trained health services researcher who studies access to health care,

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disparities in care, and the impact of practice and policy interventions on vulnerable populations. Her research portfolio spans both Oregon Health & Science University (OHSU) Family Medicine and OCHIN, Inc., a health information technology network based in Portland, Oregon. Dr. DeVoe leads a multidisciplinary research team with expertise in informatics, sociology, epidemiology, biostatistics, economics, primary care, mental health, health-services research, clinical medicine, health care disparities, and anthropology. Using large health insurance claims, electronic health records (EHRs), and self-reported datasets, this OHSU/OCHIN team uses informatics and analytics to conduct policy-relevant and practice-relevant studies. Research findings inform community, practice, and policy interventions that help to improve the delivery of care for vulnerable populations and eliminate health disparities. Dr. DeVoe is chief research officer at OCHIN where she serves as executive director of the OCHIN practice-based research network of community health centers. Since 2004, Dr. DeVoe has led or supported more than 30 studies to conduct health services, primary care, and disparities research in primary care clinics in the OCHIN network. Dr. DeVoe is currently the principal investigator on six research studies funded by the Patient-Centered Outcomes Research Institute; the Agency for Healthcare Research and Quality; the National Cancer Institute; the National Heart, Lung, and Blood Institute; and the Centers for Disease Control and Prevention, with nearly $20 million in active grant funding. She also serves as the principal investigator of the ADVANCE Clinical Data Research Network, part of PCORnet, which is "horizontally" integrating outpatient EHR data, creating a unique community laboratory for including disadvantaged and vulnerable patients across the country. Dr. DeVoe earned her M.D. from Harvard Medical School in 1999. Selected as a Rhodes Scholar in 1996, she also earned an M.Phil. and D.Phil. from Oxford University in 1998 and 2001, respectively. She completed her family medicine residency at OHSU in 2004.

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tion and the recipient of the James Jerger Career Award for Research in Audiology.

Richard Ellenson, M.B.A., is chief executive officer of the Cerebral Palsy International Research Foundation. He has spearheaded a major effort to transform basic health care for women with disabilities and developed a new initiative to use Kinect technology to provide an innovative gaming interface for people with disabilities. Prior to this, Mr. Ellenson was founder and chief executive officer of two assistive technology companies (Panther and Blink Twice) that helped transform the field of assistive technology for people with disabilities. He has worked tirelessly to create awareness about people with disabilities and to share stories about their vibrant lives. He and his son have been featured as ABC World News People of the Year, on CNBC's *Squawk Box*, in a *New York Times Sunday Magazine* cover story, and as a feature on ESPN's *E:60*. Prior to this work, he was an advertising executive who created campaigns for brands such as American Express and Remy Martin, and who penned the classic line, "It's Not TV. It's HBO." Mr. Ellenson has been honored with the 2012 Visionary Leadership Award from Resources for Children with Special Needs, as a Caregiver of the Year by United Cerebral Palsy of New York City, and by many other organizations within the world of disabilities. He has served on the Advisory Council of NIDCD and on the boards of the Center on Disabilities at California State University at Northridge, the United States Society for Alternative and Augmentative Communication, and the Assistive Technology Industry Association. He has also been the recipient of two NIH grants. He is a graduate of Cornell University and holds an M.B.A. from the Wharton School of the University of Pennsylvania.

Barbara J. Evans, J.D., Ph.D., LLM, joined the University of Houston Law Center (UHLC) in 2007. She is the George Butler Research Professor and the director of the Center for Biotechnology and Law at UHLC and is an affiliated member of the Center for Medical Ethics and Health Policy at Baylor College of Medicine. She was named a Greenwall Foundation Faculty Scholar in Bioethics for the period 2010–2013 and conducts an active research agenda including projects funded by the National Institutes of Health and the Food and Drug Administration (FDA). Her research interests include governance, privacy, and financing issues with large health information networks; the regulation of genomic testing under FDA's medical device regulatory framework and the Clinical Laboratory Improvement Amendments of 1988; and legal barriers to the introduction of new medical technologies and care-delivery concepts. Earlier in her career, she was a partner in the international regulatory practice of a large New York law firm and subsequently advised clients on U.S. privacy, research, and medi-

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cal device regulatory matters. Prior to joining the University of Houston Law Center, she was a research professor of medicine and the director of the Program in Pharmacogenomics, Ethics, and Public Policy at the Indiana University School of Medicine/Center for Bioethics. She holds an electrical engineering degree from the University of Texas at Austin; M.S. and Ph.D. degrees from Stanford University; a J.D. from Yale Law School; and an LLM in health law from the University of Houston; and she completed a postdoctoral fellowship in clinical ethics at the MD Anderson Cancer Center.

Ellen J. Flannery, J.D., is a partner and past co-chair of Covington & Burling LLP's global food and drug law practice group. She advises clients on regulatory strategies and compliance for medical devices, pharmaceuticals, and biological products. She has significant experience in successfully helping clients navigate the regulatory process. Ms. Flannery's clients range from large multinational companies to development-stage companies, venture capital firms, clinical laboratories, and trade associations. She has experience with cutting-edge technologies, including, for example, companion diagnostics, software and mobile medical apps, imaging devices, combination products, and humanitarian use devices. She has successfully helped clients to develop strategic plans for obtaining FDA marketing clearance or approval; appeal from adverse determinations in investigational device exemption and 510(k) contexts; respond to FDA quality system inspections, including 483s and warning letters; and undertake product recalls. She has experience with Clinical Laboratory Improvement Amendments waiver applications and laboratory-developed tests. She advises clients on post-market reporting requirements and advertising and promotional issues. Ms. Flannery has served on Institute of Medicine committees that studied medical device and orphan drug matters, taught food and drug law seminars at three law schools, and regularly publishes and presents on regulatory developments. She is co-editor in chief of Covington's InsideMedicalDevices blog.

Darrell J. Gaskin, Ph.D., is an internationally known expert in health care disparities, access to health care for vulnerable populations, and safety net hospitals. He is the deputy director of the Johns Hopkins Center for Health Disparities Solutions. He seeks to identify and understand barriers to care for vulnerable populations and to develop and promote policies and practices that will improve access to care for the poor, minority, and other vulnerable populations and eliminate racial/ethnic and socioeconomic disparities in health care. His current projects explore the relationship between "place" and health care disparities and examine racial/ethnic and socioeconomic disparities in hospital care. Dr. Gaskin's research has been

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published in *Health Services Research* (*HSR*), *Health Affairs*, *Medical Care Research and Review*, *American Journal of Public Health*, *Medical Care*, and *Inquiry*. Currently, he serves on the editorial boards of *HSR*, *Medical Care Research and Review*, and *Medical Care*. He served on the Institute of Medicine's Committee on Valuing Community-Based, Non-Clinical Prevention Programs and the Committee on the Future of Emergency Care in the U.S. Health System. He is vice chair of the board of directors of AcademyHealth and a member of the Center for Health Policy Development Board, the board of directors for the National Academy of State Health Policy. He is involved in federal and state health policy. He was a member of the Congressional Black Caucus Commission on the Budget Deficit, Economic Crisis, and Wealth Creation. He is a former member of the board of directors of the Maryland Health Insurance Plan, the state's high-risk pool. He served as the vice chair of the board of directors of the Maryland Health Benefits Exchange Commission from 2011 to 2015.

William R. Hazzard, M.D., is a professor of internal medicine who has recently returned to the Wake Forest School of Medicine at the J. Paul Sticht Center on Aging in Winston-Salem, North Carolina. His focus on aging began approximately 40 years ago in Seattle when, following training in endocrinology and metabolism and initiating the Northwest Lipid Research Clinic, he was asked to develop the program on gerontology and geriatric medicine at the University of Washington. Following a sabbatical year in the United Kingdom learning the British approach to geriatrics, he successively initiated programs in geriatrics at three American academic health centers, in so doing moving progressively toward the center of the Department of Internal Medicine as a Division Head at Washington, vice chairman at Hopkins, and finally in 1986 as chairman at Wake Forest, where his negotiated recruitment goal was specifically to "gerontologize" the department and the institution, notably from a newly designed and constructed Sticht Center on Aging, which opened in 1997. Now in semi-retirement, his greatest satisfaction continues to derive from promoting career development with a focus on aging across the life span with students, fellows, and faculty at the Sticht Center and as a leading institutional priority to witness how deeply and broadly its program has continued to expand throughout the university and community. Through all of this he remains fascinated by the question that first drew him to this field: Why do women live longer than men?

Frank R. Lin, M.D., Ph.D., is an associate professor of otolaryngology, geriatric medicine, mental health, and epidemiology at the Johns Hopkins University School of Medicine and the Bloomberg School of Public Health. Dr. Lin completed his medical education, residency in otolaryngology, and

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Ph.D. in clinical investigation, all at Johns Hopkins. He completed further otologic fellowship training in Lucerne, Switzerland. Dr. Lin's clinical practice is dedicated to otology and the medical and surgical management of hearing loss. His epidemiological research focuses on how hearing loss affects the health and functioning of older adults and the role of hearing rehabilitative strategies in potentially mitigating these effects. In particular, his research group has demonstrated that hearing loss in older adults is strongly and independently associated with the risk of cognitive decline, incident dementia, impairments in physical functioning and mobility, and greater health care resource utilization in multiple epidemiological studies. He collaborates extensively with researchers across multiple fields, including gerontology, cognitive neuroscience, audiology, and epidemiology, and he has collaborative working relationships with individuals in industry, government, and nonprofit advocacy organizations. In January 2014 he co-chaired for the Institute of Medicine and the National Research Council a 2-day workshop on hearing loss and healthy aging in Washington, DC.

Nicole Marrone, Ph.D., CCC-A, holds the James S. and Dyan Pignatelli/Unisource Clinical Chair in Audiologic Rehabilitation for Adults at the University of Arizona and is an assistant professor in the Department of Speech, Language, and Hearing Sciences. Her research investigates hearing loss and rehabilitation in adults, with a focus on reducing hearing health care disparities, maximizing communication access, and living well with hearing loss. Her laboratory-based research centers on understanding the effects of hearing loss and amplification on speech communication and memory; her community-based research efforts are focused on the implementation of group audiologic rehabilitation programs and rural health access. Dr. Marrone is the principal investigator of an interdisciplinary research project funded by NIDCD that is developing and testing the effectiveness of a community health worker program to increase access to hearing health care among older Spanish-speaking adults. Dr. Marrone earned her M.S. and Ph.D. degrees in audiology from Boston University and completed a postdoctoral fellowship at Northwestern University prior to joining the faculty at the University of Arizona in 2011. Dr. Marrone's research is currently funded by the University of Arizona Foundation, the University of Arizona ConfluenCenter for Creative Inquiry, the SERTOMA Community Foundation, and NIH.

José A. Pagán, Ph.D., is the director of the Center for Health Innovation at the New York Academy of Medicine and a professor in the Department of Population Health Science and Policy at the Icahn School of Medicine at Mount Sinai. He is a former Robert Wood Johnson Foundation (RWJF) Health & Society Scholar with expertise in health economics and health ser-

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vices research. Dr. Pagán received his Ph.D. in economics from the University of New Mexico, and he is also an adjunct senior fellow of the Leonard Davis Institute of Health Economics at the University of Pennsylvania. Dr. Pagán has served as a consultant on health insurance coverage for the Institute of Medicine and is a member of the National Advisory Committee of the RWJF Health & Society Scholars Program. He is also a member of the board of directors of the American Society of Health Economists. Dr. Pagán was the principal investigator of a 3-year, $7.3 million Health Care Innovation Award from the Centers for Medicare & Medicaid Services to develop and implement the Brookdale Senior Living Transitions of Care Program. He was also a professor and the chair of the Department of Health Management and Policy, School of Public Health, University of North Texas Health Science Center.

Thomas Pippin, BC-HIS, has worked in the hearing health field as a hearing instrument specialist since 1967. From 1973 to 2014 he owned his own practice with multiple offices. He retired in 2014. Mr. Pippin served on the Wisconsin state licensing board for hearing instrument specialists for 10 years, serving as chairman of the board for 9 years. While serving on the board he worked to promote interdisciplinary teamwork in hearing health care. He was active for more than 23 years in working with the Wisconsin licensing exam, including testing oversight and a rewriting of the exam. Mr. Pippin has served on numerous state and national committees related to hearing health, particularly regarding licensing and regulation. His work has focused on consumer service and ensuring quality hearing health care. Mr. Pippin has an extensive collection of antique hearing aids and has written several books on the topic.

Katherine D. Seelman, Ph.D., is the associate dean of disability programs and a professor of rehabilitation science and technology at the School of Health and Rehabilitation Sciences, University of Pittsburgh. She holds secondary appointments in the School of Public Health and the Center for Bioethics and an adjunct position at Xian Jiatong University, China. Formerly serving as co-research director, she became senior policy adviser for the National Science Foundation–supported Quality of Life Technology Engineering Research Center which is housed in the Robotics Institute at Carnegie Mellon University. Dr. Seelman has a lifetime interest in science, technology, public policy, and disability. She is a member of the National Council on Disability and has served as a consultant to the World Health Organization's (WHO's) blindness and deafness unit and to the World Bank. She was one of two from the United States serving on the WHO/World Bank's nine-member international editorial committee to guide the development of the first World Report on Disability and presented a chapter

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of the report, for which she was a principal section author, in 2011 at the United Nations. During the Clinton Administration, she served for 7 years as the director of the National Institute on Disability and Rehabilitation Research in Washington, DC. She was the recipient of the University of Pittsburgh Chancellor's Distinguished Service Award in 2007. Dr. Seelman, who is hard of hearing, serves as adviser to the University's Students for Disability Advocacy and is co-chair of the City of Pittsburgh-Allegheny County Task Force on Disability. She is widely published and the recipient of many awards.

Debara L. Tucci, M.D., M.S., M.B.A., is a professor of otolaryngology head and neck surgery, at Duke University. Dr. Tucci has a subspecialty practice in otology, neurotology, and skull base surgery, and she also conducts basic science and clinical research. Prior to medical school, she received an M.S. in audiology from the University of Michigan and worked as a clinical audiologist for 4 years at University of Virginia Hospital. She is co-principal investigator on an NIH–funded grant focused on establishing a network of academic and community-based research sites to conduct clinical research in hearing and balance disorders. In this effort she interfaces with the Duke Clinical Research Institute and has been able to access the resources of that institute for program development. She is also the principal investigator of a grant designed to develop a protocol for hearing screening of older adults in primary care practices and to investigate the need for medical evaluation of adults who are considering hearing aid purchase. Dr. Tucci's leadership roles in professional societies include president of the American Auditory Society, secretary-treasurer and president of the American Neurotology Society, president of the Association for Research in Otolaryngology, board of directors for the American Academy of Otolaryngology Head and Neck Surgery, and research fund trustee and current president of the American Otological Society. She completed a year-long leadership training program, Executive Leadership for Academic Medicine, and holds an M.B.A. degree with a certificate in health sector management from the Duke Fuqua School of Business.

David A. Zapala, Ph.D., is an associate professor of audiology in the College of Medicine, Mayo Clinic Foundation. He is also a senior consultant in otorhinolaryngology and the chair of the Audiology Section at the Mayo Clinic in Florida. He is active in direct patient care; resident, fellow, and postdoctoral mentorship; clinical research; and clinical information management. From a research perspective, he has focused on mathematical modeling methods to improve audiological and vestibular diagnostics and quantify the functional consequences of hearing impairment. He also studies the perceptual and functional consequences of vestibular and bal-

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ance disorders. Dr. Zapala received a master of science degree from Utah State University in 1983 and a Ph.D. from the University of Memphis in 1993. Early in his career he developed the Mid-South Lions Infant Hearing Center and the Methodist/University of Tennessee Hearing and Balance Center at Methodist Healthcare in Memphis. He also served as a clinical professor in otolaryngology at the University of Tennessee. Dr. Zapala has published and taught in the areas of vestibular assessment and diagnostic audiology. He has served on the American Board of Audiology and the board of the American Academy of Audiology and the American Balance Society and is a past president of the Tennessee Academy of Audiology. He is the recipient of the Edward Dalstrom Distinguished Service Award by the Mid-South Lions Sight and Hearing Service (2001); Distinguished Service Award from the American Board of Audiology (2007); Jerger Mentor Award in Clinical Research (2009); Outstanding Alumnus of the Year by School of Communication Sciences and Disorders, University of Memphis (2013); and the Arnold D. Tuttle Award for co-authorship of the winning paper in Aviation, Space, and Environmental Medicine (2013). His research is supported by the Mayo Clinic, the Knowles Foundation, and NIH. He is currently funded by NIDCD to study how well consumers and audiologists can assess ear disease risk prior to hearing aid purchase.

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Trends in Health Care Costs and Utilization Associated With Untreated Hearing Loss Over 10 Years

Nicholas S. Reed, AuD; Aylin Altan, PhD; Jennifer A. Deal, PhD; Charlotte Yeh, MD; Alexander D. Kravetz, PharmD; Margaret Wallhagen, RN, PhD; Frank R. Lin, MD, PhD

IMPORTANCE Nearly 38 million individuals in the United States have untreated hearing loss, which is associated with cognitive and functional decline. National initiatives to address hearing loss are currently under way.

OBJECTIVE To determine whether untreated hearing loss is associated with increased health care cost and utilization on the basis of data from a claims database.

DESIGN, SETTING, AND PARTICIPANTS Retrospective, propensity-matched cohort study of persons with and without untreated hearing loss based on claims for health services rendered between January 1, 1999, and December 31, 2016, from a large health insurance database. There were 154 414, 44 852, and 4728 participants at the 2-, 5-, and 10-year follow-up periods, respectively. The study was conceptualized and data were analyzed between September 2016 and November 2017.

EXPOSURES Untreated hearing loss (ie, hearing loss that has not been treated with hearing devices) was identified via claims measures.

MAIN OUTCOMES AND MEASURES Medical costs, inpatient hospitalizations, total days hospitalized, 30-day hospital readmission, emergency department visits, and days with at least 1 outpatient visit.

RESULTS Among 4728 matched adults (mean age at baseline, 61 years; 2280 women and 2448 men), untreated hearing loss was associated with $22 434 (95% CI, $18 219-$26 648) or 46% higher total health care costs over a 10-year period compared with costs for those without hearing loss. Persons with untreated hearing loss experienced more inpatient stays (incidence rate ratio, 1.47; 95% CI, 1.29-1.68) and were at greater risk for 30-day hospital readmission (relative risk, 1.44; 95% CI, 1.14-1.81) at 10 years postindex. Similar trends were observed at 2- and 5-year time points across measures.

CONCLUSIONS AND RELEVANCE Older adults with untreated hearing loss experience higher health care costs and utilization patterns compared with adults without hearing loss. To further define this association, additional research on mediators, such as treatment adherence, and mitigation strategies is needed.

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More than 38 million adults in the United States experience hearing loss, and the prevalence increases with age such that two-thirds of adults older than 70 years have clinically meaningful hearing loss.[1] Based on current aging population trends, the number of Americans with hearing loss is projected to increase to more than 73 million by 2060.[2] Importantly, hearing loss has been associated with negative health outcomes, including cognitive decline,[3] incident dementia,[4] falls,[5] depression,[6] reduced quality of life,[7] and an increased number of emergency department visits[8] and hospitalizations.[9] However, fewer than 20% of adults with hearing loss report using hearing aids.[10]

Hearing loss recently received recognition as a national public health concern.[11-15] Reports from the President's Council of Advisors on Science and Technology[12] and the National Academies of Science, Engineering, and Medicine[11] have called for policy changes to better understand the influence of hearing loss on health in the United States and to address the condition. These initiatives resulted in the passage of the Over-the-Counter Hearing Aid Act of 2017.[15] However, there remains a limited understanding of the broader influence that hearing loss may have on health care cost and resource utilization.[8,16,17]

This study investigates the association between untreated hearing loss (based on the lack of evidence of hearing device use in claims data and the assumption that relatively few persons with hearing loss use hearing aids[10]) and health care costs and utilization over a 10-year period using claims data from a large, deidentified administrative claims database from a geographically diverse US health insurance plan.

Key Points

Question Is untreated hearing loss associated with higher health care costs and utilization?

Findings In this retrospective, propensity-matched cohort study of claims data, compared with no hearing loss, untreated hearing loss was associated with higher health care costs and a higher risk of 30-day hospital readmission over a 10-year period.

Meaning Untreated hearing loss may contribute to greater health care costs and utilization.

Methods

Data Source

This retrospective, propensity-matched cohort study used deidentified administrative claims data from the OptumLabs Data Warehouse (OLDW) to identify hearing products purchased or health services rendered between January 1, 1999, and December 31, 2016. Institutional review board approval and patient informed consent were not required because the deidentified data complies with the Health Insurance Portability and Accountability Act Privacy Rule. The OLDW includes deidentified claims data for more than 125 million privately insured and Medicare Advantage (MA) enrollees in a large, private, US health plan from 1993 to the present and represents a diverse population in terms of age, race/ethnicity, and US geographic region. The health plan provides comprehensive insurance coverage for physician, hospital, and prescription drug services, including Part D coverage for MA enrollees. The database includes socioeconomic information, such as race/ethnicity, household income, and education level, for approximately 73% of enrollees. This information was derived from a nationally recognized supplier of consumer marketing data and is a compilation of public data and derived predictive data. While the imputation methods used by this supplier are proprietary, imputation methods for race/ethnicity have been shown in previous studies to have moderate sensitivity (48%), excellent specificity (97%), and moderate positive predictive value (71%) for the purpose of identifying race.[18]

Outcome Variables

The primary outcome of this study was medical costs, measured as health plan–paid (HPP), out-of-pocket (OOP), and total paid (ie, the sum of all HPP and OOP) costs for all medical services reimbursed by health insurance during the follow-up period. Costs were adjusted to 2015 US dollars using the medical care component of the Consumer Price Index.[19] Secondary outcomes included medical costs not related to hearing services and measures of health care utilization, such as the number of inpatient hospitalizations, total days hospitalized, number of readmissions within 30 days of discharge, number of emergency department visits, and number of days with at least 1 outpatient visit (including visits for hearing-related services and visits for non–hearing-related services). Office visit days for hearing loss were defined as the total number of days during follow-up with at least 1 office visit related to hearing services.

Exposure

Older adults with and without hearing loss were identified from OLDW. Eligible participants were 50 years or older. Hearing loss status was determined by the presence of at least 2 claims separated by no more than 730 days with an *International Classification of Disease, 9th Revision, Clinical Modification* (*ICD-9-CM*) diagnosis code for hearing loss: V41.2 (problems with hearing), 388.01 (presbycusis), 389 (hearing loss), 389.1x (sensorineural hearing loss, excluding 389.12 [neural hearing loss, bilateral] and 389.14 [central hearing loss]), 389.2x (mixed conductive and sensorineural hearing loss) in any position during the identification period of January 1, 2000, to December 31, 2014. The date of the first claim was designated as the index date. To ensure that complete information was obtained, participants were required to have at least 12 months of continuous enrollment in the plan prior to the index date and at least 2 years of continuous enrollment after the index date. Exclusion criteria included evidence of hearing loss prior to the index date, first evidence of hearing loss experienced during an inpatient stay (indicating an acute issue), evidence of hearing device use via claims data before or within 2 years of the index date, and/or evidence of ototoxic drug use in the 12-month period prior to the index date. Furthermore, individuals were excluded if they had evidence of hearing loss secondary to correctable medical conditions (ie, via surgical measures) or hearing loss fundamentally different from typical peripheral age-related hearing loss (ie, central pathology) including

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sudden hearing loss (*ICD-9-CM* code, 388.2), hyperacusis (*ICD-9-CM* code, 388.42), acoustic nerve disorders (*ICD-9-CM* code, 388.5), otorrhea (*ICD-9-CM* code, 388.6x), otalgia (*ICD-9-CM* code, 388.7x), conductive hearing loss (*ICD-9-CM* code, 389.0x), neural hearing loss (*ICD-9-CM* code, 389.12), and/or central hearing loss (*ICD-9-CM* code, 389.14). A pool of candidate participants with no evidence of hearing loss diagnosis at any point was selected, with the index date set to a random date of service within the capture window. Three nested samples were created, based on data availability for 2-, 5-, and 10-year follow-up periods. The resulting samples are nonmutually exclusive (ie, participants who qualified for the 10-year sample also qualified for the 5- and 2-year samples).

Statistical Analysis

Because of suspected underlying differences in persons with and without hearing loss, matched cohorts were created for each of the 3 follow-up times using a 2-stage process. First, participants with untreated hearing loss were block-matched to persons with no evidence of hearing loss within the cohort year (2, 5, or 10), insurance type (commercial or MA), and cost deciles. Subsequently, nearest-neighbor 1:1 caliper-based greedy propensity score matching without replacement was used, with the following variables measured during the 1 year prior to the index date included in the propensity model: age,[2] sex, census geographic region, net worth, race/ethnicity, education level, Charlson Comorbidity Index,[20] number of office visits (natural log transformed, both linear and quadratic terms), number of inpatient stays, inpatient length of stay, number of emergency department visits, dementia, mild cognitive impairment, depression, stroke, myocardial infarction, coronary artery disease, breast cancer, prostate cancer, renal cell carcinoma, colorectal cancer, and baseline medical costs (evidence of any costs and total medical costs). Block matching on cost deciles was required owing to the skewed nature of cost, which can result in poorly matched cost distributions. Within each block, caliper matching was used to match persons with untreated hearing loss to the closest person without hearing loss with a propensity score within 0.2 SDs. Unmatched participants were excluded from analysis. The quality of the matched cohorts was assessed using absolute standardized differences (ASD). Following matching, no variable exhibited an ASD greater than 10%, indicating that persons with or without untreated hearing loss were balanced on baseline variables, including follow-up time.

Descriptive statistics were reported for all study measures and baseline covariates. Univariate comparisons were conducted according to the distribution of the data, using *t* tests, χ^2 tests, and Mann-Whitney *U* tests when appropriate. Statistical significance was assessed at the 2-sided 5% level unless otherwise indicated. Given the large sample size, it was expected a priori that formal statistical tests would show evidence of statistically significant but not clinically significant differences in baseline variables between patients with and without hearing loss even after matching.

Differences in means and proportions and associated 95% CIs are reported. The output of event modeling is also presented as incidence rate ratios, risk ratios, and absolute risk differences.[21] In addition to specifications with the cohort indicator only, multivariable analysis was conducted on the matched cohorts to evaluate whether residual confounding remained after matching. Covariates in these models included sociodemographics (eg, age, sex, geographic region, race/ethnicity, net worth), insurance type, and indicators of comorbidity and health-service use measured during the 12-month baseline period. Medical cost variables were analyzed using generalized linear models, assuming a gamma-distributed error and log link.[22] This assumption was tested using the modified Park test. The incremental cost of untreated hearing loss was calculated using recycled predictions to facilitate interpretation.[23] Negative binomial regression was used to model the number of inpatient hospitalizations and total days hospitalized. The 30-day hospital readmission and emergency department visits were modeled using a modified Poisson regression with robust standard errors and are presented as relative risks (RRs) with 95% CIs.[24] Marginal effects, standard errors, and 95% CIs for all multivariable models were calculated using the delta method.[25]

Analytic files were created using SAS software, version 9.4 (SAS Institute). All analyses were performed using R 3.3.2 (R Core Team, 2016), including R packages ggplot2, data.table, tableone, Rcpp, Zelig, attribrisk, lmtest, sandwich, modmarg, car, ggfortify, and survival; additional R code was custom created. Matching was done in C++ and R; the code is original and was written by one of us (A.D.K).

Results

Matching

Prior to propensity score matching, there were 77 310 participants with untreated hearing loss and 3 251 863 potential participants without hearing loss. Prior to matching, a greater proportion of persons in the untreated hearing loss cohort were MA enrollees, had greater net worth and education levels, and exhibited a greater level of comorbidity during the 12-month baseline period compared with persons with no evidence of hearing loss. These differences agree with previous research on characteristics of persons with hearing loss and access to hearing care.[1] Differences between cohorts were resolved via the matching process. All but 103 persons with hearing loss were matched, and unused data from 3 174 656 unexposed potential participants were dropped. Compared with persons who were included in the study, those persons without hearing loss who were excluded from the study were less likely to be MA enrollees (31.1% vs 17.5%), were younger (63.8 vs 59.5 years), were less likely to be in the highest net-worth bracket (25.5% vs 19.9%), were less likely to be white (60.4% vs 54.5%), and were less likely to be college educated (15.4%, vs 12.0%). Excluded individuals also had fewer office visits on average (13.4 vs 18.6 visits) and lower average medical costs ($7799 vs $8480) during the baseline year than retained participants had.

Demographic Characteristics

Table 1 lists the characteristics of the matched cohorts at 2-, 5-, and 10-year time points. Between 2000 and 2014, there

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Table 1. Participant Baseline Characteristics

Characteristic	No. (%)[a]					
	2-y Cohort		5-y Cohort		10-y Cohort	
	Untreated Hearing Loss (n = 77 207)	No Hearing Loss (n = 77 207)	Untreated Hearing Loss (n = 22 426)	No Hearing Loss (n = 22 426)	Untreated Hearing Loss (n = 2364)	No Hearing Loss (n = 2364)
Age, mean (SD)	63.80 (9.74)	63.79 (9.70)	61.71 (9.22)	61.70 (9.20)	61.03 (9.30)	61.05 (9.28)
Female	37 309 (48.3)	37 155 (48.1)	10 792 (48.1)	10 671 (47.6)	1150 (48.6)	1130 (47.8)
Race						
Asian	1707 (2.2)	1626 (2.1)	385 (1.7)	352 (1.6)	39 (1.6)	34 (1.4)
Black	4367 (5.7)	4420 (5.7)	1312 (5.9)	1373 (6.1)	144 (6.1)	162 (6.9)
Hispanic	3933 (5.1)	4039 (5.2)	1061 (4.7)	1050 (4.7)	89 (3.8)	95 (4.0)
Unknown	20 428 (26.5)	20 452 (26.5)	6282 (28.0)	6389 (28.5)	605 (25.6)	642 (27.2)
White	46 772 (60.6)	46 670 (60.4)	13 386 (59.7)	13 262 (59.1)	1487 (62.9)	1431 (60.5)
Region						
Midwest	21 896 (28.4)	21 951 (28.4)	6903 (30.8)	6796 (30.3)	861 (36.4)	830 (35.1)
Northeast	14 536 (18.8)	14 323 (18.6)	3966 (17.7)	3906 (17.4)	418 (17.7)	436 (18.4)
South	31 820 (41.2)	31 929 (41.4)	9205 (41.0)	9329 (41.6)	882 (37.3)	899 (38.0)
West	8955 (11.6)	9004 (11.7)	2352 (10.5)	2395 (10.7)	203 (8.6)	199 (8.4)
Net worth, $						
Unknown	22 874 (29.6)	22 951 (29.7)	6978 (31.1)	7137 (31.8)	673 (28.5)	718 (30.4)
<25 000	2771 (3.6)	2707 (3.5)	729 (3.3)	682 (3.0)	80 (3.4)	77 (3.3)
24 000-149 000	7610 (9.9)	7447 (9.6)	2038 (9.1)	1998 (8.9)	206 (8.7)	185 (7.8)
150 000-249 000	7678 (9.9)	7815 (10.1)	2047 (9.1)	2043 (9.1)	195 (8.2)	193 (8.2)
250 000-499 000	16 404 (21.2)	16 564 (21.5)	4745 (21.2)	4738 (21.1)	558 (23.6)	560 (23.7)
≥500 000	19 870 (25.7)	19 723 (25.5)	5889 (26.3)	5828 (26.0)	652 (27.6)	631 (26.7)
Education						
<12th grade	231 (0.3)	219 (0.3)	39 (0.2)	37 (0.2)	Masked data[b]	Masked data[b]
High school diploma	14 647 (19.0)	14 568 (18.9)	3937 (17.6)	3890 (17.3)	380 (16.1)	386 (16.3)
<Bachelor's degree	31 981 (41.4)	32 166 (41.7)	9139 (40.8)	9072 (40.5)	992 (42.0)	965 (40.8)
≥Bachelor's degree	12 068 (15.6)	11 886 (15.4)	3621 (16.1)	3594 (16.0)	444 (18.8)	430 (18.2)
Unknown	18 280 (23.7)	18 368 (23.8)	5690 (25.4)	5833 (26.0)	<546	<585
Medicare	24 028 (31.1)	24 028 (31.1)	6025 (26.9)	6025 (26.9)	755 (31.9)	755 (31.9)
Baseline utilization, mean (SD)						
Inpatient stays	0.14 (0.47)	0.14 (0.43)	0.12 (0.42)	0.12 (0.39)	0.10 (0.34)	0.10 (0.33)
Total inpatient, d	0.79 (4.94)	0.82 (4.30)	0.61 (3.31)	0.64 (3.22)	0.54 (2.49)	0.54 (2.36)
Outpatient encounters	18.73 (18.18)	18.63 (17.84)	17.17 (16.07)	17.13 (15.67)	15.55 (14.35)	14.91 (13.33)
ED visits	0.32 (0.77)	0.32 (0.75)	0.27 (0.69)	0.27 (0.66)	0.24 (0.59)	0.22 (0.54)
Medical costs, $	8311.24 (20 645.18)	8479.90 (19 165.55)	7418.90 (17 586.02)	7536.63 (15 933.56)	6365.09 (14 413.20)	6272.95 (11 928.82)
Baseline comorbidities						
Charlson Comorbidity Index, mean (SD)	1.12 (1.71)	1.12 (1.68)	0.89 (1.48)	0.90 (1.47)	0.69 (1.24)	0.68 (1.20)
Acute myocardial infarction, No. (%)	324 (0.4)	301 (0.4)	87 (0.4)	76 (0.3)	13 (0.5)	14 (0.6)
Depression	8358 (10.8)	8325 (10.8)	2147 (9.6)	2109 (9.4)	201 (8.5)	192 (8.1)
Dementia	2104 (2.7)	2189 (2.8)	381 (1.7)	411 (1.8)	14 (0.6)	18 (0.8)
Stroke	1963 (2.5)	1953 (2.5)	466 (2.1)	437 (1.9)	35 (1.5)	30 (1.3)
Mild cognitive impairment	107 (0.1)	113 (0.1)	Masked data[b]	Masked data[b]	Masked data[b]	Masked data[b]
Coronary artery disease	8744 (11.3)	8850 (11.5)	2119 (9.4)	2195 (9.8)	208 (8.8)	224 (9.5)

Abbreviations: ASD, absolute standard difference; ED, emergency department.

[a] Absolute standard difference was less than 10% for all comparisons.

[b] Sample size masked owing to small sample size.

were 154 414, 44 852, and 4728 participants with and without untreated hearing loss who met study inclusion criteria and had 2, 5, and 10 years of follow-up, respectively. As detailed in Table 1, across the 3 samples of matched persons at 2-, 5-, and 10-year follow-up, the mean age range was 61 to 64 years, 47.6% to 48.6% of participants were women, and 59.1% to

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Table 2. Postpropensity Score Matching, Unadjusted Health-Service Costs and Utilization for Untreated Hearing Loss vs No Hearing Loss Groups

Follow-up Measure	2-y Cohort		5-y Cohort		10-y Cohort	
	Untreated Hearing Loss (n = 77 207)	No Hearing Loss (n = 77 207)	Untreated Hearing Loss (n = 22 426)	No Hearing Loss (n = 22 426)	Untreated Hearing Loss (n = 2364)	No Hearing Loss (n = 2364)
Medical costs, mean (SD), $	18 744.36 (40 628.30)	14 892.70 (32 038.23)	41 386.64 (64 387.99)	30 239.23 (4259.55)	70 631.60 (84 918.08)	48 198.08 (60 954.44)
Difference (95% CI)	3851.70 (3486.82-4216.59)		11 147.4 (10 086.34-12 208.47)		22 433.52 (18 218.61-26 648.43)	
Non–hearing loss medical costs, mean (SD), $	18 362.40 (40 613.22)	14 892.70 (32 038.23)	40 916.95 (64 371.86)	30 239.23 (49 259.55)	70 075.82 (84 894.26)	48 198.08 (60 954.44)
Difference (95% CI)	3469.70 (3104.82-3834.59)		10 677.72 (9616.81-11 738.62)		21 877.74 (17 663.61-26 091.87)	
Inpatient stays, mean (SD)	0.28 (0.78)	0.24 (0.69)	0.62 (1.34)	0.48 (1.08)	1.24 (2.05)	0.86 (1.60)
Difference (95% CI)	0.04 (0.03-0.05)		0.14 (0.12-0.16)		0.38 (0.27-0.48)	
Inpatient days, mean (SD)	1.57 (6.78)	1.31 (5.43)	3.25 (9.83)	2.50 (8.25)	6.56 (14.81)	4.46 (10.88)
Difference (95% CI)	0.26 (0.20-0.33)		0.75 (0.58-0.92)		2.1 (1.36-2.84)	
Outpatient visit days, mean (SD)	40.18 (36.49)	32.72 (35.18)	90.76 (72.64)	68.62 (62.21)	168.05 (123.25)	115.85 (95.37)
Difference (95% CI)	7.47 (7.11-7.83)		22.14 (20.89-23.39)		52.19 (45.91-58.48)	
Non–hearing loss office visit days, mean (SD)	39.62 (36.17)	32.47 (35.00)	89.69 (71.99)	68.10 (61.76)	166.00 (121.14)	115.13 (94.79)
Difference (95% CI)	7.15 (6.80-7.51)		21.59 (20.35-22.83)		50.87 (44.67-57.07)	
ED visits, mean (SD)	0.64 (1.37)	0.52 (1.30)	1.39 (2.85)	1.10 (2.14)	2.61 (3.61)	1.81 (2.77)
Difference (95% CI)	0.11 (0.10-0.12)		0.29 (0.24-0.33)		0.8 (0.62-0.98)	
30-d Readmission, No. (%)	1542 (2.0)	1198 (1.6)	829 (3.7)	646 (2.9)	164 (6.9)	114 (4.8)
Difference (95% CI)	0.45 (0.31-0.58)		0.82 (0.48-1.15)		2.12 (0.73-3.50)	

Abbreviation: ED, emergency department.

62.9% of participants were white. The percentage of patients with MA insurance ranged from 26.9% to 31.9% (Table 1). Average Charlson comorbidity index scores ranged from 1.12 in the 2-year cohort to 0.68 in the 10-year cohort. Health care utilization was similar across the 3 samples, with the exception that the 10-year cohort had fewer outpatient encounters (mean, 15.55 in the untreated hearing loss group and 14.91 in the no hearing loss group) compared with the 2-year cohort (mean, 18.73 in the untreated hearing loss group and 18.63 in the no hearing loss group) and the 5-year cohort (mean, 17.17 in the untreated hearing loss group and 17.13 in the no hearing loss group).

Health Care Cost

Table 2 details the postmatching unadjusted mean health care cost and resource utilization at 2-, 5-, and 10-year time points, differences between cohorts, and associated 95% CIs. Compared with no hearing loss, untreated hearing loss was associated with higher medical costs across all 3 cohorts. Unadjusted total cumulative medical costs were 25.9%, 36.9%, and 46.5% higher over the 2-, 5-, and 10-year periods for individuals with untreated hearing loss compared with that of those without hearing loss. This amounted to a mean difference of $3852 (95% CI, $3487-$4217), $11 147 (95% CI, $10 086-$12 208), and $22 434 (95% CI, $18 219-$26 648) higher total health care costs for the individuals with untreated hearing loss compared with health care costs for those without hearing loss (**Figure 1** and **Table 3**). Unadjusted OOP costs were 19.1%, 23.3%, and 34.0% higher over the 2-, 5-, and 10-year periods, respectively, for patients with untreated hearing loss than for patients with no hearing loss. Notably, among the untreated hearing loss cohort, mean costs specifically related to hearing loss were relatively minor within health care expenditures of $382, $470, and $556 at 2, 5, and 10 years, respectively. Results from adjusted multivariable models were substantively unchanged.

Health Resource Utilization

Participants with untreated hearing loss experienced significantly more inpatient stays compared with participants without hearing loss at 2 years (incident rate ratio [IRR], 1.20; 95% CI, 1.15-1.25), 5 years (IRR, 1.30; 95% CI, 1.23-1.38), and 10 years (IRR, 1.47; 95% CI,1.29-1.68) following the index date. Moreover, participants with untreated hearing loss spent more days in the hospital on average with 0.26 (95% CI, 0.20-0.33), 0.75 (95% CI, 0.58-0.92), and 2.10 (95% CI, 1.36-2.84) more days spent in the hospital over the 2-, 5-, and 10-year periods, respectively (Table 2). Similar results were found for outpatient visits. Over the 2 years following the index date, participants with untreated hearing loss had an average of 7.5 (95% CI, 7.1-7.8) more outpatient visit days. By 10 years, patients with untreated hearing loss had 52.2 (95% CI, 45.9-58.5) more outpatient visit days. Participants with untreated hearing loss had a 16.9% increased risk of an emergency department visit within 2 years (RR, 1.17; 95% CI, 1.15-1.19), a 16.8% increased risk over 5 years (RR, 1.17; 95% CI, 1.15-1.19), and a 17.0% increased risk over 10 years (RR, 1.17; 95% CI, 1.12-1.22). **Figure 2** displays the unadjusted difference in risk of 30-day readmissions. Partici-

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pants with untreated hearing loss had a 29% increased risk of a 30-day hospital readmission within 2 years (RR, 1.29; 95% CI, 1.19-1.39), a 28% increase in risk over 5 years (RR, 1.28; 95% CI, 1.16-1.42), and a 44% increase in risk over 10 years (RR, 1.44; 95% CI, 1.14-1.81). Results of the adjusted multivariable analysis were similar to those of the unadjusted analyses.

Discussion

In a matched cohort study of up to 154 414 individuals in a large administrative claims database, untreated hearing loss was associated with higher health care costs, increased risk of 30-day hospital readmission, more inpatient and outpatient stays, increased risk of emergency department visits, and longer length of hospital stays at 2, 5, and 10 years following initial hearing loss diagnosis. Over a 10-year period, persons with untreated hearing loss incurred an average $22 434 more in health care costs than persons without evidence of hearing loss. Importantly, the magnitude of most of these associations appears to compound over time. These findings suggest that persons with untreated hearing loss experience significantly higher health care costs and higher health care utilization rates than those without hearing loss. To our knowledge, this is the first 10-year analysis of the association of untreated hearing loss with health care cost and utilization measures using real-world claims data.

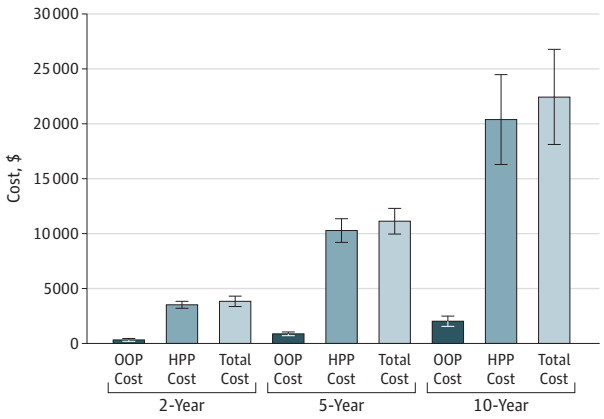
Research on health care costs related to hearing loss is sparse and varies because studies have often examined the overall societal economic influence of hearing loss on projected medical expenses and lost labor productivity rather than on the direct and indirect health care costs that were actually incurred.[16,26] On the basis of a simulated model from California Medicaid data, medical costs directly related to hearing loss diagnosis and treatment 1 year after diagnosis were $1292 per person older than 65 years with any type of hearing loss (ie, mild to functionally deaf).[27] Furthermore, according to data from the 2000 to 2010 Medical Expenditure Panel Surveys (pooled), which includes self-reported hearing loss, persons older than 65 years with hearing loss had, on average, an estimated $392 (95% CI, $277-$392) in excess medical expenditures.[8] These simulated results are relatively low compared with the present study's results.

In the only other, to our knowledge, claims-based study examining hearing loss and medical expenditures, health care costs in patients with hearing loss were substantially higher than those of patients without hearing loss.[17] Researchers conducted a matched analysis of 561 764 individuals with and without hearing loss claims (based on *ICD-9-CM* codes V41.2, V72.1x, 388.00, 388.01, 388.40, 388.43, 388.44, 388.5, 389.1x, and 389.2x) over an 18-month period using the Truven Health MarketScan database. They found that those with hearing loss spent more, on average, in health care costs ($14 165; 95% CI, $14 091-$14 239) than did persons without hearing loss ($10 629; 95% CI, $10 576-$10 681). The difference of $3536 over a 1.5-year period is relatively similar to the difference of $4764 over the 2-year period observed in the present study.

The association between hearing loss and health care service utilization remains mostly unexplored. Two studies found that hearing loss was associated with an increased risk of hospitalization based on objective audiometric measures and self-reported hospitalization rates.[9,28] In 1 study, individuals with hearing loss had a 16% (HR, 1.16; 95% CI, 1.04-1.29) and 21% (HR, 1.21; 95% CI, 1.06-1.38) greater risk of hospitalization compared with those without hearing loss.[9] In addition, the previously noted study of Medical Expenditure Panel Survey data reported increased odds of emergency department visits associated with hearing loss.[8] Our results are broadly consistent with those of these earlier studies and further suggest that hearing loss is associated with increased average length of hospital stay and risk of 30-day readmissions.

The observed associations between hearing loss and health care utilization and costs is possibly explained by the potential influence of hearing loss on cognitive (eg, particularly dementia),[3,4,29,30] physical (eg, falls),[5] and psychosocial[6,31] function. The association between hearing loss and health outcomes may be further mediated by the effects of hearing loss on patient-clinician communication.[32,33] Poor communication has previously been associated with poorer health care

Figure 1. Difference in Unadjusted Mean Patient-Paid, Plan-Paid, and Total Costs for Patients With Untreated Hearing Loss vs Patients With No Hearing Loss



Error bars represent the 95% CI. HPP indicates health plan–paid costs; OOP, out-of-pocket costs.

Table 3. Difference in Unadjusted Mean Costs for Untreated Hearing Loss vs No Hearing Loss Groups

Cohort	Out-of-Pocket Costs (95% CI), $	Health Plan–Paid Costs (95% CI), $	Total Costs (95% CI), $
2-Year	334 (310-358)	3518 (3164-3871)	3852 (3487-4217)
5-Year	876 (792-961)	10 271 (9255-11 287)	11 147 (10 086-12 208)
10-Year	2030 (1624-2436)	20 403 (16 446-24 360)	22 434 (18 219-26 648)

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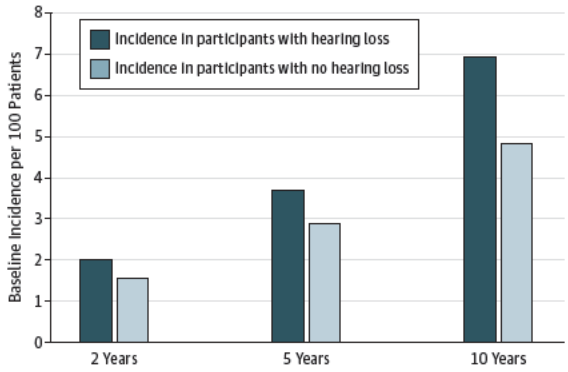
outcomes, poor treatment adherence, lower patient satisfaction, and increased health care costs.[34,35] This study supports the need for future research to understand the role of hearing loss on patient-clinician communication and the potential influence of hearing care, including devices and services, in mitigating the overall association between hearing loss and health care cost. Importantly, given the minimal risk involved and the potential reward, health care clinics and/or institutions could consider awareness and communication training for clinicians and screening programs to identify and address hearing loss as a potential communication barrier.

Limitations

This study used a large, deidentified, geographically diverse database of administrative claims that includes health encounter information for more than 125 million commercial and MA insurance enrollees in the United States. There are several limitations inherent to claims data, including its reliance on coding processes designed for billing purposes rather than research. Capturing the exposure (ie, untreated hearing loss) in a population is likely limited to individuals who feel that hearing loss is a great burden on their lifestyle, those with the means to seek and continuously maintain health care, and those with coverage for hearing services. Because of limitations in the coding and reimbursement for hearing care and hearing devices under some health plan policies, and because some individuals do not seek care for hearing loss, the group without hearing loss diagnosis may include individuals with uncoded hearing loss. However, such a bias would likely lead to underestimation of the differences between these cohorts. Furthermore, hearing device use as a covariate in these data would be unreliable given that many sales occur outside the medical claims data and that access is highly related to socioeconomic status; thus both cohorts may include individuals with treated hearing loss. Again, this resultant bias may underestimate the differences between cohorts. Finally, claims data do not account for indirect costs of untreated hearing loss, such as lost productivity and wages.

Other limitations not related to the data source exist. Though examination of ASDs suggests well-matched cohorts, after matching, a few statistically significant differences were still present between cohorts. However, these differences are to be expected based on the large sample size, and likely do not represent clinically meaningful differences between cohorts. As with most analyses of observational data, despite careful matching, it is possible that residual unmeasured confounding exists owing to a lack of randomized treatment allocation, prohibiting causal inferences from these data. Furthermore, findings may be affected by detection bias because individuals with hearing loss may have frequent interaction with the health care system. Finally, survival bias in the 10-year cohort and a lack of Medicaid and uninsured participants in the database may limit generalizability.

Figure 2. Unadjusted Difference in 30-Day Readmissions for Participants With Untreated Hearing Loss vs Participants With No Hearing Loss



Bar graph represents the unadjusted difference in baseline incidence of 30-day readmissions in the 2- (risk difference [RD], 0.45; 95% CI, 0.31-0.58), 5- (RD, 0.82; 95% CI, 0.49-1.15), and 10- (RD, 0.45; 95% CI, 0.49-1.15) year cohorts with untreated and no hearing loss.

Conclusions

The present study suggests that hearing loss is associated with increased health care expenditures and resource utilization. Notably, hearing loss was associated with an average 46.5% increase in health care costs and a 44% increase in risk of 30-day readmission over a 10-year period. Awareness of the burden that hearing loss places on individuals, insurers, and hospitals contributes to the growing evidence of hearing loss as a public health concern.

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Study concept and design: Reed, Yeh, Kravetz, Wallhagen, Lin.
Acquisition, analysis, or interpretation of data: Reed, Altan, Deal, Yeh, Kravetz, Wallhagen.
Drafting of the manuscript: Reed, Altan, Kravetz, Wallhagen.
Critical revision of the manuscript for important intellectual content: Reed, Altan, Deal, Yeh, Wallhagen, Lin.
Statistical analysis: Altan, Kravetz.
Administrative, technical, or material support: Altan, Yeh, Lin.
Study supervision: Reed, Altan, Yeh, Lin.

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Healthcare Costs for Insured Older U.S. Adults with Hearing Loss

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OBJECTIVES: To measure 18-month healthcare cost difference attributable to hearing loss (HL) in older adults.
DESIGN: Matched cohort.
SETTING: Retrospective analysis of administrative healthcare bills of insured older Americans.
PARTICIPANTS: Older U.S. adults with health insurance in 3 cohorts matched based on HL diagnosis using propensity score methods (N 904,750).
MEASUREMENTS: Comparison groups were defined as those with and without HL diagnosis using *International Classification of Diseases, Ninth Revision*, diagnosis codes from billing records. Outcomes measured include 18-month total healthcare payments and healthcare payments broken down according to payment type (inpatient, outpatient, prescription, hearing services). Three comparison cohorts were examined for these outcomes: individuals covered by Medicare plus supplemental private insurance (Cohort 1, n 782,216), those covered only under Medicare (Cohort 2, n 105,296), and those within the Medicare sample that were dually eligible for Medicare and Medicaid coverage (Subcohort 3, n 17,238). The quality of the propensity score match was examined using standardized differences in means or proportions between all matched covariates, and cost outcomes were analyzed using multiple generalized linear regression models.
RESULTS: Fully adjusted models showed significantly higher 18-month healthcare payments for individuals with a diagnosis of HL without indication of use of hearing services than in those without a HL diagnosis in the 3 samples (payment differences: $3,587 Cohort 1, $3,779 Cohort 2, $4,657 Subcohort 3; all p<.001). Payment differences were also found between individuals with HL and indications of hearing services and those without HL.
CONCLUSION: We observed more than 20% higher total healthcare payments over 18 months for a group of insured individuals with HL regardless of insurance type or hearing services use, indicating that negative health-related effects of HL may increase healthcare use unrelated to HL. Thus, clinical care to ameliorate HL may improve overall health. J Am Geriatr Soc 66:1546–1552, 2018.

Key words: healthcare costs; hearing loss; age-related hearing loss; presbyacusis

Presbyacusis, or age-related hearing loss (HL), is a prevalent medical problem in older adults[1] that has been found to be associated with perceived problems in access to medical care,[2] negative life events such as incident dementia,[3,4] higher rates of falls,[5] poorer cognitive functioning,[6] higher risk of death in men,[7] poorer health-related quality of life,[8–10] and social isolation.[11]

HL is among the most common chronic conditions of aging, with 26.2 million individuals aged 50 and older reporting HL.[3] HL is estimated to affect 63% of the Medicare eligible population aged 70 and older,[1] but only approximately 17% of older U.S. adults with HL use hearing aids.[12] Given these statistics, we might expect HL to be defined as an important public health problem and the target of efforts to improve population health, particularly in view of the projected increases in the aging population, but Healthy People 2020, which identifies the U.S. nationwide health improvement priorities, reports for 2007 that only 162.7 individuals per 1,000 people aged 20 to 69 with HL had ever used a hearing aid.[13] The stated 2020 goal is to increase this rate to 179 per 1,000 individuals by 2020[13]—an increase of 0.8% per year, indicating that this condition is not a high priority target for the nation's health. It is possible that HL in older adults is so common that it is not perceived as a problem or is simply considered a normal consequence of aging that requires diagnosis

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and intervention only if the individual requests it. An alternative view is that decision-makers, such as payors, legislatures, and providers, have a pervasive and persistent lack of understanding of the potential broader health ramifications of HL.

Identification of associations between HL and medical care use is an important health policy step for reclassifying HL from a "condition" to that of a "problem" in the minds of U.S. health policy-makers. This is an essential step for policy changes aimed at increasing awareness of HL and the need for better identification of individuals with HL and improving access to and use of hearing healthcare services.

HL has been associated with social isolation in older adults[11] and frustration.[9] Recent evidence indicates that individuals with HL have significantly higher odds of rating their satisfaction with communication with their physicians below the median (doctor explained things clearly, listened carefully, showed respect for what they had to say, afforded them adequate time) and were less likely to rate the overall quality of their healthcare above the median.[14]

People with HL may feel dissatisfied with communication with their physician and may choose not to make medical visits because they are stressful and frustrating.[15,16] This is an important satisfaction concern that may become an access-to-care barrier.[17] Less-timely healthcare-seeking behavior could lead to a longer time between visits and exacerbate healthcare conditions.[18] These gaps in care may result in increases in use of more-acute, more-expensive healthcare services, resulting in higher healthcare costs.[18] Few studies have examined healthcare cost differences according to HL. To begin to measure the effect of HL on overall healthcare use, our group recently published a cost and usage study of middle-aged privately insured adults that found 33% higher average healthcare services costs over 18 months in a well-matched group of individuals with HL as compared to those without HL.[19]

To examine whether similar results may be found in an older publically insured population, the current study compared the average healthcare costs of a U.S. sample of older adults with and without HL matched on all potential and available cost risk factors and chronic diseases.

METHODS

We extracted information on 2 cohorts of individuals aged 65 and older with an *International Classification of Diseases, Ninth Revision* (ICD-9) code fo HL (V41.2, V72.1x, 388.00, 388.01, 388.40, 388.43, 388.44, 388.5, 389.1x, 389.2x; Supplementary Table S1) and propensity score matched[20] them to a comparison group based on age, sex, ethnicity, U.S. region, insurance type, beneficiary status, Charlson Comorbidity Index score,[21] outpatient services use, and baseline presence of 22 chronic conditions (conductive heart failure, congestive heart failure, pulmonary heart disease, chronic obstructive pulmonary disease, asthma, diverticulitis, renal failure, rheumatoid arthritis, systemic lupus erythematosus, diabetes, human immunodeficiency virus, hepatitis, cystic fibrosis, sickle cell anemia, dementia, schizophrenia, Parkinson's disease, multiple sclerosis, epilepsy, heart valve disorder, carditis or cardiomyopathy, and hypertension with complications).

Information on the cohort of individuals with Medicare plus private insurance (Cohort 1) was extracted using participants the 2009 to 2013 Truven Health MarketScan Research database with at least 18 months of continuous coverage. Information on the second (Cohort 2) and third (Subcohort 3) cohorts was extracted from the 2012–2013 Medicare Limited Data Set standard analytic files national 5% sample. The Medicare (Cohort 2) cohort included individuals who had Medicare coverage as their primary source of insurance. The dually eligible (Subcohort 3) subgroup included individuals within the Medicare group who were dually eligible for Medicaid. Exclusion criteria, variable definitions, matching, and analysis methods were consistent across the 3 samples, with the exception of race, which was unavailable in the Market Scan data (Cohort 1). Each cohort was propensity score matched based on covariates likely to influence selection into a HL group or if those baseline variables that may disproportionally influence cost of care (i.e. confound cost as an outcome).[22] Matching was based on the nearest-neighbor greedy-matching algorithm without caliper distance limits and without replacement.[23] Goodness of match was examined and confirmed for each matched cohort by statistically comparing all matching characteristics using descriptive statistics and with standardized differences in means and proportions of each matching variable being less than 0.2.[24]

Six months of lookback period data were used for each individual to develop the baseline variables for matching. Individuals with diagnoses of late effects of stroke, coma, or paralysis were excluded. Healthcare bills for up to 18 months postbaseline follow-up were summed according to participant to calculate total payments for inpatient, outpatient, prescription medication, and hearing services. Hearing services were defined as ICD-9 procedure codes 9548, 69710, 69711, V532, V5014, V5267, V5298, V5010, V5011, or V5275 (Supplementary Table S2).

Statistical Analysis

Descriptive statistics and crude outcome estimates for the HL and comparison groups were compared using chi-square tests for categorical variables and t-tests (normally distributed) or Mann-Whitney U- or Wilcoxon tests (nonnormally distributed) for continuous variables. P-values for descriptive statistics are not shown because sample sizes were so large as to result in statistically significant differences even if they were not clinically important. Differences between matched groups were tested using standardized differences in means or proportions.

Outcomes analysis for total payments and payment type subgroups were compared according to group using gamma-distributed generalized linear log-linked multivariable regression models, adjusting for baseline covariates. The use of a gamma-distributed generalized linear model with a log-transformed link function has been shown to be a good was to estimate healthcare cost distributions

Table 1. Characteristics According to Hearing Loss (HL)

Characteristic	Cohort 1		Cohort 2		Subcohort 3	
	HL, n = 391,108	No HL, n = 391,108	HL, n = 75,148	No HL, n = 75,148	HL, n = 8,729	No HL, n = 8,509
Age, meant ± SD	75.9 ± 7.8	75.9 ± 7.8	77.1 ± 8.0	77.0 ± 7.9	79.0 ± 8.2	78.6 ± 8.1
Charlson Comorbidity Index, meant ± SD	0.1 ± 0.4	0.1 ± 0.4	0.2 ± 0.7	0.1 ± 0.7	0.3 ± 1.0	0.2 ± 0.9
Follow-up, days, meant ± SD	540.0 ± 29.3	537.5 ± 33.2	450.7 ± 91.5	437.5 ± 95.0	440.4 ± 97.2	432.1 ± 97.7
Sex, n (%)						
Male	192,038 (49.1)	194,133 (49.6)	29,221 (38.9)	29,265 (38.9)	2,343 (26.8)	2,298 (27.0)
Female	199,070 (50.9)	196,975 (50.4)	45,927 (61.1)	45,883 (61.1)	6,386 (73.2)	6,211 (73.0)
White, n (%)	NA	NA	66,669 (88.7)	66,958 (89.1)	5,304 (60.8)	5,288 (62.2)
Hearing services, n (%)	109,968 (28.1)	0 (0.0)	2,873 (3.8)	0 (0.0)	262 (3.0)	0 (0.0)
Chronic conditions, n (%)						
Hypertension with complications	51,411 (13.1)	48,711 (12.5)	47,346 (63.0)	47,647 (63.4)	6,506 (74.5)	6,339 (74.5)
Diabetes mellitus	21,520 (5.5)	20,538 (5.3)	20,147 (26.8)	20,222 (26.9)	3,398 (38.9)	3,238 (38.1)
Conductive heart failure	16,499 (4.2)	15,146 (3.9)	16,504 (22.0)	16,431 (21.9)	2,058 (23.6)	1,890 (22.2)
Heart valve disorder	8,802 (2.6)	7,737 (2.0)	8,364 (11.1)	8,051 (10.7)	1,005 (11.5)	905 (10.6)
Chronic obstructive pulmonary disease, asthma, diverticulitis	8,522 (2.2)	7,561 (1.9)	7,958 (10.6)	8,016 (10.7)	1,405 (16.1)	1,335 (15.7)
Congestive heart failure	4,195 (1.1)	3,518 (0.9)	5,545 (7.4)	5,237 (7.0)	1,229 (14.1)	1,034 (12.2)
Pulmonary heart disease	1,024 (0.3)	845 (0.2)	1,551 (2.1)	1,366 (1.8)	178 (2.0)	153 (1.8)
Asthma	4,943 (1.3)	4,313 (1.1)	3,946 (5.3)	3,930 (5.2)	624 (7.2)	584 (6.9)
Diverticulitis	4,625 (1.2)	4,213 (1.1)	4,082 (5.4)	4,026 (5.4)	410 (4.7)	374 (4.4)
Chronic renal failure	3,791 (1.0)	3,467 (0.9)	4,889 (6.5)	4,691 (6.2)	819 (9.4)	717 (8.4)
Dementia, schizophrenia	2,827 (0.7)	2,473 (0.6)	4,428 (5.9)	4,250 (5.7)	1,254 (14.4)	1,103 (13.0)
Rheumatoid arthritis	2,082 (0.5)	1,778 (0.5)	1,947 (2.6)	1,880 (2.5)	275 (3.2)	246 (2.9)
Carditis, cardiomyopathy	1,909 (0.5)	1,550 (0.4)	1,829 (2.4)	1,702 (2.3)	222 (2.5)	187 (2.2)
Epilepsy	888 (0.2)	731 (0.2)	846 (1.1)	793 (1.1)	181 (2.1)	167 (2.0)
Parkinson's disease	833 (0.2)	700 (0.2)	902 (1.2)	897 (1.2)	167 (1.9)	148 (1.7)
Systemic lupus erythematosus	688 (0.2)	620 (0.2)	633 (0.8)	602 (0.8)	55 (0.6)	53 (0.6)
Hepatitis	382 (0.1)	334 (0.1)	490 (0.7)	390 (0.5)	156 (1.8)	110 (1.3)
Multiple sclerosis, epilepsy	193 (0.1)	174 (0.0)	84 (0.1)	81 (0.1)	9 (0.1)	5 (0.1)
Schizophrenia	104 (0.0)	82 (0.0)	192 (0.3)	153 (0.2)	113 (1.3)	93 (1.1)
Human immunodeficiency virus	62 (0.0)	43 (0.0)	46 (0.0)	35 (0.0)	13 (0.2)	13 (0.2)
Cystic fibrosis	12 (0.0)	10 (0.0)	10 (0.0)	8 (0.0)	1 (0.0)	2 (0.0)
Sickle cell anemia	12 (0.0)	12 (0.0)	9 (0.0)	8 (0.0)	2 (0.0)	0 (0.0)

Cohort 1 is Medicare plus privately insured cohort, Cohort 2 is Medicare only cohort, Subcohort 3 is subgroup of Cohort 2 also eligible for Medicaid.
SD standard deviation; NA not available.

that are generally right skewed, especially when the log-transformed dependent variables do not have heavy tails or excessive heteroscedasticity.[25] Adjustors considered for inclusion in each outcome model include demographic characteristics, chronic conditions, Charlson Comorbidity Index score, number of days in the follow-up period, and use of hearing services. Variables removed from the final models included only those with little to no predictive or confounding effect and no influence on model fit (Akaike Information Criterion) or primary estimate (beta), which resulted in final models including all covariates except the rarer chronic conditions (multiple sclerosis, schizophrenia, human immunodeficiency virus, cystic fibrosis, sickle cell anemia).[26] Sensitivity analyses to assess the effect of hidden bias for each outcome were performed using previously defined methods[27] that provide a way to quantify the robustness of the results when potential selection bias due to unmeasured confounders is simulated. SAS version 9.4 (SAS Institute, Inc., Cary, NC) was used for analysis with p-values considered statistically significant for $\alpha<.05$. The Medical University of South Carolina institutional review board reviewed the study protocol and deemed that it constituted nonhuman research.

RESULTS

Members of Cohort 1 had an average age of 76±7.8, had low comorbidity, and were split evenly between men and women in the HL and no-HL groups (Table 1). Just over 28% of Cohort 1 members with HL received hearing services (Table 1). This cohort had the lowest proportion of chronic illnesses of the 3 groups. The matched Cohort 2

Table 2. Unadjusted 18-Month Healthcare Payments and Hospital Length of Stay

Cohort	HL	HL with Hearing Services	No HL
	Mean ± Standard Deviation		
Cohort 1			
Total, $	21,164 ± 39,824	20,078 ± 45,248	17,569 ± 37,708
Hospital, $[a]	25,837 ± 45,079	19,446 ± 37,846	24,216 ± 44,267
Length of stay, days[a]	6.5 ± 10.7	5.8 ± 7.9	7.4 ± 11.5
Outpatient, $	10,947 ± 24,229	10,551 ± 35,751	8,499 ± 22,717
Hearing services, $	0	2,056 ± 1,194	0
Cohort 2			
Total, $	13,129 ± 21,983	11,848 ± 19,074	10,036 ± 19,789
Hospital, $[a]	18,557 ± 23,831	17,268 ± 18,063	17,814 ± 22,456
Length of stay, days[a]	9.3 ± 12.9	8.8 ± 10.5	9.4 ± 12.8
Outpatient, $	4,655 ± 5,776	3,919 ± 4,544	2,989 ± 1,919
Hearing services, $	0	3,414 ± 3,325	0
Subcohort 3			
Total, $	18,193 ± 29,070	14,658 ± 20,894	13,453 ± 23,376
Hospital, $[a]	21,662 ± 29,828	16,380 ± 19,539	19,588 ± 23,556
Length of stay, days[a]	11.5 ± 15.5	9.1 ± 12.4	10.9 ± 13.8
Outpatient, $	5,428 ± 6,933	3,978 ± 4,259	3,376 ± 5,188
Hearing services, $	0	1,296 ± 1,929	0

Cost of healthcare services estimated as sum of insurance and patient payments in real 2010 2013 US$.
Cohort 1 is Medicare plus privately insured cohort, Cohort 2 is Medicare only cohort, Subcohort 3 is the subgroup of Cohort 2 also eligible for Medicaid.
[a]Includes only participants admitted to the hospital.
HL hearing loss.

had an average age of 77 and was 61.1% female and 89% white (Table 1). Members of Cohort 2 with HL included only 3.8% of participants with an indication of billed hearing services.

Members of the Cohort 2 were more likely that those in Cohort 1 to have a number of chronic conditions. For example, 63% of Cohort 2 and 13% of Cohort 1 have a hypertension diagnosis (Table 1).

Subcohort 3, a subgroup of the Medicare matched cohort, were slightly older (mean 79), more likely to be female (73%), and more racially diverse (63% white, 37% non-white) than Cohort 2. This subgroup had the highest proportion of chronic conditions, with a particularly high proportion of dementia diagnoses (>13%) (Table 1). The propensity score matching within Cohorts 1 and 2 produced very similar groups at baseline. Subcohort 3, although not formally matched, have similar baseline characteristics between the HL diagnosed and not diagnosed comparison groups.

Total unadjusted mean hospital payments were consistently highest in the HL group and lowest in the no-HL group in each of the 3 cohorts, with the HL group with hearing services falling between the 2 (Table 2). When comparing total 18-month healthcare payments of the 3 cohorts, Cohort 1 had the highest (average $21,164 per person), followed by Subcohort 3 ($18,193), and then ($13,129) (Table 2).

Adjusted models of matched cohorts showed significantly higher healthcare payments for individuals with a diagnosis of HL during follow-up than for those with no diagnosis of HL (Table 3). The subgroup of individuals with a diagnosis of HL who received hearing services had significantly lower overall mean costs ($1,431 lower for Cohort 1, $1,648 lower for Cohort 2, $3,431 lower for

Table 3. Adjusted 18-Month Total Healthcare Payments According to Hearing Loss (HL)

Cohort	HL	HL with Hearing Services	No HL
	$, Adjusted Mean (95% Confidence Interval)		
Cohort 1[a]	20,304 (20,211–20,398)	18,873 (18,735–19,012)	16,717 (16,652–16,782)
Cohort 2[b]	11,957 (11,815–12,101)	10,309 (9,713–10,942)	8,178 (8,083–8,275)
Subcohort 3[b]	16,281 (15,737–16,843)	12,850 (10,599–15,579)	11,624 (11,237–12,024)

Estimates are adjusted for age, sex, race (when available), and 17 chronic conditions.
Cohort 1 is the Medicare plus privately insured cohort, Cohort 2 is the Medicare only cohort, and Subcohort 3 is the subgroup of Cohort 2 that is also eligible for Medicaid.
[a]Includes prescription payments
[b]Does not include prescription payments.
All p<.001 within cohort (reference no HL), except within Subcohort 3, in which HL with hearing services was not significantly different (p 26) from no HL.

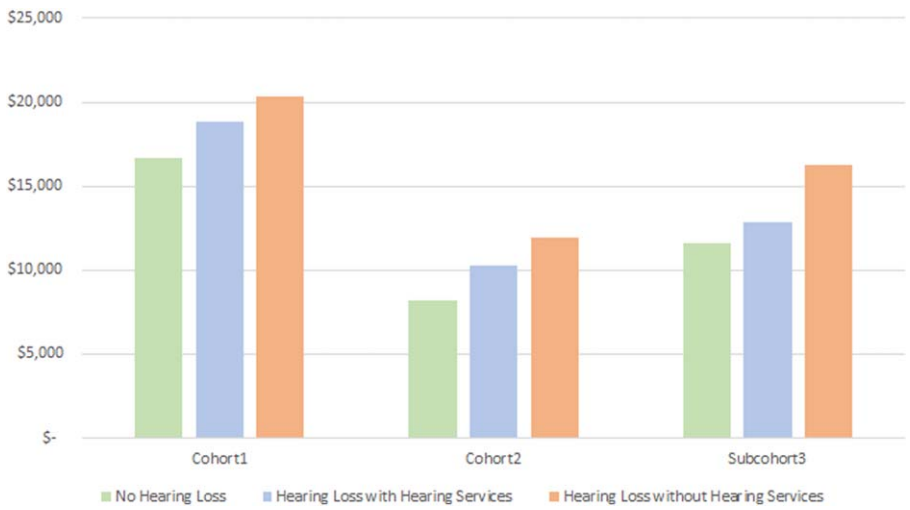

Figure 1. Adjusted 18 month total healthcare payments according to hearing loss.

Subcohort 3, all p<.001) than those who did not receive hearing services after adjusting for the cost of hearing services in each of the 3 cohorts. Payment differences were substantially higher for individuals with HL than for those with no diagnosis of HL for all three cohorts ($3,587 lower for Cohort 1, $3,779 lower for Cohort 2, $4,657 lower for Subcohort 3, all p<.001) after propensity score matching and covariate adjustment (Table 3, Figure 1). Higher hospital and outpatient costs may have led to these differences (Table 2).

DISCUSSION

The objective of this study was to compare average healthcare costs in U.S. older adults with and without HL. We used data from two sources: Medicare billing data for individuals aged 65 and older with supplementary private health insurance and a 5% random sample of Medicare data that the Centers for Medicare and Medicaid Services selected as a representative limited sample of all U.S. Medicare beneficiaries. The use of these data sources enabled us to examine healthcare costs for Medicare beneficiaries with substantially different levels of financial resources. The data sets have different benefits and limitations. The Medicare plus supplemental private insurance (Cohort 1) dataset contains all Medicare bills, including bills for prescription payments but does not include race. The Medicare 5% (Cohort 2) sample does not include prescription payments but includes race and allowed us to examine individuals with dual Medicare and Medicaid eligibility (Subcohort 3), a subgroup of individuals who meet Medicaid income eligibility criteria. Within the 3 datasets defined according to insurance type, we observed similar differences in mean cost for the 18-month observation period; individuals with untreated HL had the highest cost, followed by those with treated HL, and then those without HL. We also observed a consistent cost pattern across the 3 comparison groups in all 3 insurance cohorts. Cohort 1 had the highest mean cost, in part because this dataset included the cost of all prescription medications, and Cohort 2 had the lowest cost.

The primary findings of this study of 21.5% higher (Cohort 1) 18-month costs in older adults with Medicare and supplemental insurance with a diagnosis of HL than in those without a diagnosis of HL are similar to the findings of our recently published study in a sample of adults aged 55 to 64 in whom we found 33% greater costs in individuals with HL compared with a matched group without HL.[19] Although the cost difference in the older group reported here is less than observed in the younger sample, the same pattern of decreasing costs between those with HL (highest costs) and those with HL and hearing services (middle costs) compared to those with no indication of HL (lowest costs) remained consistent. A previous study reported $392 (95% confidence interval (CI) $277–513) in excess annual medical expenditures for individuals with HL in an analysis of Medical Expenditure Panel Survey data from 2000 to 2012.[28] Our annualized expenditure differences associated with HL were $2,391, but the previous analysis depended on the combination of 12 years of data and a much smaller sample that could not be matched at baseline, so it is possible that unmeasured differences in comorbid conditions and age is obscuring expenditure differences due to reported HL. In a systematic review of the economic effects of HL, another study found consistently higher costs and expenditures for individuals with HL, with a very high cost of forgone earnings and lifetime expenditures.[29] Most studies focus on total cost to society and lifetime effects of HL on earnings, although one study found mean expenditures of $1,012 for hearing services in the first year of reported HL, which is similar our finding of $1,296 of the added cost of hearing services.[30]

Although these new findings are an important early step in providing the evidence needed to raise awareness of HL from an annoyance or a normal consequence of aging to a public health concern, there are inherent limitations to the use of retrospective billing data. The use of administrative claims to ascertain diagnoses and identify resource use and costs with complete accuracy is difficult, because these data are collected not for clinical research but to determine healthcare payments.[31] In addition, there

are known variations in coding practices,[31] which are likely to change over time and differ between institutional settings. Perhaps most importantly in this study, these data lacked clinical information, including confirmatory diagnosis of HL and use of hearing services. Because limited reimbursement rules of insurers, including Medicare and private insurance, govern hearing testing and hearing services, there is likely to be significant undercoding of diagnoses and services billed,[31] so we might expect to find only a certain group of individuals with hearing services on their Medicare bills. These individuals may differ in systematic ways from others who receiving hearing health care but are paying out of pocket or the larger number of individuals with hearing deficits who do not seek care. Examination of marginal cost differences between 2 populations using the same data, using propensity methods, reduces the likelihood of a significant confounding effect on internal validity because many of these limitations related to administrative data will be equal in both groups, resulting in valid differences.

Propensity score methods in combination with well-specified, controlled outcomes modeling help to reduce selection bias and confounding due to imbalances in measured baseline covariates between the comparison groups, but these methods cannot control for bias that might occur because of unmeasured confounders, unless unmeasured confounders are correlated with those that were measured.[32] The degree to which unmeasured factors may influence the results of the study can be estimated using sensitivity analyses.[27,33]

The results of this study appear to be insensitive to unmeasured confounders when we examine the case of the primary difference in cost between individuals with and without HL in Cohort 1 ($3,587; the smallest difference between the three comparators). If an unmeasured confounder increased average cost by $4,396, which is equal to the largest predictor in the outcome model, having chronic renal failure, and if the prevalence of an unmeasured confounder, such as high level of treatment-seeking behavior, is 10% higher in the HL group than in those without HL, the estimated unbiased difference between these groups would be $3,147 (95% CI $3,118–3,306). Even if we were to change the prevalence assumption to an unlikely 60% difference between groups, the estimated unbiased difference in cost between individuals with and without HL would be $949 (95% CI $920–1,108). Thus, it seems unlikely that an unmeasured confounding variable could have an effect on the outcome large enough to invalidate the qualitative conclusion that 18-month healthcare costs are substantially higher in individuals with HL than in those without.

CONCLUSION

Older adults with a diagnosis of HL have substantially higher healthcare costs than a matched comparison group of individuals without a HL diagnosis regardless of type of insurance or indication of use of hearing healthcare services. The lack of audiometry confirmation of HL and our inability to differentiate between successful and unsuccessful HL interventions limit this study, although after propensity score matching and covariate adjustment, we observed more than 20% higher payments over an 18-month period for a group of insured individuals with HL. This finding indicates that negative health-related effects of HL may increase healthcare use unrelated to HL. There is currently no Medicare coverage for hearing aids or for most hearing healthcare services; private insurance coverage and Medicaid are limited, and Medicaid coverage varies widely according to state. Future studies are needed to determine whether greater coverage for hearing healthcare or use of hearing aids results in cost savings for Medicare and other insurers in potentially avoidable healthcare use and better quality of life.

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SUPPORTING INFORMATION

Additional supporting information may be found in the online version of this article at the publisher's web-site

Table S1. ICD-9 Diagnosis Codes for Defining Hearing Loss

Table S2. ICD-9 Procedure Codes for Defining Hearing Services

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Green Mountain Care: A Comprehensive Model for Building Vermont's Universal Health Care System

Report Appendices

Submitted by Governor Peter Shumlin to the Vermont State Legislature December 30, 2014

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Appendix A-1: 5-Year Comparison of Vermont Populations under ACA and GMC

	2017		2018		2019		2020		2021	
	ACA	GMC	ACA	GMC	ACA	GMC	ACA	GMC	ACA	GMC
Non-group Insurance	49,000	-	51,000	-	50,000	-	49,000	-	49,000	-
Medicaid Primary	141,000	-	142,000	-	141,000	-	141,000	-	140,000	-
Employer Sponsored Insurance	296,000	31,000	289,000	15,000	287,000	2,000	286,000	2,000	283,000	2,000
Private ESI	216,000	31,000	212,000	15,000	211,000	2,000	210,000	2,000	208,000	2,000
State ESI	26,000	-	26,000	-	26,000	-	25,000	-	25,000	-
Local ESI	14,000	-	14,000	-	13,000	-	13,000	-	13,000	-
Muni ESI	40,000	-	38,000	-	37,000	-	37,000	-	37,000	-
Federal Government Employee Insurance	10,000	-	10,000	-	10,000	-	10,000	-	10,000	-
Uninsured	17,000	-	18,000	-	18,000	-	18,000	-	18,000	-
Medicare	140,000	140,000	144,000	144,000	148,000	148,000	152,000	152,000	156,000	156,000
Individuals Supplementing Medicare	36,000	36,000	37,000	37,000	38,000	38,000	39,000	39,000	41,000	41,000
Medicaid/GMC Medicare Supplementation	37,000	37,000	37,000	37,000	38,000	38,000	39,000	39,000	40,000	40,000
Employer Medicare Supplementation	22,000	22,000	23,000	23,000	24,000	24,000	25,000	25,000	25,000	25,000
Military Insurance	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000
GMC Enrollment	-	519,000	-	533,000	-	544,000	-	542,000	-	538,000
Population of Commuters in on GMC	61,000	61,000	64,000	64,000	66,000	66,000	66,000	66,000	65,000	65,000

Appendix A-2: Coverage for Vermont Populations under GMC

Description	Primary Coverage	Secondary Coverage	Contribution to GMC	Considerations
Medicare:				
Seniors (over age 65)	Medicare	Vermont's Current Medicare wrap programs, such as VPharm, QMB, and SLMB would stay the same.	None	Medicare Supplemental Insurance would remain available.
Individuals with disabilities (over 24 months)	Medicare	Vermont's Current Medicare wrap programs, such as VPharm, QMB, and SLMB would stay the same.	None	Medicare Supplemental Insurance would remain available.
Military:				
Active duty military[1]	TRICARE	None while on TRICARE	None while on TRICARE	GMC coverage is suspended. GMC would be available as soon as the individual drops or is no longer eligible for coverage. Individuals who are eligible for enhanced benefits from Medicaid would maintain enhanced benefits through GMC.

[1] In order for TRICARE to be primary coverage, a state statutory change is needed. This is because, under federal law, TRICARE is always secondary, except to Medicaid.

Description	Primary Coverage	Secondary Coverage	Contribution to GMC	Considerations
National Guard	TRICARE, while on active duty	None while on TRICARE	None while on TRICARE	Vermonters with the Guard would have GMC coverage while not on active duty & can suspend that coverage during the time period they are on active duty.
Veterans	VA insurance, if applicable	None while using VA insurance	None while using VA insurance	Insurance provisions expire in August 2017 or sooner.[2] Veterans may use the VA Hospital for services as well, but are not required to under GMC.
Public employees:				
Federal employees taking federal insurance (FEHB)	Federal employee insurance	GMC	Full contribution	
State employees	GMC	Depends on bargaining agreement	Full contribution	
Public education employees	GMC	Depends on bargaining agreement	Full contribution	
Municipal employees	GMC	Depends on bargaining agreement	Full contribution	
Employees in the private sector:				
Employees not taking private employer sponsored insurance (ESI)	GMC	N/A	Full contribution	

[2] Veterans Access, Choice, and Accountability Act of 2014 § 101(p) states that the Veteran's Choice program will end after amounts in Veteran's Choice Fund are exhausted or after three years from enactment, whichever is first. The bill was enacted on August 7, 2014.

Description	Primary Coverage	Secondary Coverage	Contribution to GMC	Considerations
Employees taking private employer sponsored insurance (ESI)	ESI	GMC	Full contribution	
Non-residents working for a Vermont employer	GMC, ESI, or Exchange coverage from state of residence	N/A	Optional contribution	Non-residents working for a Vermont employer may purchase GMC coverage.
Retirees:				
Retiree not on Medicare with no other coverage	GMC	N/A	Full contribution	
Retiree not on Medicare with private employer coverage	Employer retiree coverage	N/A	No contribution	GMC creates a ten year window where non-Medicare retirees with employer coverage are exempt from GMC coverage and taxes.
Retiree on Medicare	Medicare or retiree plan	Medicare supplemental or retiree plan	No contribution	
Resident state or education employee retiree	GMC if not on Medicare, otherwise, Medicare	Depends on bargaining agreement, but retirees on Medicare will have state retiree plan	Full contribution to GMC if not on Medicare, otherwise no contribution	

Description	Primary Coverage	Secondary Coverage	Contribution to GMC	Considerations
Non-resident state or education employee retiree	State retiree plan if not on Medicare, otherwise, Medicare	If on Medicare, state retiree plan	No contribution to GMC	

Appendix A-3. Legislative Council Memorandum on Residency

MEMORANDUM

To: Senate Health & Welfare Committee

From: Robin Lunge, Bill Russell

Date: April 6, 2006

Subject: Durational Residency Requirements for Health Care Coverage

The U.S. Supreme Court has imposed strict constitutional limits on the imposition of residency requirements as a condition for receipt of state benefits. In short, a state may establish residency requirements to insure that benefits of state citizenship inure only to citizens of the state. However, *durational residency requirements* – those that require a period of residency in the state prior to receipt of benefits – are extremely problematical and probably prohibited.[1]

The Court's decisions are based on a constitutional "right to travel" protected by both the Equal Protection Clause of the 14th Amendment and the Privileges or Immunities Clause of that amendment.[2]

Equal Protection Cases

In the earlier cases decided in the 1970s, the Court's holding was based on the Equal Protection Clause. In those cases, the court found that the right to travel was such a fundamental right that it would apply a "strict scrutiny" analysis to balance the purported governmental justification underlying any state residency requirement with the burden of that right. Significantly, based on that analysis, the Court struck down an Arizona statute which required one year of residency within the county as a condition of eligibility for non-emergency medical care at public expense. The Court held that restricting medical care for indigents from other states severely burdened the right to travel under the Equal Protection Clause.[3]

However, in some of the Court's Equal Protection Clause decisions in the decade of the 1970s, a durational residency requirement was upheld because the right to travel was

[1] Durational requirements would include any restrictions in coverage of pre-existing conditions and requirements for "credible coverage" (defined in ERISA and HIPAA) which apply only to recent residents of Vermont.

[2] Although the word "travel" is found nowhere in the text of the Constitution, the Court found that the "right to travel from one state to another is firmly embedded in our jurisprudence." In fact, "the right is so important that it is a virtually unconditional personal right, guaranteed by the constitution to us all." *Saenz v. Roe,* 526 U.S. 489, 498 (1999)

[3] *Memorial Hospital v. Maricopa County*, 415 U.S. 250 (1974).

apparently not sufficiently burdened by those requirements. These decisions are not easily reconcilable. They include upholding durational residency requirements for the following:

In-state college tuition rates. "The state can establish such reasonable criteria for in-state status as to make virtually certain that students who are not in fact bona fide residents of the state, but have come there solely for educational purposes, cannot take advantage of the in-state rates."[4]

Divorce. The Court upheld a one-year residency requirement for the ability to obtain a divorce in state courts.[5]

Voting in political party primaries. The Court upheld political party registration restrictions that amounted to a durational residency requirement for voting in primary elections.[6]

Privileges or Immunities Cases

However, whatever possibility that may have existed for sustaining some durational residency requirements under the 14th Amendment's Equal Protection Clause (above) seems to have been foreclosed by the Court's more recent rulings under the Privileges or Immunities Clause.

The controlling decision is *Saenz v. Roe*, 526 US 489 (1999), in which the U.S. Supreme Court struck down a California statute imposing durational residency requirements by limiting welfare benefits in a recipient's first year of residency to the amount of benefits that the recipient would have received from the state of former residence. In this decision, the Court asserted and expanded upon the "right to travel." It includes "for those travelers who elect to become permanent residents, the right to be treated like other citizens of that state."[7] It is therefore constitutionally impermissible for a state to establish two classes of benefits for new and older residents. Newly arrived citizens have the same right to enjoy the "privileges or immunities" as other citizens of the same state. This "citizenship clause" does not allow for degrees of citizenship based on length of residence.[8]

In short, "it appears that the Court's invocation of the Privileges or Immunities Clause prohibits durational residency requirements in every context."[9] In dissent, Chief Justice Rehnquist eschewed this rationale based on creating a "conflated" right to travel. The

[4] *Vlandis v. Kline*, 412 U.S. 441(1973).
[5] *Sosna v. Iowa*, 419 U.S. 393 (1975).
[6] *Rosario v. Rockefeller*, 410 U.S. 752 (1973).
[7] *Saenz v. Roe*, 526 US 489, 500 (1999)
[8] Id. at 504.
[9] Id. at 514-516, (Rehnquist, C.J, dissenting) (stating that virtually all classifications of citizenship based on the length of state residency will violate the Privileges and Immunities Clause of the 14th Amendment).

right, he asserted, is properly defined as the right of a person to become a citizen of another state. There is no infringement on travel.

Chief Justice Rehnquist also stresses the irreconcilability of the Court's durational residency decisions. "If states can require individuals to reside in-state for a year before exercising the right to educational benefits, the right to terminate a marriage, or the right to vote in primary elections, then states may surely do the same for welfare benefits . . . he durational residency requirement challenged here is a permissible exercise of the state's power to assure that services provided for its residents are enjoyed only by residents."[10]

A "Wait and See" Approach

In California, Senate Bill 840 would provide comprehensive universal health care to all Californians, including undocumented residents, using a single-payer publicly financed mechanism. Included in the bill is the provision which, after two years of plan implementation, would give the commissioner the discretion to impose a waiting period on eligibility if the commissioner determines that "large numbers of people are emigrating to the state for the purpose of obtaining health care through the California Health Insurance System." (SB 840 §140200(c)(10)(G)). Additionally, the bill specifies that any implementation of a waiting period must be done on a statewide basis. (SB 840 §140204(d)).

Conclusion

Durational residency requirements in state legislation (those that distinguish among residents of a state based on length of residency) are difficult to support for at least two reasons.

First, if federal funds (such as Medicaid) are involved, federal requirements usually prohibit different classes of eligibility based on length of residence in the state.

Second, the U.S. Supreme Court has held that a citizen's "right to travel", protected by the 14th Amendment, is infringed by denying newly arrived residents the same benefits a state provides to longer term residents. Like any constitutional right, this right to travel is not absolute. Some infringement may be permissible, but only by a showing of an extremely compelling state interest.[11]

Applying these considerations to the health care legislation proposed last year:

We recommended no durational residency requirement for pharmaceutical programs in H.516. These programs intermingle federal funds. Also, while VT has provided

[10] Id. at 520 – but this of course is in dissent.

[11] In the most recent controlling decision, *Saenez v. Roe*, 526 US 489 (1996), California was unable to show that the fiscal savings to the state gained through a differential in welfare benefits paid to short term residents was not enough of a compelling state interest to justify infringing the right to travel.

generally better pharmaceutical benefits than most other states, there is little evidence that this has caused a migration into the state causing a significant enough fiscal impact to the state to justify infringing the right to travel. These programs would use Medicaid funds for their support.

We recommended a reasonable durational residency requirement for the House-passed universal access health care program in H.524. This program would be state funded; Medicaid would be separate. And, what is at stake is more than a minor impact on the state's finances; arguably there is a compelling state interest. The health care system, every citizen's medical care, the state's entire budget, and the state's economy as a whole may be impacted sufficiently to justify some infringement on the constitutional right to travel.

Appendix B-1: Detailed Information on Benefit Design

What are the benefits?

Benefits consist of three main components:

- Covered services
  - What services are paid for in whole or in part?
- Cost-sharing
  - How much does an individual pay out of pocket when they get services?
  - Do individuals pay out of pocket through co-pays, deductibles, or co-insurance?
- Network of health care providers
  - Are there restrictions on the specific providers an individual can use?

In creating benefit plan designs, we worked with consultants, including actuaries at Wakely Consulting Group, and reviewed the following information:

- health economic studies on impacts of cost-sharing,
- the current plans offered through Vermont Health Connect,
- the state employee plans,
- the plans offered to education employees through VEHI,
- anecdotal information from members of the public who were dissatisfied with the VHC plan choices, and
- public input provided in the benefits listening sessions conducted in 2012.[1]

In addition, we consulted with the Governor's Consumer Advisory Group on an on-going basis as plan designs were being developed. We also provided periodic updates to and sought input from the Governor's Business Advisory Group.

We used the following principles to focus our efforts throughout the benefit design process:

- Federal and state requirements for benefits
- Equity
- Administrative cost & complexity
- Options fit together, easy to explain
- Individual out of pocket cost (average & max)
- Medical cost & utilization
- Change from current/expected
- Federal & state tax implications

After applying the above principles to the research and various benefit designs, we concluded that GMC should provide Vermonters with coverage of the essential health

[1] A summary of the public input is available here: http://hcr.vermont.gov/public_engagement/benefits

benefits under the ACA at a 94 percent actuarial value (AV), a cost-sharing level similar to the Vermont state employee plan. The following discussion will break down each component of benefit design and explain how we made our determination of offering coverage of the essential health benefits at a 94 percent AV.

Overview of Legal Requirements for All Benefit Components

Federal law through the Affordable Care Act (ACA) and state law through Act 48 place certain legal parameters on the GMC benefit design. Under the ACA, the GMC benefit design's coverage must be as comprehensive and affordable or more comprehensive and affordable as the plans currently offered through Vermont Health Connect.[2]

Under Act 48, the GMC benefit design's coverage must be as comprehensive as Vermont's Catamount Health plan and at least as affordable as an 80 percent AV, which is the same as a gold plan on Vermont Health Connect.[3] Act 48 also requires that individuals with low incomes and children with family income under three times poverty will receive the covered services currently provided by Dr. Dynasaur[4] and Medicaid as of January 1, 2014.[5] This ensures that low and middle-income Vermonters will not be worse off under GMC than they are today. This means that GMC as one health care program would actually encompass two different plans: a plan for Vermonters who are eligible for Medicaid funding with the enhanced benefits that are offered today and the GMC plan for those that are not eligible for Medicaid funding. Because the Medicaid benefit was already determined as the same benefit offered as of January 1, 2014 through Act 48, we focused on the GMC benefit plan that would be offered to Vermonters who are not eligible for Medicaid funding.

Covered Services: Background

In order to get a waiver from the federal government under the ACA, GMC must cover all of the essential health benefits required by the ACA. The ACA requires the following 10 benefits to be covered:

- Ambulatory patient services (outpatient care without being admitted to a hospital)
- Emergency services
- Hospitalization (such as surgery)
- Pregnancy, maternity, and newborn care (care before and after a baby is born)
- Mental health and substance use disorder services, including behavioral health treatment (this includes counseling and psychotherapy)
- Prescription drugs

[2] ACA § 1332.
[3] 33 V.S.A. § 1822 & 1825.
[4] Includes early periodic screening, diagnosis and treatment (EPSDT).
[5] 33 VSA 1825(b)

- Rehabilitative and habilitative services and devices (services and devices to help people with injuries, disabilities, or chronic conditions gain or recover mental and physical skills)
- Laboratory services
- Preventive and wellness services and chronic disease management
- Pediatric dental and vision services

Currently, individuals and small businesses purchasing a Vermont Health Connect plan have an essential health benefit package, which was based on a benchmark plan. The benchmark plan was chosen from the most commonly purchased plans in 2012, so it includes Vermont's legally required insurance benefits. In Vermont, the Green Mountain Care Board (GMCB) chose a benchmark plan offered by Blue Cross Blue Shield of Vermont. This plan was then supplemented to ensure that the plan met the 10 required benefits described above. [6]

Table B-1.1., below, shows the differences between the covered services provided by plans in Vermont Health Connect to the individual and small group market versus covered services in plans for state employees and education employees. The fact that the figure shows only a few services with variations in coverage illustrates how similar covered services are across plans today.

Table B-1.1

	Essential Health Benefit	State Employee and Retirees		VEHI Education Employees and Retirees	
		SelectCare	Total Choice	300 Ded	VHP
Chiropractic	Limit 12 visits then prior approval required	Limit 60 visits per year (total visits for PT, OT, ST, Chiro)	Limit 60 visits per year (total visits for PT, OT, ST, Chiro)	Prior approval required after 12th visit	Prior approval required after 12th visit
Infertility	Not covered	Up to $50,000 lifetime max	Up to $50,000 lifetime max	Not covered	Not covered
Fertility Drugs	Covered	Covered	Covered	Covered	Covered
Bariatric Surgery	Covered	Covered, medical necessity	Covered, medical necessity	With prior approval	With prior approval

[6] The details of this plan are provided in Appendix B-3.

	Essential Health Benefit	State Employee and Retirees		VEHI Education Employees and Retirees	
Routine Eye Exams	1/year for children	$100/2 years	$100/2 years	Not covered	1/year

Expansion of Covered Services

As required by Act 48, we determined cost estimates for additional covered services, specifically, adult dental, adult vision, hearing, and long-term care.

Adult Dental

Three scenarios were considered for adult dental coverage. In the first option, GMC only covers dental tiers I and II (preventive and restorative services) at 100% and 80% coverage respectively. In the second option, GMC covers dental tiers I, II, and III (preventive, restorative and major services) at 100%, 80% and 50% coverage respectively. Scenarios 1 and 2 reflect typical private dental insurance. The last scenario is the Vermont state employee plan.[7] Medicaid covers dental up to a $510 benefit maximum with $3.00 co-pay per visit. Only the *additional* costs of expanding the benefit are included here. Any GMC wrap of Medicaid assumes the co-insurance would not apply to Medicaid-eligible individuals but that the annual maximum, where applicable, would apply. For example, under the Vermont state employee plan scenario, Medicaid's $510 benefit maximum would be increased to $1,000 benefit maximum, providing increased coverage. Due to the unique nature of this coverage, our actuaries used a conservative estimate of administrative expenses at 7 percent.

The following tables show the total annual cost by scenario. Each table shows the additional PMPM and cost of dental coverage for all adults in GMC, except for non-resident Vermont employees, federal employees, and employees who have employer-sponsored coverage.[8]

[7] Additional benefits details for the Vermont state employee plan can be found at: http://humanresources.vermont.gov/salary/benefits/dental

[8] These cost analyses were developed prior to the Governor's final decisions and announcement not to pursue financing for GMC. These scenarios have not been updated to reflect the preferred population assumptions in the financing plan due to the cost of actuarial services. Including the additional populations would further increase the costs of providing these services.

Table B-1.2: Additional Cost of Alternative Adult Dental Scenarios ($ Millions)[9]

Dental Benefit Applies to Adults Only[10]		Scenario 1	Scenario 2	Vermont state employee plan
Coverage Levels				
	Tier I - Preventive	100%	100%	100%
	Tier II - Basic Restorative	80%	80%	80%
	Tier III - Major Restorative	Not Covered	50%	50%
	Deductible	Not Applicable	Not Applicable	$25 Deductible All Tiers
	Annual Benefit Maximums	Not Applicable	Not Applicable	$1,000 Annual Max
Estimated Cost Impact (includes Administrative Costs)				
Commercial				
	"Premium" PMPM	$34.85	$41.40	$29.86
	Estimated GMC Adults	259,150	259,150	259,150
	Total Cost	$108,400,000	$128,700,000	$92,900,000
Medicaid				
	"Premium" PMPM	$8.81	$11.80	$7.77
	Estimated GMC Adults	81,822	81,822	81,822
	Total Cost	$8,600,000	$11,600,000	$7,600,000
Total 2017 Cost		**$117,000,000**	**$140,300,000**	**$100,500,000**

We also researched whether the health benefits from coverage of adult dental would mitigate increased costs, but the results were inconclusive. Studies have found periodontal disease bacteria associated with the following conditions:

- brain abscesses (Silva, 2004)

[9] This Table excludes non-resident Vermont employees, federal employees, and employees who have employer-sponsored coverage. See footnote above.

[10] These numbers are based on high level estimates of the utilization and unit cost of covered services. National and Vermont specific data was used where possible. There are limitations to the data including some unknown corresponding benefits, implicit selection in the data, and missing data due to annual maximums (claims often not submitted once benefit maximums are met). If we chose to include coverage, we would further refine these estimates. For example, a PMPM variance of plus or minus 15% would not be unreasonable given the quality of the data provided to our actuaries.

- pulmonary disease (Suzuki and Delisle, 1984)
- cardiovascular disease (Haraszthy et al., 2000)
- adverse pregnancy outcomes (Offenbacher et al., 2006; Scannapieco et al., 2003b; Tarannum and Faizuddin, 2007; Vergnes and Sixou, 2007)
- respiratory disease (Scannapieco and Ho, 2001)
- cardiovascular disease (Blaizot et al., 2009; Janket et al., 2003; Paraskevas, 2008; Scannapieco et al., 2003a; Slavkin and Baum, 2000)
- coronary heart disease (Bahekar et al., 2007)
- diabetes (Chávarry et al., 2009; Löe, 1993; Taylor, 2001; Teeuw et al., 2010)

Despite these findings, it has been noted that "…the relationship between periodontal disease and these systemic diseases is not well understood, and there is conflicting evidence about whether periodontal treatment affects outcomes for these systemic conditions."[11]

A recent study has found positive outcomes associated with dental care for individuals who have cerebral vascular disease (stroke), coronary artery disease (heart disease), Type II Diabetes, or who are pregnant; however, the study "did not prove that the dental treatment has a beneficial effect beyond the mouth."[12] Due to these findings and its added costs, we decided to focus our efforts on reducing out of pocket costs for major medical for the first phase of GMC and to revisit the issue of covering adult dental at a later phase.

Adult vision

Adding coverage for adult vision is also an option for GMC. This benefit would cover exams and hardware once a year, which is consistent with the federal employee benefits. Due to the unique nature of this coverage, our actuaries used a conservative estimate of administrative expenses at 7 percent.

The following tables show the total annual cost by scenario. Each table shows the additional PMPM and cost of vision coverage for all adults in GMC, except for non-resident Vermont employees, federal employees, and employees who have employer-sponsored coverage.[13]

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[11] "2 Oral Health and Overall Health and Well-Being." Advancing Oral Health in America. Institute of Medicine Washington, DC: The National Academies Press, 2011, pg. 33, citing (Beck et al., 2008; Fogacci et al., 2011; Jeffcoat et al., 2003; Lopez et al., 2002, 2005; Macones et al., 2010; Michalowicz et al., 2006; Newnham et al., 2009; Offenbacher et al., 2006, 2009; Paraskevas et al., 2008; Polyzos et al., 2009, 2010; Sadatmansouri et al., 2006; Simpson et al., 2010; Tarannum and Faizuddin, 2007; Teeuw et al., 2010; Uppal et al., 2010).

[12] "Impact of Periodontal Therapy on General Health," Jeffcoat, Marjorie K. et al., American Journal of Preventive Medicine , Volume 47 , Issue 2 , 166 – 174, 2014.

[13] These cost analyses were developed prior to the Governor's final decisions and announcement not to pursue financing for GMC. These scenarios have not been updated to reflect the preferred population

Table B-1.3: Additional Cost of Adult Vision ($ Millions)[14]

Vision Benefit Applies to Adults Only	FEDVIP - BlueVision High Plan
Diagnostic	
Eye Exam	limit 1 / yr
Eyewear	
Lenses	limit 1 pair / yr
Frames	limit 1 pair / yr $150 allowance
Contact Lenses	limit 1 / yr $150 allowance in lieu of eyeglasses ($600 for medically necessary)
Estimated Cost Impact (includes Administrative Costs)	
Commercial	
"Premium" PMPM	$7.80
Estimated GMC Adults	259,150
Total Cost	$24,300,000
Medicaid (hardware only)	
"Premium" PMPM	$4.73
Estimated GMC Adults	81,822
Total Cost	$4,600,000
Total 2017 Cost	**$28,900,000**

Similar to dental, we decided to focus our efforts on reducing out of pocket costs for major medical for the first phase of GMC and, therefore, would not recommend adult vision coverage at this time. As noted above, a large portion of the pediatric population would have vision coverage under the recommended coverage.

<u>Hearing benefits</u>

assumptions in the financing plan due to the cost of actuarial services. Including the additional populations would further increase the costs of providing these services.

[14] This Table excludes non-resident Vermont employees, federal employees, and employees who have employer-sponsored coverage. See footnote above.

We also looked into covering hearing benefits. This benefit was modeled off of other public and commercial hearing coverage. It includes a $20 co-pay for hearing exams and covers one hearing aid every three years with no out of pocket costs. Since Medicaid already covers hearing exams and hearing aids, there is no additional Medicaid cost under GMC. Administrative expenses of 7 percent were assumed. Since this benefit would be administered with the medical benefit, this is likely a reasonable assumption. The following tables show the total annual cost by scenario. Each table shows the additional PMPM and cost of hearing coverage for all individuals in GMC, except for non-resident Vermont employees, federal employees, and employees who have employer-sponsored coverage.[15]

Table B-1.4 :Additional Cost of Hearing Coverage ($ Millions)[16]

Hearing Benefit Applies to Adults and Children	
Diagnostic	
Hearing Exam	limit 1 per year; $20 co-pay
DME	
Hearing Aids (includes fittings)	limit 1 per ear every 3 years; no cost to member
Estimated Cost Impact (includes Administrative Costs)	
Commercial	
"Premium" PMPM	$0.52
Estimated GMC Enrollees	307,414
Total Cost	$1,900,000
Medicaid	
"Premium" PMPM	$0.00
Estimated GMC Enrollees	-
Total Cost	$0
Total 2017 Cost	**$1,900,000**

[15] These cost analyses were developed prior to the Governor's final decisions and announcement not to pursue financing for GMC. These scenarios have not been updated to reflect the preferred population assumptions in the financing plan due to the cost of actuarial services. Including the additional populations would further increase the costs of providing these services.

[16] This Table excludes non-resident Vermont employees, federal employees, and employees who have employer-sponsored coverage. See footnote above.

As with dental and vision, we decided to focus our efforts on reducing out of pocket costs for major medical for the first phase of GMC and would not recommend hearing coverage at this time.

Long Term Care

Currently, Long Term Care (LTC), or nursing home level of care is provided to the Vermont Medicaid population and Medicare covers limited facility and home care services following a hospital stay. A cost estimate was developed assuming full LTC coverage would be extended to the entire Vermont population in 2017.

The cost estimate was based on the 2012 Vermont Health Care Expenditure data. The 2012 non-Medicaid and non-Medicare costs associated with home health and nursing home care were used as a starting point for the projection. It was assumed that the Medicare and Medicaid programs would continue to cover the LTC services in 2017 as they currently do. There is also an additional small amount of home health and nursing home costs that are covered by other Federal coverage in 2012. We assumed these services would also continue to be covered under their respective programs, and the costs were excluded from the projection. We also assumed that any Vermont resident that currently purchases private LTC coverage would drop this coverage and those costs would be transferred to the state.

Costs were trended from 2012 to 2017 using actual LTC trend from the VT expenditure analysis for the 2009 to 2012 time period.

Based on several LTC studies, a significant amount of LTC is either provided by unpaid caregivers or the need goes unmet. Cost estimates for the unpaid cost range between two and three times the current amounts paid for LTC. We applied an induced utilization factor to account for these costs. The studies we reviewed included the following:

- A November 2010 study produced by UMass Medical School's Center for Health Law and Economics and Office of Long-Term Support Studies on behalf of the Massachusetts Long-Term Care Financing Advisory Committee. This study indicated that $8.6 billion was paid for LTC costs in Massachusetts and that an additional $9.6 billion in cost was either unpaid or came from needs that went unmet. Applying this additional cost to the relative non-Medicaid and non-Medicare costs results in an induced utilization factor of about 5.0.[17]
- An AARP study titled "Valuing the Invaluable: 2011 Update" estimated that in 2009, $203 billion was paid for LTC costs nationally and an additional $405 billion was provided by unpaid care givers. Applying this additional cost to the relative non-Medicaid and non-Medicare costs results in an induced utilization factor of about 8.0.[18]

[17] http://www.mass.gov/eohhs/docs/eohhs/ltc/ma-ltcf-full.pdf
[18] http://assets.aarp.org/rgcenter/ppi/ltc/i51-caregiving.pdf

- An additional AARP study from September 2011 indicated that in 2004, 72% of older people living in the community received assistance exclusively from unpaid caregivers. This study further supports the above indication that the cost of unpaid care-giving is about two to three times the amount of total paid caregiving.[19]

Using the cost expenditure data, the trend assumption discussed above, and an induced utilization factor of 6.5, we developed a mid-level estimate of total 2017 Vermont LTC cost of $879 million. Given the uncertainty involved with estimating the cost of unpaid care, we also considered a lower induced utilization factor of 5.0 and a higher factor of 8.0. This range of induced utilization factors was based on the LTC studies referenced above. These factors produce low and high cost estimates of $660 million and $1,108 million. In addition, implementing a waiting period of 30 to 90 days could reduce the total cost estimate by 10% to 20%. The cost development is shown in the table below.

Table B-1.5: Long Term Services and Supports Cost Projection for Vermont under GMC 2017[20]

	Low	Mid	High
2012 Expenditure Analysis (Millions)	$109	$109	$109
PMPM Cost Trend	0.5%	1.0%	1.5%
Growth in Population that will use LTC	3.5%	3.5%	3.5%
Total Annual Trend	4.0%	4.5%	5.0%
Total Trend to 2017	1.217	1.246	1.276
2017 Trended Cost (Millions)	$132	$135	$139
Induced Utilization	5	6.5	8
Projected 2017 Cost (Millions)	**$660**	**$879**	**$1,108**

Again, we decided to focus our efforts on reducing out of pocket costs for major medical for the first phase of GMC and would not recommend that long term care coverage be included in Green Mountain Care.

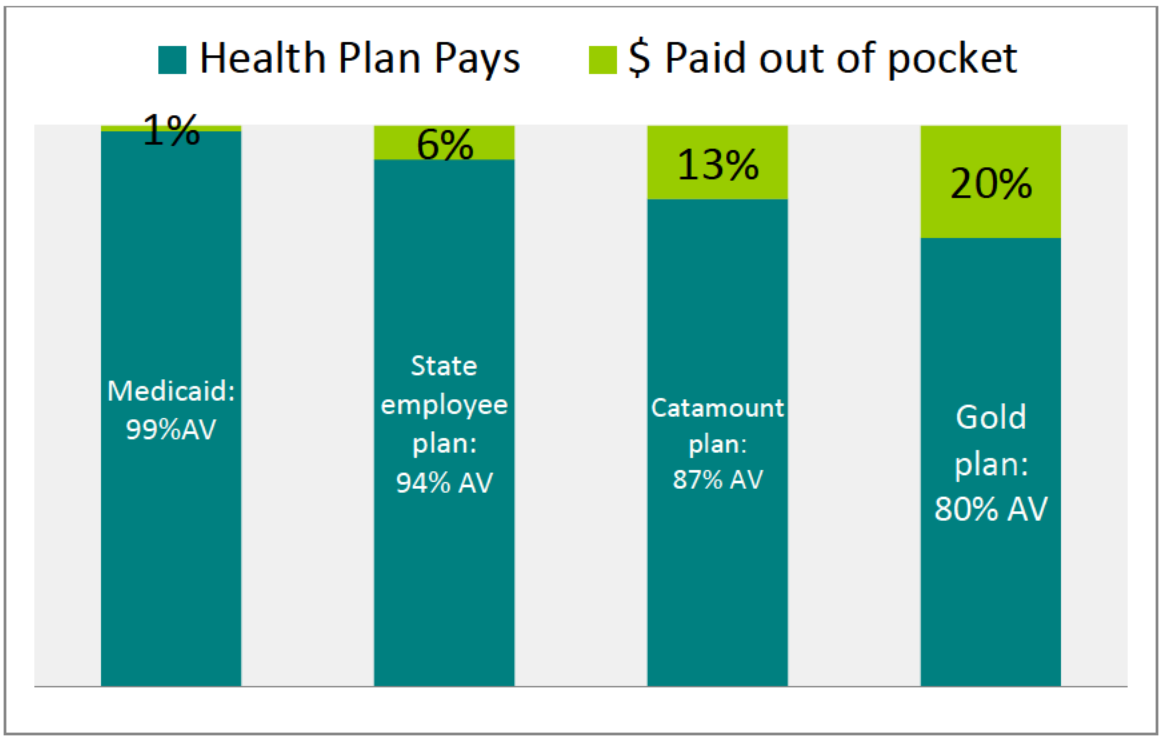
Cost-Sharing: Background

[19] http://www.longtermscorecard.org/~/media/Microsite/Files/Reinhard_raising_expectations_LTSS_scorecard_REPORT_WEB_v5.pdf

[20] This Table excludes non-resident Vermont employees, federal employees, and employees who have employer-sponsored coverage.

Cost-sharing is typically measured through actuarial value (AV). Actuarial value is the average amount as a percentage of total health care costs that a health plan would pay. The higher the AV, the less an individual would pay out of pocket in co-pays, deductibles, and co-insurance and the more paid for through public financing. For example, if GMC has an 80% AV, then on average 80% of the total cost is paid through public financing and the remaining 20% is paid through cost-sharing at the point of receiving a health service. Actual out of pocket costs for any individual or family will vary depending on their health care needs and utilization in any given year. The chart below shows examples of well-known plans and illustrates the difference between what the plan pays for and what the individual pays for health care services.

Figure B-1A. Examples of percentage of out of pocket spending with specific Vermont plan designs.



Under Act 48 of 2011, the legislature required that Green Mountain Care have at least an 80 percent actuarial value (AV) level, but also stated a preference for an 87 percent AV.[21] Act 48 also requires that we provide information to the Green Mountain Care Board about the cost of having no cost-sharing[22] and some plan designs which waive cost-sharing for certain types of services where there is evidence that greater utilization of these services would be beneficial to the health of the population. We also reviewed

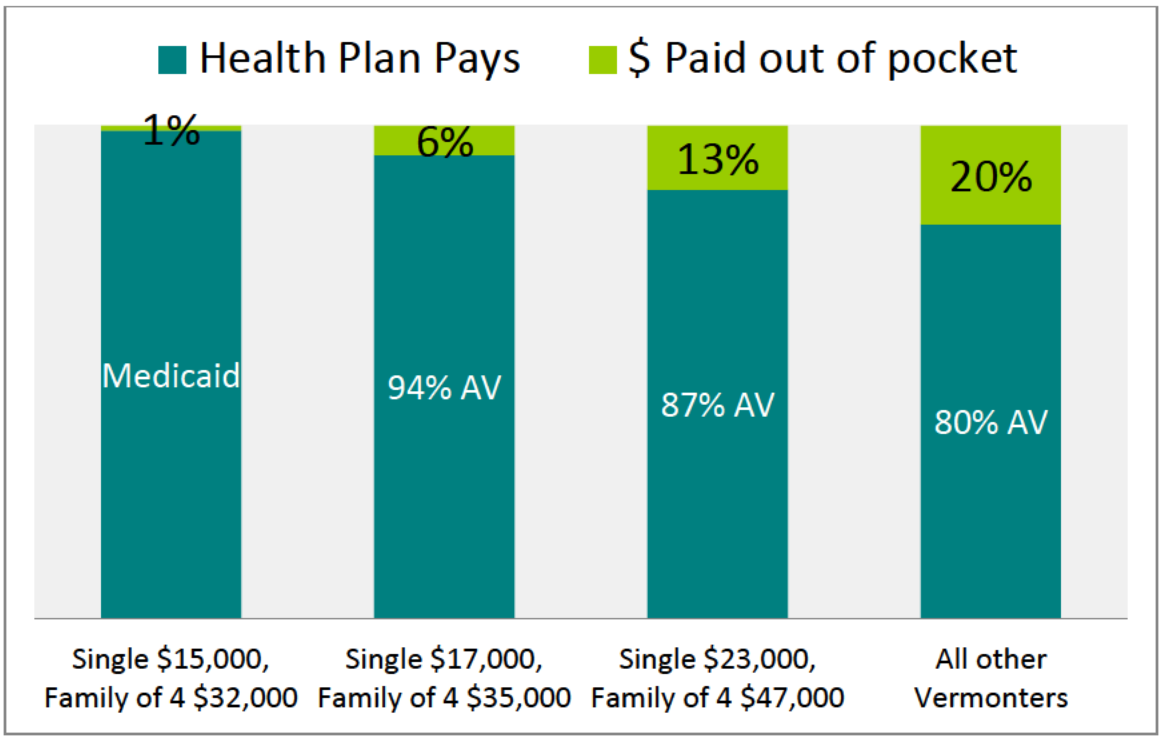
[21] 33 VSA 1822 and 1825.

[22] Relative cost of 100% AV plan is $201 million more than a 94% AV plan.

several health economic studies to determine what is currently known about the impacts of cost-sharing on the use of health services and international comparisons.[23]

Under federal law, GMC must also maintain more generous coverage of out of pocket costs for individuals who would currently receive cost-sharing reduction subsidies on a sliding scale or individuals who are on Medicaid.[24] The ACA's sliding scale of out of pocket costs is: Medicaid for individuals under 138% FPL; a 94 percent AV plan for individuals from 138% to 150% FPL; and an 87 percent AV plan for individuals from 150% to 200% FPL. The sliding scale affordability for out of pocket costs is illustrated in the figure below using 2014 income levels.

Figure B-1B. Examples of percentage of out of pocket spending using the ACA affordability sliding scale for out of pocket spending.[25]

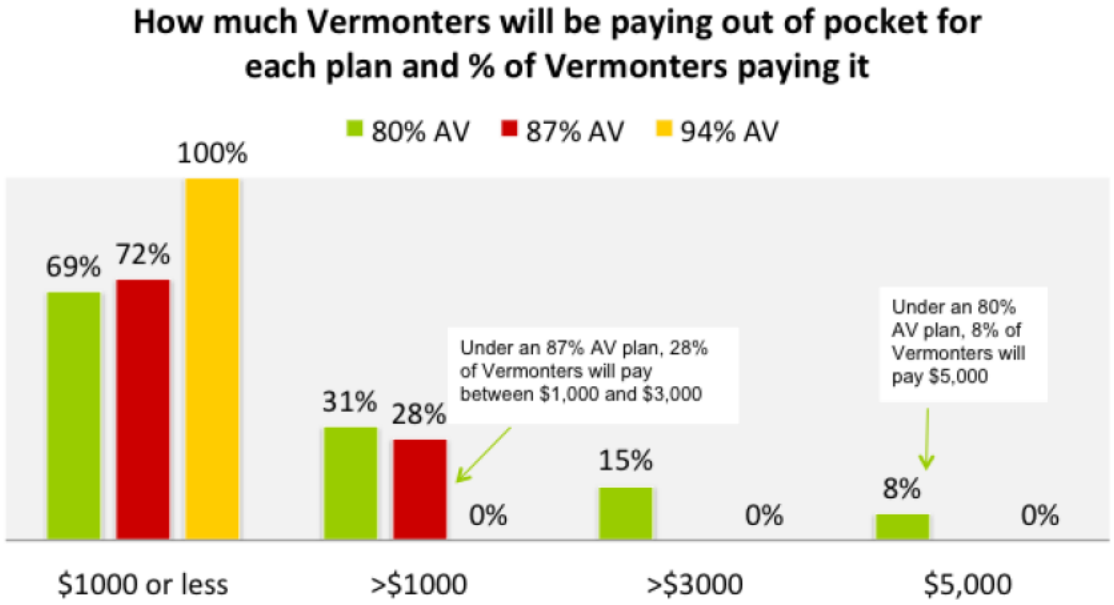


Another important consideration in plan design is how to distribute cost-sharing within the actuarial value level. For example, after the Affordable Care Act, most plans include a limitation on out of pocket costs (called the maximum out of pocket or MOOP). This represents the absolute total amount that any individual or family would pay in cost-sharing. The amount, however, must be viewed in relationship to health status, because young or healthy individuals use fewer health services and thus will never reach the type of spending capped by the MOOP due to their usage. The figure below illustrates

[23] See Appendices B-6 & B-7.
[24] ACA § 1332.
25 Figure uses 2014 FPL income levels.

what Vermonters would pay in out of pocket costs for a deductible plan at different AV levels.

Figure B-1C. Distribution of Out Of Pocket Costs in Vermont Population



Taking into consideration the maximum out of pocket and the Act 48 and ACA legal parameters, we looked at a variety of plans ranging in AV from 80% AV up to Medicaid and employing different structures, such as co-pay only plans, deductible plans, and high deductible health plans. We started with almost thirty plans[26] and narrowed those plans down to the following seven plans within a range of AV levels and payment mechanisms, illustrated in the matrix, below:

Table B-1.6. Plan design matrix using ACA affordability sliding scale and Act 48 parameters

	80% AV	87% AV	94% AV	Medicaid AV
Option 1: Co-pay plan	Out of pocket costs look too expensive	✓	State employee plan No deductible No MOOP	
Option 2: Deductible Plan	✓	Catamount equivalent	✓	
Option 3: HDHP	✓ ✓	Does not meet HDHP requirements	Does not meet HDHP requirements	

[26] See appendix B-4

From here, we narrowed the plan designs down even further to four plan designs: a deductible and co-pay plan at 94 percent AV level, a deductible plan at the 87 percent AV level; and an innovative HDHP plan at the 80 percent AV level.[27] The co-pay plan at the 94 percent AV level is the SelectCare state employee plan modified to comply with federal requirements, the deductible plan at the 87 percent AV level is a modified design of Catamount Health, and the HDHP plan is an innovative plan design based on the economic research available.

It is important to note that in all 4 plan design options, preventive services are provided without any cost-sharing and mental health primary care services are provided with the same co-payments as for primary care health services.

The 94% AV co-pay/state employee plan is designed to only have co-payments. We have added a maximum out of pocket, which the state employee plan does not have, in order to comply with federal requirements and to ensure that Vermonters who use a lot of health services have financial protections.

The 94% AV deductible plan has a low deductible and maximum out of pocket. This plan was designed as a comparison point to the 94% AV co-pay/state employee plan to help determine which plan would provide the most comprehensive coverage to the Vermonters who need it most.

With the 87% AV plan we used a deductible plan similar to what was used under Catamount Health. The deductible plan looks like a typical insurance plan and reflects the kind of coverage with which many Vermonters are already familiar.

Under the 80% AV plan, the design is compliant with current Internal Revenue Service regulations for high-deductible health plans and may be paired with a health savings account (HSA). Health savings accounts are a tax-preferred vehicle that allows an individual to save money toward health care expenses without paying federal and state tax on that amount. This plan design has three main elements to it. The first is a high deductible health plan (HDHP). The second is an HSA for individuals who are not eligible for subsidies or a notional account for individuals who are eligible for cost-sharing subsidies, which can be applied against the annual deductible and copayments. The notional account could be funded by the state to achieve the reduced cost-sharing required by the ACA. The third element is a maximum out of pocket limit (MOOP), which serves to limit subscribers' financial exposure by capping total household cost-sharing per year. The following picture illustrates how cost-sharing is spread across these elements.

[27] See Appendix B-2.

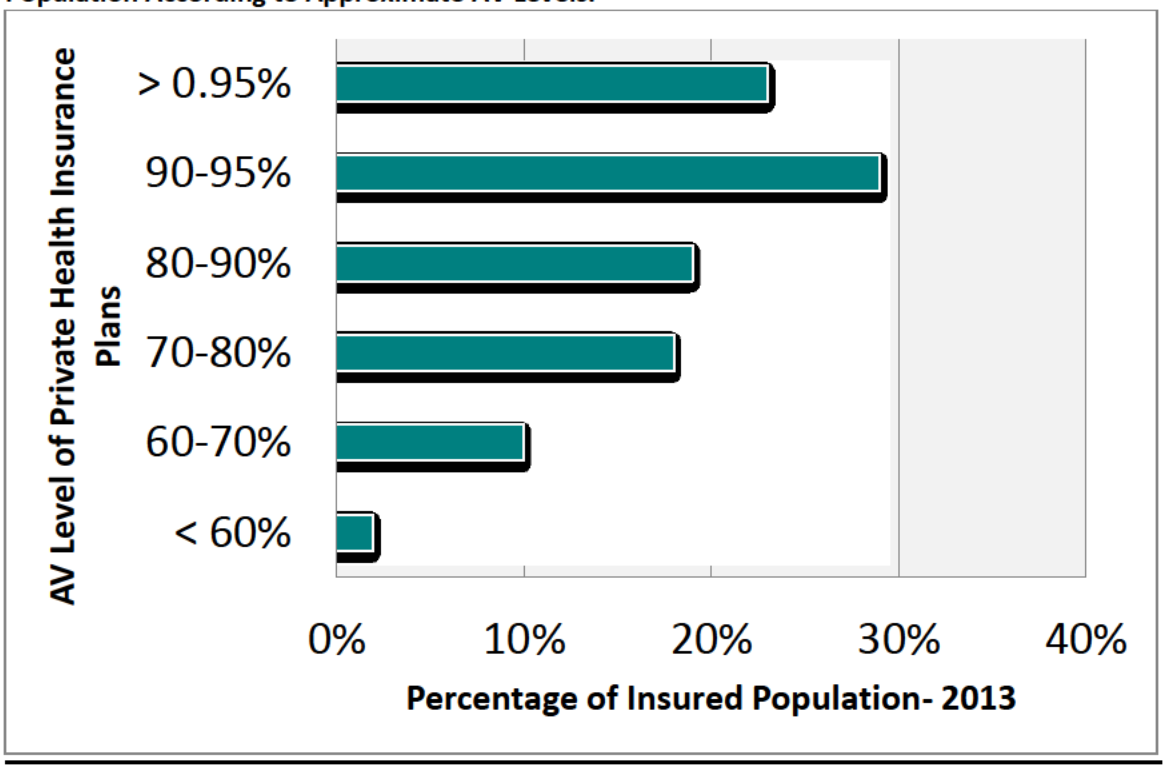
Cost-Sharing: Recommendation

Once the plans were narrowed down, we examined the ACA and Act 48 legal parameters in conjunction with operational and administrative simplicity, looked at the current market to determine where most Vermonters are today, and weighed issues of equity. As a result, we determined that the best level of coverage for Vermonters would be at the 94 percent AV level.

The fact that the ACA requires a sliding scale of affordability for out of pocket costs means that Vermont would either have to: have different plan designs to meet all the applicable AV levels; have one plan design and supplement that plan design through accounts or some other mechanism to meet the applicable AV levels; or bring all Vermonters not eligible for Medicaid up to the highest AV level, ensuring one plan design and administrative simplification. When faced with these options, we chose the 94 percent AV level to ensure operational and administrative simplicity while meeting all legal requirements.

We also chose the 94 percent AV level because when we looked at covered Vermonters who were not in Medicaid or Medicare, over 50% of Vermonters had a plan above 90 percent AV.

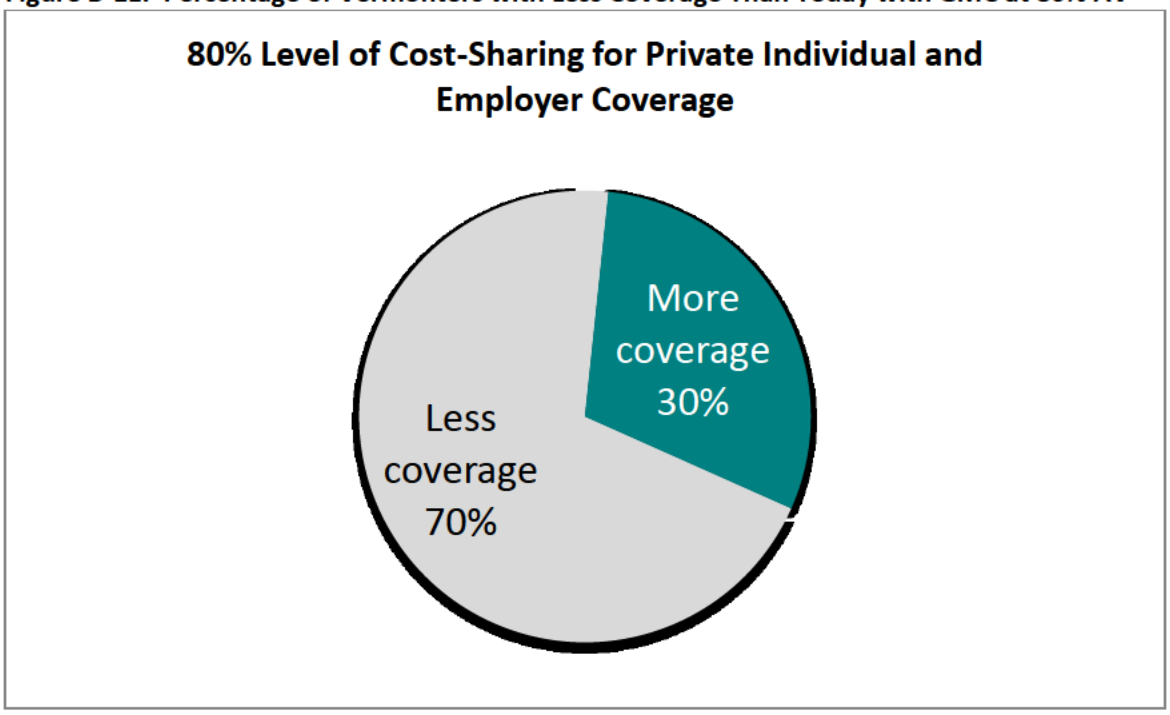
Figure B-1D. Vermont Private Health Insurance Coverage in 2013 and Percentage of Population According to Approximate AV Levels.



If we had recommended a plan that was less than 94 percent AV, many Vermonters would have less coverage of out of pocket costs than they do today.

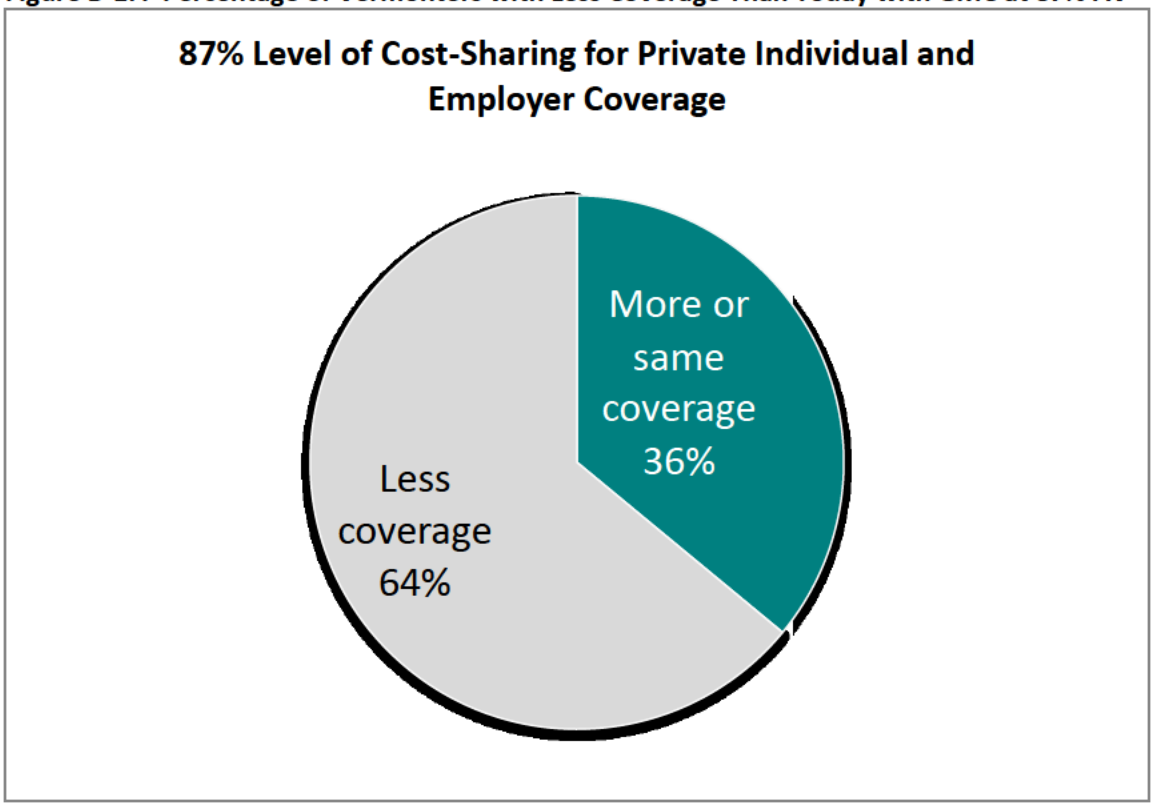
The following Figures illustrate the percentage of Vermonters who would be worse off at lower AV levels. The first Figure illustrates that 70% of Vermonters with employer sponsored insurance or who purchase through VHC today would be worse off if GMC had an AV of 80%. Only 30% would be better off with GMC at an 80% AV than today.

Figure B-1E. Percentage of Vermonters with Less Coverage Than Today with GMC at 80% AV



The second Figure illustrates that 64% of Vermonters with employer sponsored insurance or who purchase through VHC today would be worse off if GMC had an AV of 87%.

Figure B-1F. Percentage of Vermonters with Less Coverage Than Today with GMC at 87% AV



Finally, we also considered issues of equity. Act 48 requires consideration of the costs for Vermonters who need chronic care. At a low AV level, everyone would pay less in taxes, but people needing medical care would pay more in out of pocket costs than healthier people. A 94 percent AV level helps alleviate this disparity between the sick and the healthy and ensures that more of the costs are paid through the income-sensitive public premium.

Green Mountain Care - Secondary Coverage

Act 48 anticipates that Green Mountain Care will provide secondary coverage to Vermonters who have another source of primary health coverage, such as seniors who have Medicare. Until primary benefits and cost-sharing is finalized under Green Mountain Care, it is difficult to finalize secondary coverage. Secondary coverage typically wraps around the primary coverage plan for covered services and for cost-sharing. Additional analysis is needed after the primary benefits are determined in order to design secondary coverage for those on Medicare and covered by military insurance.

Because of this we recommend that secondary coverage be a later phase of GMC, but talk about some of the considerations below.

Medicare and Green Mountain Care

We examined a number of approaches for providing supplemental coverage for Vermonters to have Medicare as their primary coverage. Three options for expanding coverage were presented in the 2013 Green Mountain Care report authored by the University of Massachusetts and Wakely Consulting.[28] It is important to note that none of these options reduce Medicare benefits or otherwise harm Medicare coverage.

All of our models of GMC to date have continued the role of Medicare as the primary payer for the elderly and disabled and assumed that Medicare Supplemental insurance ("Medigap" policies) will continue to be available as required by federal law.

Maintaining a supplemental insurance market creates complexity in the system for health care providers and increases the overall administrative costs needed for the system to function. While the state may not eliminate this market, we have looked at how GMC might be attractive to seniors in lieu of supplemental policies.

It is important to keep in mind three important aspects of Medicare:

1) Seniors will always be enrolled in Medicare for primary coverage, just like today. Also, seniors will always have the choice of supplemental policies, Medicare Advantage, and Medicare Part D policies.

2) The fundamental flaw with Medicare cost-sharing has been the underinsurance for prescription drugs and uncapped Part B (hospital) liability facing seniors. When combined with the large amount of spending needed under Medicare Part D to hit the catastrophic coverage, this is a huge out of pocket risk for the elderly. The limitations of Part D were the impetus for Vermont to maintain its prescription drug coverage for seniors when Part D was implemented. An additional benefit of the ACA is the closing of the Part D "donut hole" in 2019. Out of pocket spending for Part B will remain as the major flaw in Medicare and necessitate many seniors purchasing supplemental coverage.

3) Other than drug coverage and the out of pocket maximum, Medicare supplemental coverage induces utilization that likely has relatively little value in improving health, and the supplemental market is relatively inefficient because of high administrative costs of administering these policies.[29]

We modeled one additional potential policy option for supplementing Medicare coverage through GMC, which was to provide a sliding-scale maximum out of pocket limit. Medicare does not currently have a limit on out of pocket costs and providing this

[28] This report is available here: http://hcr.vermont.gov/public_engagement/benefits. Medicare is discussed in detail in Appendices 6 and 7.

[29] This is illustrated by the Medical Loss Ratio for these plans.

limit through GMC would ensure that those on Medicare will have the same limits as all other Vermonters. A spreadsheet detailing this analysis and the costs is attached as Appendix B-10.

GMC Will Integrate Existing Coverage

The state currently provides wrap-around coverage for Medicare through three programs:

- Medicaid provides additional benefits and reduced cost-sharing for seniors whose income is at the poverty level, also commonly referred to as "Dual Eligibles"
- Medicaid provides additional coverage through Medicare "buy-in" programs, also called Service Limited Medicare Beneficiary (SLMB), Qualified Medicare Beneficiary (QMB), and Qualified Individual (QI1) programs. These programs help low-income Medicare beneficiaries who are not eligible for Medicaid pay all or some of their Medicare cost, including premiums, co-payments, and deductibles. The current income limit for these programs are
    - 0-100% FPL for QMB, which pays for Medicare premiums and out of pocket costs
    - 100-120% FPL for SLMB, which covers Medicare Part B premiums
    - 120-135% FPL for QI1, which covers Medicare Part B premiums
- Medicaid provides a pharmacy program, which wrap around Medicare Part D, called VPharm

The existing programs would be integrated into GMC in the following ways:

- Seniors who are eligible for both Medicare and Medicaid ("Dual Eligibles") would continue to have coverage consistent with current coverage and their coverage would continue to be funded with Medicaid-funds. These seniors will see no change over time.
- Seniors currently eligible for SLMB, QMB will, and QI also see no change.
- Seniors with VPharm coverage will see no change, except that VPharm premiums are eliminated to reduce administrative expenses from having both a tax and a premium system just for VPharm.

Green Mountain Care and the Supplemental Market

While working on plan designs, we also considered the effects the plan design might have on a supplemental market. Supplemental health insurance policies are typically designed to add on more comprehensive health coverage. They "wrap around" and complement basic health insurance either through covering more services or covering out of pocket costs.[30] An example of supplemental coverage of services currently available is adult dental and vision care. An example of supplemental health insurance

[30] Insurance Basics. Supplemental Policies. www.healthcare.gov

covering out of pocket costs is a Medicare supplemental policy known as "Medigap" for persons with Medicare. A Medigap policy is health insurance sold by private insurance companies to fill the "gaps" in Medicare coverage and helps pay some of the health care costs that Medicare does not cover.[31]

While supplemental policies can fill in gaps in coverage, they can also lead some consumers to pay for more protection than is necessary. Some consumers are "over-insured" and are paying for coverage they are unlikely to use. Supplemental insurance offerings should be tailored to complement comprehensive health coverage and to offer coverage for services that are beyond the scope of the comprehensive plan, but are not duplicative or unnecessary.

The level of supplemental insurance should correspond with the degree of coverage provided by GMC. If GMC coverage is basic, there is a stronger likelihood that there will be a larger supplemental insurance market presence. Because the covered services for GMC are set at a level commonly found in today's private insurance markets, it is likely that there will be a supplemental market limited to dental, vision, and long-term care. These markets exist today and we would expect them to continue.

Of greater concern would be a new market of supplemental insurance for cost-sharing, similar to the Medicare "Medigap" insurance products currently available. As discussed earlier, this type of market adds administrative complexity and would have the potential to shift unnecessary costs to the state. We took this into consideration when choosing the 94% AV plan design. It was determined that a plan design with a high AV would help avoid the need for a supplemental cost-sharing insurance market, which would only add complexity and cost to the system.

Conclusion

Under Green Mountain Care, many components of the benefits would stay the same:

- Preventive care is 100% covered without any cost,
- The same medical services are covered for the majority of Vermonters,
- Vermonters can still see their doctor,
- Vermonters can still receive care out of state when traveling or if their primary coverage is currently in a border state,
- Medicare benefits remain the same, because Medicare remains the primary coverage,
- Medicaid benefits remain the same.

The biggest potential change for some Vermonters is what they pay when they seek care. To ensure that Vermonters have access to comprehensive and affordable care, we

[31] Your Medicare Coverage Choices. http://www.medicare.gov/navigation/medicare-basics/coverage-choices.aspx

would recommend a 94 percent AV plan covering all of the essential health benefits under the ACA.

Appendix B-2. Recommended GMC Cost-Sharing Designs

Appendix B-2

VT Plan Options

Current Proposed Plan Designs - High Level Comparison File

December 16, 2014

Plan Type	State Plan - Original	State Plan - Revised	Catamount - Original	Catamount - Revised	Catamount - Subsidy Plan	HDHP-Recommended 80%
Actuarial Value		93.5%		87.0%	93.5%	80% Base (83%-94% subsidies)
Deductible	$0 - Med; $25 - Rx	$0 - Med, $75 - Rx (non-generics)	$500 - Med; $0 - Rx	$500 - Med; $0 - Rx	$100 - Med; $0 - Rx	$1,300 - IP $1,300 - Non-IP
MOOP	unlimited - Med; $775 - Rx (non-preferred brand excluded)	$5,000 - Med; $1,300 - Rx	$1,050 - Med; $1,250 - Rx	$1,600 - Med; $1,250 - Rx	$650 - Med; $200 - Rx	$2,100
Account Funding	N/A	N/A	N/A	N/A	N/A	80% - $0 83% - $200 87% - $500 94% - $1,200
Member Cost Sharing						
Inpatient Admission (non-MH/SA)	$250	$300	20%	20%	20%	$250
Inpatient Admissions MH/SA	$0	$0	20%	20%	20%	$250
Outpatient MH/SA	$0	$0	20%	20%	20%	$50
Outpatient Surgery	$0	$150	20%	20%	20%	$75
ER Visit	$50	$75	20%	20%	20%	$75
Ambulance	$0	$0	20%	20%	20%	$15
DME	$0	$0	20%	20%	20%	$15
Lab/X-Rays	$0	$0	20%	20%	20%	$15
PCP Visit	$20	$25	$10	$10	$10	$5
SPC Visit	$20	$35	$10	$20	$20	$15
Generic	10%	$10	$10	$10	$5	$5
Brand	20%	20%	$35	$35	$15	$15
Non-Brand	40%	40%	$35	$55	$30	$40

DEDUCTIBLE APPLIES TO SHADED CELLS

Red is a change from the original plan (state and Catamount only)

Notes:

1 Plan Designs are based on current estimates of allowed costs under the "base" scenario for GMC for the various plans.

2 To the extent the scenarios change, the plan designs will also need to be updated. Plan designs should be further refined closer to the implementation of GMC to ensure the cost sharing is as close as possible to the targeted actuarial value.

3 The HDHP Scenario 1 is a high level estimate. Neither the federal AVC or Wakely's model can accommodate the double deductible. If this plan is selected further analysis should be completed to more accurate determine the appropriate cost sharing for the plan.

4 Actual actuarial values depend on the members who are covered under GMC and the services these members receive. The resulting actuarial value could vary from the target, possibly significantly.

Vermont 2017 Plan Design Options
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	State Plan - Original Copay 94%			State Plan - Revised Copay 94%		
Wakely AV	92.6%			93.5%		
Federal AV (2016 Draft)	N/A			92.4%		
Deductible	*In-Network*	*Out-of-Network*	*Out-of-Area*	*In-Network*	*Out-of-Network*	*Out-of-Area*
Individual	$0	N/A	N/A	$0	N/A	N/A
Family	$0	N/A	N/A	$0	N/A	N/A
MOOP	*In-Network*	*Out-of-Network*	*Out-of-Area*	*In-Network*	*Out-of-Network*	*Out-of-Area*
Individual	N/A	N/A	N/A	$5,000	N/A	N/A
Family	N/A	N/A	N/A	$10,000	N/A	N/A
Medical/Rx Deductibles Combined?	No			No		
Medical/Rx MOOPs Combined?	No			No		
Inpatient Hospital	**Plan Coinsurance**	**Copayments**	**Deductible Applies?**	**Plan Coinsurance**	**Copayments**	**Deductible Applies?**
Medical		$ 250.00	N		$ 300.00	N
Surgical		$ 250.00	N		$ 300.00	N
Maternity		$ 250.00	N		$ 300.00	N
Mental Health	100%		N	100%		N
Chemical Dependency	100%		N	100%		N
Skilled Nursing Facility	100%		N	100%		N
Outpatient Hospital						
Emergency Room		$ 50.00	N		$ 75.00	N
Ambulatory Surgery	100%		N		$ 150.00	N
Radiology	100%		N	100%		N
Laboratory	100%		N	100%		N
Maternity Visits	100%		N	100%		N
Mental Health	100%		N	100%		N
Chemical Dependency	100%		N	100%		N
Other	100%		N	100%		N
Inpatient Physician						
Medical/Surgical	100%		N	100%		N
Mental Health	100%		N	100%		N
Chemical Dependency	100%		N	100%		N
Maternity	100%		N	100%		N
Outpatient Physician						
Physician Office Visits		$ 20.00	N		$ 25.00	N
Specialist Office Visits		$ 20.00	N		$ 35.00	N
Mental Health		$ 20.00	N		$ 25.00	N
Chemical Dependency		$ 20.00	N		$ 25.00	N
Other		$ 20.00	N		$ 25.00	N
Preventive Care						
Physical Exams. Etc.	100%		N	100%		N
Immunizations	100%		N	100%		N
Screenings	100%		N	100%		N
Well Childcare	100%		N	100%		N
Outpatient Miscellaneous						
Allergy		$ 20.00	N		$ 25.00	N
Ambulance	100%		N	100%		N
Chemotherapy	100%		N	100%		N
Chiropractor		$ 20.00	N		$ 25.00	N
Dialysis	100%		N	100%		N
DME	100%		N	100%		N
Hearing	100%		N	100%		N
Hearing Aids	100%		N	100%		N
Home Health Care	100%		N	100%		N
Laboratory	100%		N	100%		N
Physical Therapy		$ 20.00	N		$ 25.00	N
Podiatry Services	100%		N	100%		N
Radiology/X-Ray	100%		N	100%		N
Speech		$ 20.00	N		$ 25.00	N
Rx Inputs						
	Retail	**Mail Order**		**Retail**	**Mail Order**	
Annual Deductibles	$25	$25		$75	$75	
Annual MOOP	$775			$1,300		
Deductible/MOOP Applies?						
Generic	Y/Y			N/Y		
Brand Formulary	Y/Y			Y/Y		
Brand Non Formulary	Y/N			Y/Y		
Specialty	Y/N			Y/Y		
Member Coinsurance	**Retail**	**Mail Order**		**Retail**	**Mail Order**	
Generic	10%	10%				
Brand Formulary	20%	20%		20%	20%	
Brand Non Formulary	40%	40%		40%	40%	
Specialty	40%	40%		40%	40%	
Member Copay	**Retail**	**Mail Order**		**Retail**	**Mail Order**	
Generic				$ 10.00	$ 25.00	
Brand Formulary						
Brand Non Formulary						
Specialty						

Vermont 2017 Plan Design Options
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	Catamount Plan - Original Deductible 87%			Catamount Plan - Revised Deductible 87%			Catamount Plan - Revised Deductible 94% Subsidy		
Wakely AV	88.5%			87.0%			93.5%		
Federal AV (2016 Draft)	89.4%			87.5%			94.1%		
Deductible	*In-Network*	*Out-of-Network*	*Out-of-Area*	*In-Network*	*Out-of-Network*	*Out-of-Area*	*In-Network*	*Out-of-Network*	*Out-of-Area*
Individual	$500	N/A	N/A	$500	N/A	N/A	$0	N/A	N/A
Family	$1,000	N/A	N/A	$1,000	N/A	N/A	$0	N/A	N/A
MOOP	*In-Network*	*Out-of-Network*	*Out-of-Area*	*In-Network*	*Out-of-Network*	*Out-of-Area*	*In-Network*	*Out-of-Network*	*Out-of-Area*
Individual	$1,050	N/A	N/A	$1,600	N/A	N/A	$650	N/A	N/A
Family	$2,100	N/A	N/A	$3,200	N/A	N/A	$1,300	N/A	N/A
Medical/Rx Deductibles Combined?	No			No			No		
Medical/Rx MOOPs Combined?	No			No			No		
	Plan Coinsurance	**Copayments**	**Deductible Applies?**	**Plan Coinsurance**	**Copayments**	**Deductible Applies?**	**Plan Coinsurance**	**Copayments**	**Deductible Applies?**
Inpatient Hospital									
Medical	80%	$ -	Y	80%	$ -	Y	80%	$ -	Y
Surgical	80%	$ -	Y	80%	$ -	Y	80%	$ -	Y
Maternity	80%	$ -	Y	80%	$ -	Y	80%	$ -	Y
Mental Health	80%	$ -	Y	80%	$ -	Y	80%	$ -	Y
Chemical Dependency	80%	$ -	Y	80%	$ -	Y	80%	$ -	Y
Skilled Nursing Facility	80%	$ -	Y	80%	$ -	Y	80%	$ -	Y
Outpatient Hospital									
Emergency Room	80%	$ -	Y	80%	$ -	Y	80%	$ -	Y
Ambulatory Surgery	80%	$ -	Y	80%	$ -	Y	80%	$ -	Y
Radiology	80%	$ -	Y	80%	$ -	Y	80%	$ -	Y
Laboratory	80%	$ -	Y	80%	$ -	Y	80%	$ -	Y
Maternity Visits	80%	$ -	Y	80%	$ -	Y	80%	$ -	Y
Mental Health	80%	$ -	Y	80%	$ -	Y	80%	$ -	Y
Chemical Dependency	80%	$ -	Y	80%	$ -	Y	80%	$ -	Y
Inpatient Physician									
Medical/Surgical	80%	$ -	Y	80%	$ -	Y	80%	$ -	Y
Mental Health	80%	$ -	Y	80%	$ -	Y	80%	$ -	Y
Chemical Dependency	80%	$ -	Y	80%	$ -	Y	80%	$ -	Y
Maternity	80%	$ -	Y	80%	$ -	Y	80%	$ -	Y
Outpatient Physician									
Physician Office Visits	0%	$ 10.00	N	0%	$ 10.00	N	0%	$ 10.00	N
Specialist Office Visits	0%	$ 10.00	N	0%	$ 20.00	N	0%	$ 20.00	N
Mental Health	0%	$ 10.00	N	0%	$ 10.00	N	0%	$ 10.00	N
Chemical Dependency	0%	$ 10.00	N	0%	$ 10.00	N	0%	$ 10.00	N
Preventive Care									
Physical Exams. Etc.	100%	$ -	N	100%	$ -	N	100%	$ -	N
Outpatient Miscellaneous									
Ambulance	80%	$ -	Y	80%	$ -	Y	80%	$ -	Y
Dialysis	80%	$ -	Y	80%	$ -	Y	80%	$ -	Y
DME	80%	$ -	Y	80%	$ -	Y	80%	$ -	Y
Physical Therapy	80%	$ -	Y	80%	$ -	Y	80%	$ -	Y
Radiology/X-Ray	80%	$ -	Y	80%	$ -	Y	80%	$ -	Y
Rx Inputs									
	Retail	**Mail Order**		**Retail**	**Mail Order**		**Retail**	**Mail Order**	
Annual Deductibles	$0	$0		$0	$0		$0	$0	
Annual MOOP	$1,250			$1,250			$200		
Deductible/MOOP Applies?									
Generic	N/Y			N/Y			N/Y		
Brand Formulary	N/Y			N/Y			N/Y		
Brand Non Formulary	N/Y			N/Y			N/Y		
Specialty	N/Y			N/Y			N/Y		
Member Coinsurance	**Retail**	**Mail Order**		**Retail**	**Mail Order**		**Retail**	**Mail Order**	
Generic	0%	0%		0%	0%		0%	0%	
Brand Formulary	0%	0%		0%	0%		0%	0%	
Brand Non Formulary	0%	0%		0%	0%		0%	0%	
Specialty	0%	0%		0%	0%		0%	0%	
Member Copay	**Retail**	**Mail Order**		**Retail**	**Mail Order**		**Retail**	**Mail Order**	
Generic	$ 10.00	$ 20.00		$ 10.00	$ 25.00		$ 5.00	$ 12.50	
Brand Formulary	$ 35.00	$ 70.00		$ 35.00	$ 87.50		$ 15.00	$ 37.50	
Brand Non Formulary	$ 55.00	$ 110.00		$ 55.00	$ 137.50		$ 30.00	$ 75.00	
Specialty	$ 55.00	$ 110.00		$ 55.00	$ 137.50		$ 30.00	$ 75.00	

Vermont 2017 Plan Design Options
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	80% Recommended HDHP 80%		
Wakely AV	**79.9%**		
Federal AV (2016 Draft)	**79.7%**		
Deductible	*In-Network*	*Out-of-Network*	*Out-of-Area*
Individual	$1300 IP/$1300 Non-IP	N/A	N/A
Family	$2600 IP/$2600 Non-IP	N/A	N/A
MOOP	*In-Network*	*Out-of-Network*	*Out-of-Area*
Individual	$2,100	N/A	N/A
Family	$4,200	N/A	N/A
Medical/Rx Deductibles Combined?	Yes		
Medical/Rx MOOPs Combined?	Yes		

	Plan Coinsurance	Copayments	Deductible Applies?
Inpatient Hospital			
Medical		$ 250.00	Y
Surgical		$ 250.00	Y
Maternity		$ 250.00	Y
Mental Health		$ 250.00	Y
Chemical Dependency		$ 250.00	Y
Skilled Nursing Facility		$ 75.00	Y
Outpatient Hospital			
Emergency Room		$ 75.00	Y
Ambulatory Surgery		$ 75.00	Y
Radiology		$ 50.00	Y
Laboratory		$ 50.00	Y
Maternity Visits		$ 50.00	Y
Mental Health		$ 50.00	Y
Chemical Dependency		$ 50.00	Y
Other		$ 50.00	N
Inpatient Physician			
Medical/Surgical	100%		Y
Mental Health	100%		Y
Chemical Dependency	100%		Y
Maternity	100%		Y
Outpatient Physician			
Physician Office Visits		$ 5.00	N
Specialist Office Visits		$ 15.00	N
Mental Health		$ 5.00	N
Chemical Dependency		$ 5.00	N
Other		$ 15.00	N
Preventive Care			
Physical Exams. Etc.	100%	$ -	N
Immunizations	100%	$ -	N
Screenings	100%	$ -	N
Well Childcare	100%	$ -	N
Outpatient Miscellaneous			
Ambulance		$ 15.00	Y
Dialysis		$ 15.00	Y
DME		$ 15.00	Y
Physical Therapy		$ 15.00	Y

Rx Inputs

	Retail	Mail Order
Annual Deductibles	$0	$0

	Retail	Mail Order
Member Coinsurance		
Generic	0%	0%
Brand Formulary	0%	0%
Brand Non Formulary	0%	0%
Specialty	0%	0%

	Retail	Mail Order
Member Copay		
Generic	$ 5.00	$ 15.00
Brand Formulary	$ 15.00	$ 45.00
Brand Non Formulary	$ 40.00	$ 120.00
Specialty	$ 40.00	$ 120.00

Appendix B-3. Vermont Essential Health Benefits Detail

VERMONT EHB BENCHMARK PLAN

SUMMARY INFORMATION

Plan Type	Plan from largest small group product, Health Maintenance Organization
Issuer Name	The Vermont Health Plan, LLC
Product Name	CDHP-HMO
Plan Name	BlueCare, The Vermont Health Plan, LLC, CDHP
Supplemented Categories (Supplementary Plan Type)	• Pediatric Oral (State CHIP) • Pediatric Vision (FEDVIP)
Habilitative Services Included Benchmark (Yes/No)	No
Habilitative Services Defined by State (Yes/No)	No

BENEFITS AND LIMITS

Row Number	A Benefit	B Covered (Required): Is benefit Covered or Not Covered	C Benefit Description (Required if benefit is Covered): Enter a Description, it may be the same as the Benefit name	D Quantitative Limit on Service? (Required if benefit is Covered): Select "Yes" if Quantitative Limit applies	E Limit Quantity (Required if Quantitative Limit is "Yes"): Enter Limit Quantity	F Limit Units (Required if Quantitative Limit is "Yes"): Select the correct limit units	G Other Limit Units Description (Required if "Other" Limit Unit): If a Limit Unit of "Other" was selected in Limit Units, enter a description	H Minimum Stay (Optional): Enter the Minimum Stay (in hours) as a whole number	I Exclusions (Optional): Enter any Exclusions for this benefit	J Explanation: (Optional) Enter an Explanation for anything not listed	K Does this benefit have additional limitations or restrictions? (Required if benefit is Covered): Select "Yes" if there are additional limitations or restrictions that need to be described
1	**Primary Care Visit to Treat an Injury or Illness**	Covered	Primary Care Visit to Treat an Injury or Illness	No							No
2	**Specialist Visit**	Covered	Specialist Visit	No							No
3	**Other Practitioner Office Visit (Nurse, Physician Assistant)**	Covered	Other Practitioner Office Visit (Nurse, Physician Assistant)	No							No
4	**Outpatient Facility Fee (e.g., Ambulatory Surgery Center)**	Covered	Outpatient Facility Fee (e.g., Ambulatory Surgery Center)	No							No
5	**Outpatient Surgery Physician/Surgical Services**	Covered	Outpatient Surgery Physician/Surgical Services	No							Yes
6	**Hospice Services**	Covered	Hospice Services	No						Must meet hospice requirements for benefit eligibility.	Yes
7	**Non-Emergency Care When Traveling Outside the U.S.**	Covered	Non-Emergency Care When Traveling Outside the U.S.	No					Excluded UNLESS member qualifies for coverage due to sabbatical or attending college in a foreign country.		No
8	**Routine Dental Services (Adult)**	Not Covered									
9	**Infertility Treatment**	Not Covered								Refer to Infertility Drug limitation in Generic, Preferred and Non-Preferred Prescription Drug categories.	
10	**Long-Term/ Custodial Nursing Home Care**	Not Covered									
11	**Private-Duty Nursing**	Covered	Private-Duty Nursing	Yes	2000	Other	Covered up to $2,000 per plan year			Requires prior approval and recertification of treatment plan every 60 days.	No

Row Number	A Benefit	B Covered (Required): Is benefit Covered or Not Covered	C Benefit Description (Required if benefit is Covered): Enter a Description, it may be the same as the Benefit name	D Quantitative Limit on Service? (Required if benefit is Covered): Select "Yes" if Quantitative Limit applies	E Limit Quantity (Required if Quantitative Limit is "Yes"): Enter Limit Quantity	F Limit Units (Required if Quantitative Limit is "Yes"): Select the correct limit units	G Other Limit Units Description (Required if "Other" Limit Unit): If a Limit Unit of "Other" was selected in Limit Units, enter a description	H Minimum Stay (Optional): Enter the Minimum Stay (in hours) as a whole number	I Exclusions (Optional): Enter any Exclusions for this benefit	J Explanation: (Optional) Enter an Explanation for anything not listed	K Does this benefit have additional limitations or restrictions? (Required if benefit is Covered): Select "Yes" if there are additional limitations or restrictions that need to be described
12	**Routine Eye Exam (Adult)**	Covered	Routine Eye Exam (Adult)	Yes	1	Other	1 routine eye exam per calendar year		Does not cover the evaluation and fitting of contact lenses or other supplemental tests, routine eye care, eye exercises or visual training.		No
13	**Urgent Care Centers or Facilities**	Covered	Urgent Care Centers or Facilities	No							No
14	**Home Health Care Services**	Covered	Home Health Care Services	No							No
15	**Emergency Room Services**	Covered	Emergency Room Services	No					Excludes benefits for an emergency room services that does not meet definition of Emergency Service.		Yes
16	**Emergency Transportation/ Ambulance**	Covered	Emergency Transportation/ Ambulance	No					Insured's condition must meet the criteria for an emergency medical condition. Insured must get approval within 48 hours after emergency air or water transport.		No
17	**Inpatient Hospital Services (e.g., Hospital Stay)**	Covered	Inpatient Hospital Services (e.g., Hospital Stay)	Yes	1	Other	Coverage for either day of admission OR day of discharge but not both.				No
18	**Inpatient Physician and Surgical Services**	Covered	Inpatient Physician and Surgical Services	Yes	1	Other	May limit the number of visits covered by one Provider in a given day.				Yes
19	**Bariatric Surgery**	Covered	Bariatric Surgery	Yes	1	Other	Covered up to $10,000 per lifetime.				No
20	**Cosmetic Surgery**	Covered	Cosmetic Surgery	No					Cosmetic Surgery is an excluded benefit except for prior approval for reconstruction as detailed in certificate of coverage.		No

Row Number	A Benefit	B Covered (Required): Is benefit Covered or Not Covered	C Benefit Description (Required if benefit is Covered): Enter a Description, it may be the same as the Benefit name	D Quantitative Limit on Service? (Required if benefit is Covered): Select "Yes" if Quantitative Limit applies	E Limit Quantity (Required if Quantitative Limit is "Yes"): Enter Limit Quantity	F Limit Units (Required if Quantitative Limit is "Yes"): Select the correct limit units	G Other Limit Units Description (Required if "Other" Limit Unit): If a Limit Unit of "Other" was selected in Limit Units, enter a description	H Minimum Stay (Optional): Enter the Minimum Stay (in hours) as a whole number	I Exclusions (Optional): Enter any Exclusions for this benefit	J Explanation: (Optional) Enter an Explanation for anything not listed	K Does this benefit have additional limitations or restrictions? (Required if benefit is Covered): Select "Yes" if there are additional limitations or restrictions that need to be described
21	**Skilled Nursing Facility**	Covered	Skilled Nursing Facility	No						Covered by participating facility only for Acute Care. Includes room, board, general nursing care, medication and drugs given by SNF during a covered stay and medical services included in the rates of a SNF.	No
22	**Prenatal and Postnatal Care**	Covered	Prenatal and Postnatal Care	No						See Maternity Office Visits and Inpatient Hospital Services for additional benefit information.	Yes
23	**Delivery and All Inpatient Services for Maternity Care**	Covered	Delivery and All Inpatient Services for Maternity Care	No						Covered as an Inpatient Hospital Stay.	No
24	**Mental/Behavioral Health Outpatient Services**	Covered	Mental/Behavioral Health Outpatient Services	No						Includes individual and group psychotherapy, family and couples therapy, intensive programs, partial hospital day treatment, psychological testing when integral to treatment, psychotherapy programs to improve compliance with prescribed medical treatment regimens for diabetes, hypertension, ischemic heart disease and emphysema.	Yes
25	**Mental/Behavioral Health Inpatient Services**	Covered	Mental/Behavioral Health Inpatient Services	No					Excludes services provided by non-participating providers or facilities, treatment without concurrent review, non-traditional or alternative therapies, services that focus on education or socialization or delinquency, custodial care that is not medically necessary and biofeedback, pain management, stress reduction classes or pastoral counseling.	Includes hospitalization, residential treatment programs.	No

Row Number	A Benefit	B Covered (Required): Is benefit Covered or Not Covered	C Benefit Description (Required if benefit is Covered): Enter a Description, it may be the same as the Benefit name	D Quantitative Limit on Service? (Required if benefit is Covered): Select "Yes" if Quantitative Limit applies	E Limit Quantity (Required if Quantitative Limit is "Yes"): Enter Limit Quantity	F Limit Units (Required if Quantitative Limit is "Yes"): Select the correct limit units	G Other Limit Units Description (Required if "Other" Limit Unit): If a Limit Unit of "Other" was selected in Limit Units, enter a description	H Minimum Stay (Optional): Enter the Minimum Stay (in hours) as a whole number	I Exclusions (Optional): Enter any Exclusions for this benefit	J Explanation: (Optional) Enter an Explanation for anything not listed	K Does this benefit have additional limitations or restrictions? (Required if benefit is Covered): Select "Yes" if there are additional limitations or restrictions that need to be described
26	**Substance Abuse Disorder Outpatient Services**	Covered	Substance Abuse Disorder Outpatient Services	No						Includes detoxification in outpatient rehab facility (including services for the patient's family when necessary).	Yes
27	**Substance Abuse Disorder Inpatient Services**	Covered	Substance Abuse Disorder Inpatient Services	No					Excludes services provided by non-participating providers or facilities, treatment without concurrent review, non-traditional or alternative therapies, services that focus on education or socialization or delinquency, custodial care that is not medically necessary and biofeedback, pain management, stress reduction classes or pastoral counseling.	Includes detoxification in an inpatient rehabilitation facility.	No
28	**Generic Drugs**	Covered	Generic Drugs	Yes	90	Other	Limited to a 90-day supply for retail and home delivery (mail order) per fill.				Yes
29	**Preferred Brand Drugs**	Covered	Preferred Brand Drugs	Yes	90	Other	Limited to a 90-day supply for retail and home delivery (mail order) per fill.			The limit quantity applies per script on retail and home delivery.	Yes
30	**Non-Preferred Brand Drugs**	Covered	Non-Preferred Brand Drugs	Yes	90	Other	Limited to a 90-day supply for retail and home delivery (mail order) per fill.			The limit quantity applies per script on retail and home delivery.	Yes
31	**Specialty Drugs**	Covered	Specialty Drugs	Yes	30	Other	Limited to a 30-day supply.		ONLY Participating Specialty pharmacies may be utilized for Specialty drugs.		Yes

Row Number	A Benefit	B Covered (Required): Is benefit Covered or Not Covered	C Benefit Description (Required if benefit is Covered): Enter a Description, it may be the same as the Benefit name	D Quantitative Limit on Service? (Required if benefit is Covered): Select "Yes" if Quantitative Limit applies	E Limit Quantity (Required if Quantitative Limit is "Yes"): Enter Limit Quantity	F Limit Units (Required if Quantitative Limit is "Yes"): Select the correct limit units	G Other Limit Units Description (Required if "Other" Limit Unit): If a Limit Unit of "Other" was selected in Limit Units, enter a description	H Minimum Stay (Optional): Enter the Minimum Stay (in hours) as a whole number	I Exclusions (Optional): Enter any Exclusions for this benefit	J Explanation: (Optional) Enter an Explanation for anything not listed	K Does this benefit have additional limitations or restrictions? (Required if benefit is Covered): Select "Yes" if there are additional limitations or restrictions that need to be described
32	**Outpatient Rehabilitation Services**	Covered	Outpatient Rehabilitation Services	Yes	30	Other	Up to 30 outpatient sessions combined per plan year.			Cardiac Rehabilitation is covered up to 36 visits per cardiac event. Typically include physical, occupational and speech therapy but may also include radiation therapy, chemotherapy, dialysis, infusion therapy.	Yes
33	**Habilitation Services**	Covered	Habilitation Services	No						Autism Coverage per Vermont State Mandate for ages zero to six years.	No
34	**Chiropractic Care**	Covered	Chiropractic Care	Yes	12	Other	Prior Approval is required after the 12th visit.			Prior approval required after 12 visits; includes treatment for neuromusculoskeletal conditions by a network provider working within the scope of their license.	No
35	**Durable Medical Equipment**	Covered	Durable Medical Equipment	No						Some durable medical equipment and supplies require prior approval. Includes supplies and equipment necessary for administration, orthotics (if approved), prosthetics, and devices. Threshold applies.	Yes
36	**Hearing Aids**	Not Covered									
37	**Diagnostic Test (X-Ray and Lab Work)**	Covered	Diagnostic Test (X-Ray and Lab Work)	No							No
38	**Imaging (CT/PET Scans, MRIs)**	Covered	Imaging (CT/PET Scans, MRIs)	No							No
39	**Preventive Care/ Screening/ Immunization**	Covered	Preventive Care/Screening/ Immunization	No							No
40	**Routine Foot Care**	Covered	Routine Foot Care	No					Covered for Diabetics ONLY; excluded for all other members.		No
41	**Acupuncture**	Not Covered									
42	**Weight Loss Programs**	Not Covered									

Row Number	A Benefit	B Covered (Required): Is benefit Covered or Not Covered	C Benefit Description (Required if benefit is Covered): Enter a Description, it may be the same as the Benefit name	D Quantitative Limit on Service? (Required if benefit is Covered): Select "Yes" if Quantitative Limit applies	E Limit Quantity (Required if Quantitative Limit is "Yes"): Enter Limit Quantity	F Limit Units (Required if Quantitative Limit is "Yes"): Select the correct limit units	G Other Limit Units Description (Required if "Other" Limit Unit): If a Limit Unit of "Other" was selected in Limit Units, enter a description	H Minimum Stay (Optional): Enter the Minimum Stay (in hours) as a whole number	I Exclusions (Optional): Enter any Exclusions for this benefit	J Explanation: (Optional) Enter an Explanation for anything not listed	K Does this benefit have additional limitations or restrictions? (Required if benefit is Covered): Select "Yes" if there are additional limitations or restrictions that need to be described
43	**Routine Eye Exam for Children**	Covered	Routine Eye Exam for Children	Yes	1	Other	1 routine eye exam per member per calendar year.		Does not cover the evaluation and fitting of contact lenses or other supplemental tests.		No
44	**Eye Glasses for Children**	Covered	Eye Glasses for Children	No						Refer to "Eye Glasses or Contact Lenses to replace the lens of an eye when the lens was not replaced at the time of surgery" on Other tab for more information.	No
45	**Dental Check-Up for Children**	Covered	Dental Check-Up for Children	Yes	2	Treatments per year					No

OTHER BENEFITS

Row Number	A Benefit	B Covered (Required): Is benefit Covered or Not Covered	C Benefit Description (Required if benefit is Covered): Enter a Description, it may be the same as the Benefit name	D Quantitative Limit on Service? (Required if benefit is Covered): Select "Yes" if Quantitative Limit applies	E Limit Quantity (Required if Quantitative Limit is "Yes"): Enter Limit Quantity	F Limit Units (Required if Quantitative Limit is "Yes"): Select the correct limit units	G Other Limit Units Description (Required if "Other" Limit Unit): If a Limit Unit of "Other" was selected in Limit Units, enter a description	H Minimum Stay (Optional): Enter the Minimum Stay (in hours) as a whole number	I Exclusions (Optional): Enter any Exclusions for this benefit	J Explanation: (Optional) Enter an Explanation for anything not listed	K Does this benefit have additional limitations or restrictions? (Required if benefit is Covered): Select "Yes" if there are additional limitations or restrictions that need to be described
1	**Other**	Covered	Nutritional Counseling	Yes	3	Visits per year	3 visits per plan year		Visits for treatment of diabetes do not count toward this visit limit.		No
2	**Outpatient Surgery Physician/ Surgical Services**	Covered	Neuropsychological Testing	Yes	8	Hours per year					No
3	**Hospice Services**	Covered	Home Health Aide	Yes	100	Hours per month				For personal care services only.	No
4	**Outpatient Rehabilitation Services**	Covered	Outpatient physical, speech and occupational therapy	Yes	30	Visits per year	Up to 30 outpatient sessions combined per plan year.			Covered up to 30 visits combined per plan year.	No
5	**Other**	Covered	Preventive Care	No						Includes routine physical examinations, immunizations, well-child care, screening mammogram, screening colonoscopy, preventive GYN.	No
6	**Other**	Covered	Dental Services (not Routine)	No						Includes treatment for or in connection with an accidental injury to jaws, sound natural teeth, mouth or face, provided a continuous course of dental treatment is started with six months of the accident; also includes surgery to correct gross deformity from major disease or surgery with service occurring within six months of the onset of disease or within six months of surgery.	No
7	**Inpatient Physician and Surgical Services**	Covered	Sterilization Reversal	Yes	1	Other	Procedures per lifetime			Covers only one attempt at reversal of sterilization.	No

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8	**Durable Medical Equipment**	Covered	Eye Glasses or Contact Lenses to replace the lens of an eye when the lens was not replaced at the time of surgery.	Yes	1	Other	1 set of accompanying eyeglasses or contact lenses for the original prescription and one set for each new prescription.				Yes
9	**Durable Medical Equipment**	Covered	Dental prosthetics	No					Repair or replacement of dental appliances or dental prosthetics.	With prior approval and only of required to treat an accidental injury (except injury as a result of chewing or biting); or to correct gross deformity resulting from major disease or Surgery; to treat obstructive sleep apnea; or to treat craniofacial disorders, including temporomandibular joint syndrome.	No
10	**Generic Drugs**	Covered	Infertility medications	Yes	4	Months per year	Cover up to four months of fertility medication per plan year when attempt to conceive through natural means.				No
11	**Preferred Brand Drugs**	Covered	Infertility medications	Yes	4	Months per year	Cover up to four months of fertility medication per plan year when attempt to conceive through natural means.				No
12	**Non-Preferred Brand Drugs**	Covered	Infertility medications	Yes	4	Months per year	Cover up to four months of fertility medication per plan year when attempt to conceive through natural means.				No
13	**Other**	Covered	Nutritional Formulae or supplements	Yes	2500	Other	Up to $2,500 per year for medical foods prescribed for the medically necessary treatment of an inherited metabolic disease or formulae and supplements administered through a feeding tube.				No
14	**Prenatal and Postnatal Care**	Covered	Maternity Office Visits	No						Includes coverage by a Physician or other Professional during a woman's pregnancy for pre-natal visits and other care and post-natal visits.	No
15	**Other**	Covered	Transplant Services - deceased donor	Yes	35000	Other	For transplants using a deceased donor, benefits are limited to $35,000 per solid organ transplant for search, removal, storage, and transportation of the organ.				No

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16	**Emergency Room Services**	Covered	Emergency room physician services	No					Insured's condition must meet the criteria for an emergency medical condition.		No
17	**Emergency Room Services**	Covered	Emergency mental health and substance use physician and facility services	No					Insured's condition must meet the criteria for an emergency medical condition.		No
18	**Mental/Behavioral Health Outpatient Services**	Covered	Mental/Behavioral health office visits	No							No
19	**Substance Abuse Disorder Outpatient Services**	Covered	Substance use disorder office visits	No							No
20	**Outpatient Rehabilitation Services**	Covered	Cardiac rehabilitation services	Yes	36	Other	36 visits per cardiac event; three supervised exercise sessions per week up to total of 36 sessions for cardiac and pulmonary rehab programs.				No
21	**Hospice Services**	Covered	Hospice Services Homemaker Services	Yes	100	Hours per month					No
22	**Hospice Services**	Covered	Hospice Continuous Care Services in Home	Yes	5	Days per admission	OR 120 hours of continuous care.			For in home care.	No
23	**Hospice Services**	Covered	Hospice Respite Care	Yes	72	Hours per month					No
24	**Hospice Services**	Covered	Hospice Social Services Visits	Yes	6	Visits per lifetime					No
25	**Hospice Services**	Covered	Hospice Bereavement visits	Yes	2	Visits per lifetime				Two bereavement visits following death.	No

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26	**Generic Drugs**	Covered	Antibiotics and Narcotic Day Supply Limitation	Yes	30	Other	Antibiotics and Narcotics are limited to a 30-day supply both at retail and home delivery (mail order).				No
27	**Preferred Brand Drugs**	Covered	Antibiotics and Narcotic Day Supply Limitation	Yes	30	Other	Antibiotics and Narcotics are limited to a 30-day supply both at retail and home delivery (mail order).				No
28	**Non-Preferred Brand Drugs**	Covered	Antibiotics and Narcotic Day Supply Limitation	Yes	30	Other	Antibiotics and Narcotics are limited to a 30-day supply both at retail and home delivery (mail order).				No
29	**Specialty Drugs**	Covered	Antibiotics and Narcotic Day Supply Limitation	Yes	30	Other	Antibiotics and Narcotics are limited to a 30-day supply both at retail and home delivery (mail order).				No
30	**Other**	Covered	Transplant Services - Live donor	Yes	65000	Other	For transplants using a live donor, benefits are limited to $65,000 for the live donor's surgical expenses and storage and transportation of the organ for each covered organ transplant procedure completed. Costs for a donor must be incurred within 120 days from the date of the donor's surgery.				No
31	**Other**	Covered	Transplant Recipient - Benefit Coverage Time Period	Yes	1	Other	From 30 days before the transplant to 365 days after the transplant for bone marrow transplants OR From five days before the transplant to 365 days after the transplant.				No
32	**Durable Medical Equipment**	Covered	Pre-fabricated knee braces	No					Custom-fabricated or custom-molded knee braces.		No

PRESCRIPTION DRUG EHB-BENCHMARK PLAN BENEFITS BY CATEGORY AND CLASS

CATEGORY	CLASS	SUBMISSION COUNT
ANALGESICS	NONSTEROIDAL ANTI-INFLAMMATORY DRUGS	20
ANALGESICS	OPIOID ANALGESICS, LONG-ACTING	11
ANALGESICS	OPIOID ANALGESICS, SHORT-ACTING	11
ANESTHETICS	LOCAL ANESTHETICS	3
ANTI-ADDICTION/SUBSTANCE ABUSE TREATMENT AGENTS	ALCOHOL DETERRENTS/ANTI-CRAVING	3
ANTI-ADDICTION/SUBSTANCE ABUSE TREATMENT AGENTS	OPIOID ANTAGONISTS	3
ANTI-ADDICTION/SUBSTANCE ABUSE TREATMENT AGENTS	SMOKING CESSATION AGENTS	3
ANTI-INFLAMMATORY AGENTS	GLUCOCORTICOIDS	1
ANTI-INFLAMMATORY AGENTS	NONSTEROIDAL ANTI-INFLAMMATORY DRUGS	20
ANTIBACTERIALS	AMINOGLYCOSIDES	9
ANTIBACTERIALS	ANTIBACTERIALS, OTHER	20
ANTIBACTERIALS	BETA-LACTAM, CEPHALOSPORINS	18
ANTIBACTERIALS	BETA-LACTAM, OTHER	5
ANTIBACTERIALS	BETA-LACTAM, PENICILLINS	12
ANTIBACTERIALS	MACROLIDES	5
ANTIBACTERIALS	QUINOLONES	8
ANTIBACTERIALS	SULFONAMIDES	4
ANTIBACTERIALS	TETRACYCLINES	4
ANTICONVULSANTS	ANTICONVULSANTS, OTHER	2
ANTICONVULSANTS	CALCIUM CHANNEL MODIFYING AGENTS	4
ANTICONVULSANTS	GAMMA-AMINOBUTYRIC ACID (GABA) AUGMENTING AGENTS	5
ANTICONVULSANTS	GLUTAMATE REDUCING AGENTS	3
ANTICONVULSANTS	SODIUM CHANNEL AGENTS	7
ANTIDEMENTIA AGENTS	ANTIDEMENTIA AGENTS, OTHER	1
ANTIDEMENTIA AGENTS	CHOLINESTERASE INHIBITORS	3
ANTIDEMENTIA AGENTS	N-METHYL-D-ASPARTATE (NMDA) RECEPTOR ANTAGONIST	1
ANTIDEPRESSANTS	ANTIDEPRESSANTS, OTHER	8
ANTIDEPRESSANTS	MONOAMINE OXIDASE INHIBITORS	4
ANTIDEPRESSANTS	SEROTONIN/NOREPINEPHRINE REUPTAKE INHIBITORS	9
ANTIDEPRESSANTS	TRICYCLICS	9
ANTIEMETICS	ANTIEMETICS, OTHER	10
ANTIEMETICS	EMETOGENIC THERAPY ADJUNCTS	8
ANTIFUNGALS	NO USP CLASS	26
ANTIGOUT AGENTS	NO USP CLASS	5
ANTIMIGRAINE AGENTS	ERGOT ALKALOIDS	2
ANTIMIGRAINE AGENTS	PROPHYLACTIC	4

CATEGORY	CLASS	SUBMISSION COUNT
ANTIMIGRAINE AGENTS	SEROTONIN (5-HT) 1B/1D RECEPTOR AGONISTS	7
ANTIMYASTHENIC AGENTS	PARASYMPATHOMIMETICS	3
ANTIMYCOBACTERIALS	ANTIMYCOBACTERIALS, OTHER	2
ANTIMYCOBACTERIALS	ANTITUBERCULARS	10
ANTINEOPLASTICS	ALKYLATING AGENTS	8
ANTINEOPLASTICS	ANTIANGIOGENIC AGENTS	2
ANTINEOPLASTICS	ANTIESTROGENS/MODIFIERS	3
ANTINEOPLASTICS	ANTIMETABOLITES	3
ANTINEOPLASTICS	ANTINEOPLASTICS, OTHER	6
ANTINEOPLASTICS	AROMATASE INHIBITORS, 3RD GENERATION	3
ANTINEOPLASTICS	ENZYME INHIBITORS	3
ANTINEOPLASTICS	MOLECULAR TARGET INHIBITORS	12
ANTINEOPLASTICS	MONOCLONAL ANTIBODIES	3
ANTINEOPLASTICS	RETINOIDS	3
ANTIPARASITICS	ANTHELMINTICS	4
ANTIPARASITICS	ANTIPROTOZOALS	12
ANTIPARASITICS	PEDICULICIDES/SCABICIDES	6
ANTIPARKINSON AGENTS	ANTICHOLINERGICS	3
ANTIPARKINSON AGENTS	ANTIPARKINSON AGENTS, OTHER	3
ANTIPARKINSON AGENTS	DOPAMINE AGONISTS	4
ANTIPARKINSON AGENTS	DOPAMINE PRECURSORS/L-AMINO ACID DECARBOXYLASE INHIBITORS	2
ANTIPARKINSON AGENTS	MONOAMINE OXIDASE B (MAO-B) INHIBITORS	2
ANTIPSYCHOTICS	1ST GENERATION/TYPICAL	10
ANTIPSYCHOTICS	2ND GENERATION/ATYPICAL	9
ANTIPSYCHOTICS	TREATMENT-RESISTANT	1
ANTISPASTICITY AGENTS	NO USP CLASS	5
ANTIVIRALS	ANTI-CYTOMEGALOVIRUS (CMV) AGENTS	4
ANTIVIRALS	ANTI-HIV AGENTS, NON-NUCLEOSIDE REVERSE TRANSCRIPTASE INHIBITORS	5
ANTIVIRALS	ANTI-HIV AGENTS, NUCLEOSIDE AND NUCLEOTIDE REVERSE TRANSCRIPTASE INHIBITORS	11
ANTIVIRALS	ANTI-HIV AGENTS, OTHER	3
ANTIVIRALS	ANTI-HIV AGENTS, PROTEASE INHIBITORS	9
ANTIVIRALS	ANTI-INFLUENZA AGENTS	4
ANTIVIRALS	ANTIHEPATITIS AGENTS	12
ANTIVIRALS	ANTIHERPETIC AGENTS	6
ANXIOLYTICS	ANXIOLYTICS, OTHER	4
ANXIOLYTICS	SSRIS/SNRIS (SELECTIVE SEROTONIN REUPTAKE INHIBITORS/SEROTONIN AND NOREPINEPHRINE REUPTAKE INHIBITORS)	5

CATEGORY	CLASS	SUBMISSION COUNT
BIPOLAR AGENTS	BIPOLAR AGENTS, OTHER	6
BIPOLAR AGENTS	MOOD STABILIZERS	5
BLOOD GLUCOSE REGULATORS	ANTIDIABETIC AGENTS	21
BLOOD GLUCOSE REGULATORS	GLYCEMIC AGENTS	2
BLOOD GLUCOSE REGULATORS	INSULINS	10
BLOOD PRODUCTS/MODIFIERS/VOLUME EXPANDERS	ANTICOAGULANTS	7
BLOOD PRODUCTS/MODIFIERS/VOLUME EXPANDERS	BLOOD FORMATION MODIFIERS	8
BLOOD PRODUCTS/MODIFIERS/VOLUME EXPANDERS	COAGULANTS	1
BLOOD PRODUCTS/MODIFIERS/VOLUME EXPANDERS	PLATELET MODIFYING AGENTS	8
CARDIOVASCULAR AGENTS	ALPHA-ADRENERGIC AGONISTS	6
CARDIOVASCULAR AGENTS	ALPHA-ADRENERGIC BLOCKING AGENTS	4
CARDIOVASCULAR AGENTS	ANGIOTENSIN II RECEPTOR ANTAGONISTS	8
CARDIOVASCULAR AGENTS	ANGIOTENSIN-CONVERTING ENZYME (ACE) INHIBITORS	10
CARDIOVASCULAR AGENTS	ANTIARRHYTHMICS	10
CARDIOVASCULAR AGENTS	BETA-ADRENERGIC BLOCKING AGENTS	13
CARDIOVASCULAR AGENTS	CALCIUM CHANNEL BLOCKING AGENTS	9
CARDIOVASCULAR AGENTS	CARDIOVASCULAR AGENTS, OTHER	4
CARDIOVASCULAR AGENTS	DIURETICS, CARBONIC ANHYDRASE INHIBITORS	2
CARDIOVASCULAR AGENTS	DIURETICS, LOOP	4
CARDIOVASCULAR AGENTS	DIURETICS, POTASSIUM-SPARING	4
CARDIOVASCULAR AGENTS	DIURETICS, THIAZIDE	6
CARDIOVASCULAR AGENTS	DYSLIPIDEMICS, FIBRIC ACID DERIVATIVES	2
CARDIOVASCULAR AGENTS	DYSLIPIDEMICS, HMG COA REDUCTASE INHIBITORS	7
CARDIOVASCULAR AGENTS	DYSLIPIDEMICS, OTHER	6
CARDIOVASCULAR AGENTS	VASODILATORS, DIRECT-ACTING ARTERIAL	3
CARDIOVASCULAR AGENTS	VASODILATORS, DIRECT-ACTING ARTERIAL/VENOUS	3
CENTRAL NERVOUS SYSTEM AGENTS	ATTENTION DEFICIT HYPERACTIVITY DISORDER AGENTS, AMPHETAMINES	4
CENTRAL NERVOUS SYSTEM AGENTS	ATTENTION DEFICIT HYPERACTIVITY DISORDER AGENTS, NON-AMPHETAMINES	4
CENTRAL NERVOUS SYSTEM AGENTS	CENTRAL NERVOUS SYSTEM AGENTS, OTHER	4
CENTRAL NERVOUS SYSTEM AGENTS	FIBROMYALGIA AGENTS	3
CENTRAL NERVOUS SYSTEM AGENTS	MULTIPLE SCLEROSIS AGENTS	7
DENTAL AND ORAL AGENTS	NO USP CLASS	8
DERMATOLOGICAL AGENTS	NO USP CLASS	35
ENZYME REPLACEMENT/MODIFIERS	NO USP CLASS	17
GASTROINTESTINAL AGENTS	ANTISPASMODICS, GASTROINTESTINAL	6
GASTROINTESTINAL AGENTS	GASTROINTESTINAL AGENTS, OTHER	6
GASTROINTESTINAL AGENTS	HISTAMINE2 (H2) RECEPTOR ANTAGONISTS	4
GASTROINTESTINAL AGENTS	IRRITABLE BOWEL SYNDROME AGENTS	2

CATEGORY	CLASS	SUBMISSION COUNT
GASTROINTESTINAL AGENTS	LAXATIVES	3
GASTROINTESTINAL AGENTS	PROTECTANTS	2
GASTROINTESTINAL AGENTS	PROTON PUMP INHIBITORS	6
GENITOURINARY AGENTS	ANTISPASMODICS, URINARY	7
GENITOURINARY AGENTS	BENIGN PROSTATIC HYPERTROPHY AGENTS	9
GENITOURINARY AGENTS	GENITOURINARY AGENTS, OTHER	3
GENITOURINARY AGENTS	PHOSPHATE BINDERS	3
HORMONAL AGENTS, STIMULANT/REPLACEMENT/MODIFYING (ADRENAL)	GLUCOCORTICOIDS/MINERALOCORTICOIDS	23
HORMONAL AGENTS, STIMULANT/REPLACEMENT/MODIFYING (PITUITARY)	NO USP CLASS	4
HORMONAL AGENTS, STIMULANT/REPLACEMENT/MODIFYING (PROSTAGLANDINS)	NO USP CLASS	1
HORMONAL AGENTS, STIMULANT/REPLACEMENT/MODIFYING (SEX HORMONES/MODIFIERS)	ANABOLIC STEROIDS	2
HORMONAL AGENTS, STIMULANT/REPLACEMENT/MODIFYING (SEX HORMONES/MODIFIERS)	ANDROGENS	4
HORMONAL AGENTS, STIMULANT/REPLACEMENT/MODIFYING (SEX HORMONES/MODIFIERS)	ESTROGENS	6
HORMONAL AGENTS, STIMULANT/REPLACEMENT/MODIFYING (SEX HORMONES/MODIFIERS)	PROGESTINS	5
HORMONAL AGENTS, STIMULANT/REPLACEMENT/MODIFYING (SEX HORMONES/MODIFIERS)	SELECTIVE ESTROGEN RECEPTOR MODIFYING AGENTS	1
HORMONAL AGENTS, STIMULANT/REPLACEMENT/MODIFYING (THYROID)	NO USP CLASS	3
HORMONAL AGENTS, SUPPRESSANT (ADRENAL)	NO USP CLASS	1
HORMONAL AGENTS, SUPPRESSANT (PARATHYROID)	NO USP CLASS	1
HORMONAL AGENTS, SUPPRESSANT (PITUITARY)	NO USP CLASS	9
HORMONAL AGENTS, SUPPRESSANT (SEX HORMONES/MODIFIERS)	ANTIANDROGENS	5
HORMONAL AGENTS, SUPPRESSANT (THYROID)	ANTITHYROID AGENTS	2
IMMUNOLOGICAL AGENTS	IMMUNE SUPPRESSANTS	24
IMMUNOLOGICAL AGENTS	IMMUNIZING AGENTS, PASSIVE	4
IMMUNOLOGICAL AGENTS	IMMUNOMODULATORS	10
INFLAMMATORY BOWEL DISEASE AGENTS	AMINOSALICYLATES	3
INFLAMMATORY BOWEL DISEASE AGENTS	GLUCOCORTICOIDS	5
INFLAMMATORY BOWEL DISEASE AGENTS	SULFONAMIDES	1
METABOLIC BONE DISEASE AGENTS	NO USP CLASS	15
OPHTHALMIC AGENTS	OPHTHALMIC PROSTAGLANDIN AND PROSTAMIDE ANALOGS	3
OPHTHALMIC AGENTS	OPHTHALMIC AGENTS, OTHER	4
OPHTHALMIC AGENTS	OPHTHALMIC ANTI-ALLERGY AGENTS	10
OPHTHALMIC AGENTS	OPHTHALMIC ANTI-INFLAMMATORIES	11

CATEGORY	CLASS	SUBMISSION COUNT
OPHTHALMIC AGENTS	OPHTHALMIC ANTIGLAUCOMA AGENTS	14
OTIC AGENTS	NO USP CLASS	6
RESPIRATORY TRACT AGENTS	ANTI-INFLAMMATORIES, INHALED CORTICOSTEROIDS	6
RESPIRATORY TRACT AGENTS	ANTIHISTAMINES	11
RESPIRATORY TRACT AGENTS	ANTILEUKOTRIENES	3
RESPIRATORY TRACT AGENTS	BRONCHODILATORS, ANTICHOLINERGIC	2
RESPIRATORY TRACT AGENTS	BRONCHODILATORS, PHOSPHODIESTERASE INHIBITORS (XANTHINES)	3
RESPIRATORY TRACT AGENTS	BRONCHODILATORS, SYMPATHOMIMETIC	10
RESPIRATORY TRACT AGENTS	MAST CELL STABILIZERS	1
RESPIRATORY TRACT AGENTS	PULMONARY ANTIHYPERTENSIVES	6
RESPIRATORY TRACT AGENTS	RESPIRATORY TRACT AGENTS, OTHER	5
SKELETAL MUSCLE RELAXANTS	NO USP CLASS	6
SLEEP DISORDER AGENTS	GABA RECEPTOR MODULATORS	3
SLEEP DISORDER AGENTS	SLEEP DISORDERS, OTHER	5
THERAPEUTIC NUTRIENTS/MINERALS/ELECTROLYTES	ELECTROLYTE/MINERAL MODIFIERS	6
THERAPEUTIC NUTRIENTS/MINERALS/ELECTROLYTES	ELECTROLYTE/MINERAL REPLACEMENT	4

Appendix B-4. GMC Plan Designs Considered

Appendix B-4

General Notes

1. Deductibles do not apply to pharmacy benefits except for the HDHPs.
2. In accordance with the ACA, all copays and coinsurance apply to the MOOP.
3. For copay plans, it is assumed that there would be no additional physician copay for inpatient and outpatient services.
4. Mail Order copays are assumed to be 2.5 Retail for Generic and Brand Formulary drugs and 3 times Retail for Brand Non-Formulary and Specialty.
5. All copay plans have no individual or family deductible.
6. Allowed amount is normalized to $492 in the Wakely model for purposes of estimating the AV. This is based on the prior GMC analysis and will be updated as the 2017 cost projections are refined.
7. For the HSA contributions, the impact to the AV is determined looking at the one year of contribution in isolation. That is, any carryover from prior years is not considered.
8. Plan designs are only for discussion purposes. Actual plan designs could vary, potentially materially, once all assumptions and input is incorproated.

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	Copay 80% Option 1			Option 2			Option 3		
Wakely AV	**81.5%**			**80.8%**			**80.6%**		
Federal AV (2015 AVC)	**72.2%**			**70.7%**			**70.4%**		
Deductible	*In-Network*	*Out-of-Network*	*Out-of-Area*	*In-Network*	*Out-of-Network*	*Out-of-Area*	*In-Network*	*Out-of-Network*	*Out-of-Area*
Individual	$0	$0	$0	$0	$0	$0	$0	$0	$0
Family	$0	$0	$0	$0	$0	$0	$0	$0	$0
MOOP	*In-Network*	*Out-of-Network*	*Out-of-Area*	*In-Network*	*Out-of-Network*	*Out-of-Area*	*In-Network*	*Out-of-Network*	*Out-of-Area*
Individual	$6,600	$0	$0	$6,000	$0	$0	$5,600	$0	$0
Family	$13,200	$0	$0	$12,000	$0	$0	$11,200	$0	$0
Medical/Rx Deductibles Combined?	No			No			No		
Medical/Rx MOOPs Combined?	Yes			Yes			Yes		
	Plan Coinsurance	Copayments	Deductible Applies?	Plan Coinsurance	Copayments	Deductible Applies?	Plan Coinsurance	Copayments	Deductible Applies?
Inpatient Hospital									
Medical	0%	$ 3,500.00	N	0%	$ 3,750.00	N	0%	$ 4,000.00	N
Surgical	0%	$ 3,500.00	N	0%	$ 3,750.00	N	0%	$ 4,000.00	N
Maternity	0%	$ 3,500.00	N	0%	$ 3,750.00	N	0%	$ 4,000.00	N
Mental Health	0%	$ 3,500.00	N	0%	$ 3,750.00	N	0%	$ 4,000.00	N
Chemical Dependency	0%	$ 3,500.00	N	0%	$ 3,750.00	N	0%	$ 4,000.00	N
Skilled Nursing Facility	0%	$ 3,500.00	N	0%	$ 3,750.00	N	0%	$ 4,000.00	N
Outpatient Hospital									
Emergency Room	0%	$ 1,200.00	N	0%	$ 1,400.00	N	0%	$ 1,600.00	N
Ambulatory Surgery	0%	$ 850.00	N	0%	$ 1,000.00	N	0%	$ 1,250.00	N
Radiology	0%	$ 375.00	N	0%	$ 425.00	N	0%	$ 500.00	N
Laboratory	0%	$ 275.00	N	0%	$ 300.00	N	0%	$ 350.00	N
Maternity Visits	0%	$ 250.00	N	0%	$ 275.00	N	0%	$ 350.00	N
Mental Health	0%	$ 55.00	N	0%	$ 70.00	N	0%	$ 70.00	N
Chemical Dependency	0%	$ 55.00	N	0%	$ 70.00	N	0%	$ 70.00	N
Inpatient Physician									
Medical/Surgical	100%	$ -	N	100%	$ -	N	100%	$ -	N
Mental Health	100%	$ -	N	100%	$ -	N	100%	$ -	N
Chemical Dependency	100%	$ -	N	100%	$ -	N	100%	$ -	N
Maternity	100%	$ -	N	100%	$ -	N	100%	$ -	N
Outpatient Physician									
Physician Office Visits	0%	$ 55.00	N	0%	$ 70.00	N	0%	$ 70.00	N
Specialist Office Visits	0%	$ 65.00	N	0%	$ 80.00	N	0%	$ 80.00	N
Mental Health	0%	$ 55.00	N	0%	$ 70.00	N	0%	$ 70.00	N
Chemical Dependency	0%	$ 55.00	N	0%	$ 70.00	N	0%	$ 70.00	N
Preventive Care									
Physical Exams. Etc.	100%	$ -	N	100%	$ -	N	100%	$ -	N
Outpatient Miscellaneous									
Ambulance	0%	$ 600.00	N	0%	$ 650.00	N	0%	$ 700.00	N
Dialysis	0%	$ 70.00	N	0%	$ 80.00	N	0%	$ 90.00	N
DME	0%	$ 70.00	N	0%	$ 80.00	N	0%	$ 90.00	N
Physical Therapy	0%	$ 65.00	N	0%	$ 70.00	N	0%	$ 80.00	N
Radiology/X-Ray	0%	$ 70.00	N	0%	$ 80.00	N	0%	$ 90.00	N
Rx Inputs									
Member Coinsurance	Retail	Mail Order		Retail	Mail Order		Retail	Mail Order	
Generic	0%	0%		0%	0%		0%	0%	
Brand Formulary	0%	0%		0%	0%		0%	0%	
Brand Non Formulary	0%	0%		0%	0%		0%	0%	
Specialty	0%	0%		0%	0%		0%	0%	
Member Copay	Retail	Mail Order		Retail	Mail Order		Retail	Mail Order	
Generic	$ 20.00	$ 50.00		$ 25.00	$ 62.50		$ 25.00	$ 62.50	
Brand Formulary	$ 40.00	$ 100.00		$ 50.00	$ 125.00		$ 60.00	$ 150.00	
Brand Non Formulary	$ 75.00	$ 225.00		$ 85.00	$ 255.00		$ 95.00	$ 285.00	
Specialty	$ 100.00	$ 300.00		$ 110.00	$ 330.00		$ 120.00	$ 360.00	

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	Option 1			Copay 87% Option 2			Option 3		
Wakely AV	88.2%			88.1%			87.6%		
Federal AV (2015 AVC)	79.3%			78.3%			77.2%		
Deductible	*In-Network*	*Out-of-Network*	*Out-of-Area*	*In-Network*	*Out-of-Network*	*Out-of-Area*	*In-Network*	*Out-of-Network*	*Out-of-Area*
Individual	$0	$0	$0	$0	$0	$0	$0	$0	$0
Family	$0	$0	$0	$0	$0	$0	$0	$0	$0
MOOP	*In-Network*	*Out-of-Network*	*Out-of-Area*	*In-Network*	*Out-of-Network*	*Out-of-Area*	*In-Network*	*Out-of-Network*	*Out-of-Area*
Individual	$6,600	$0	$0	$5,200	$0	$0	$4,500	$0	$0
Family	$13,200	$0	$0	$10,400	$0	$0	$9,000	$0	$0
Medical/Rx Deductibles Combined?	No			No			No		
Medical/Rx MOOPs Combined?	Yes			Yes			Yes		
	Plan Coinsurance	Copayments	Deductible Applies?	Plan Coinsurance	Copayments	Deductible Applies?	Plan Coinsurance	Copayments	Deductible Applies?
Inpatient Hospital									
Medical	0%	$ 750.00	N	0%	$ 750.00	N	0%	$ 1,000.00	Y
Surgical	0%	$ 750.00	N	0%	$ 750.00	N	0%	$ 1,000.00	Y
Maternity	0%	$ 750.00	N	0%	$ 750.00	N	0%	$ 1,000.00	Y
Mental Health	0%	$ 750.00	N	0%	$ 750.00	N	0%	$ 1,000.00	Y
Chemical Dependency	0%	$ 750.00	N	0%	$ 750.00	N	0%	$ 1,000.00	Y
Skilled Nursing Facility	0%	$ 750.00	N	0%	$ 750.00	N	0%	$ 1,000.00	Y
Outpatient Hospital									
Emergency Room	0%	$ 300.00	N	0%	$ 300.00	N	0%	$ 400.00	Y
Ambulatory Surgery	0%	$ 200.00	N	0%	$ 225.00	N	0%	$ 250.00	Y
Radiology	0%	$ 200.00	N	0%	$ 200.00	N	0%	$ 225.00	Y
Laboratory	0%	$ 175.00	N	0%	$ 150.00	N	0%	$ 175.00	Y
Maternity Visits	0%	$ 175.00	N	0%	$ 150.00	N	0%	$ 175.00	Y
Mental Health	0%	$ 40.00	N	0%	$ 65.00	N	0%	$ 75.00	Y
Chemical Dependency	0%	$ 40.00	N	0%	$ 65.00	N	0%	$ 75.00	Y
Inpatient Physician									
Medical/Surgical	100%	$ -	N	100%	$ -	N	100%	$ -	Y
Mental Health	100%	$ -	N	100%	$ -	N	100%	$ -	Y
Chemical Dependency	100%	$ -	N	100%	$ -	N	100%	$ -	Y
Maternity	100%	$ -	N	100%	$ -	N	100%	$ -	Y
Outpatient Physician									
Physician Office Visits	0%	$ 40.00	N	0%	$ 65.00	N	0%	$ 75.00	N
Specialist Office Visits	0%	$ 50.00	N	0%	$ 75.00	N	0%	$ 85.00	N
Mental Health	0%	$ 40.00	N	0%	$ 65.00	N	0%	$ 75.00	N
Chemical Dependency	0%	$ 40.00	N	0%	$ 65.00	N	0%	$ 75.00	N
Preventive Care									
Physical Exams. Etc.	100%	$ -	N	100%	$ -	N	100%	$ -	N
Outpatient Miscellaneous									
Ambulance	0%	$ 300.00	N	0%	$ 300.00	N	0%	$ 350.00	N
Dialysis	0%	$ 60.00	N	0%	$ 85.00	N	0%	$ 95.00	N
DME	0%	$ 60.00	N	0%	$ 85.00	N	0%	$ 95.00	N
Physical Therapy	0%	$ 50.00	N	0%	$ 75.00	N	0%	$ 85.00	N
Radiology/X-Ray	0%	$ 60.00	N	0%	$ 85.00	N	0%	$ 95.00	N
Rx Inputs									
Member Coinsurance	Retail	Mail Order		Retail	Mail Order		Retail	Mail Order	
Generic	0%	0%		0%	0%		0%	0%	
Brand Formulary	0%	0%		0%	0%		0%	0%	
Brand Non Formulary	0%	0%		0%	0%		0%	0%	
Specialty	0%	0%		0%	0%		0%	0%	
Member Copay	Retail	Mail Order		Retail	Mail Order		Retail	Mail Order	
Generic	$ 10.00	$ 25.00		$ 12.00	$ 30.00		$ 15.00	$ 37.50	
Brand Formulary	$ 20.00	$ 50.00		$ 25.00	$ 62.50		$ 30.00	$ 75.00	
Brand Non Formulary	$ 60.00	$ 180.00		$ 75.00	$ 225.00		$ 80.00	$ 240.00	
Specialty	$ 75.00	$ 225.00		$ 100.00	$ 300.00		$ 110.00	$ 330.00	

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	Option 1			Copay 94% Option 2			Option 3		
Wakely AV	94.4%			94.6%			94.9%		
Federal AV (2015 AVC)	86.3%			84.9%			84.9%		
Deductible	*In-Network*	*Out-of-Network*	*Out-of-Area*	*In-Network*	*Out-of-Network*	*Out-of-Area*	*In-Network*	*Out-of-Network*	*Out-of-Area*
Individual	$0	$0	$0	$0	$0	$0	$0	$0	$0
Family	$0	$0	$0	$0	$0	$0	$0	$0	$0
MOOP	*In-Network*	*Out-of-Network*	*Out-of-Area*	*In-Network*	*Out-of-Network*	*Out-of-Area*	*In-Network*	*Out-of-Network*	*Out-of-Area*
Individual	$6,000	$0	$0	$3,500	$0	$0	$2,000	$0	$0
Family	$12,000	$0	$0	$7,000	$0	$0	$4,000	$0	$0
Medical/Rx Deductibles Combined?	No			No			No		
Medical/Rx MOOPs Combined?	Yes			Yes			Yes		
	Plan Coinsurance	Copayments	Deductible Applies?	Plan Coinsurance	Copayments	Deductible Applies?	Plan Coinsurance	Copayments	Deductible Applies?
Inpatient Hospital									
Medical	0%	$ 200.00	N	0%	$ 300.00	N	0%	$ 400.00	Y
Surgical	0%	$ 200.00	N	0%	$ 300.00	N	0%	$ 400.00	Y
Maternity	0%	$ 200.00	N	0%	$ 300.00	N	0%	$ 400.00	Y
Mental Health	0%	$ 200.00	N	0%	$ 300.00	N	0%	$ 400.00	Y
Chemical Dependency	0%	$ 200.00	N	0%	$ 300.00	N	0%	$ 400.00	Y
Skilled Nursing Facility	0%	$ 200.00	N	0%	$ 300.00	N	0%	$ 400.00	Y
Outpatient Hospital									
Emergency Room	0%	$ 100.00	N	0%	$ 150.00	N	0%	$ 200.00	Y
Ambulatory Surgery	0%	$ 40.00	N	0%	$ 60.00	N	0%	$ 70.00	Y
Radiology	0%	$ 50.00	N	0%	$ 60.00	N	0%	$ 80.00	Y
Laboratory	0%	$ 35.00	N	0%	$ 60.00	N	0%	$ 70.00	Y
Maternity Visits	0%	$ 35.00	N	0%	$ 60.00	N	0%	$ 70.00	Y
Mental Health	0%	$ 15.00	N	0%	$ 20.00	N	0%	$ 30.00	Y
Chemical Dependency	0%	$ 15.00	N	0%	$ 20.00	N	0%	$ 30.00	Y
Inpatient Physician									
Medical/Surgical	100%	$ -	N	100%	$ -	N	100%	$ -	Y
Mental Health	100%	$ -	N	100%	$ -	N	100%	$ -	Y
Chemical Dependency	100%	$ -	N	100%	$ -	N	100%	$ -	Y
Maternity	100%	$ -	N	100%	$ -	N	100%	$ -	Y
Outpatient Physician									
Physician Office Visits	0%	$ 15.00	N	0%	$ 20.00	N	0%	$ 30.00	N
Specialist Office Visits	0%	$ 25.00	N	0%	$ 30.00	N	0%	$ 40.00	N
Mental Health	0%	$ 15.00	N	0%	$ 20.00	N	0%	$ 30.00	N
Chemical Dependency	0%	$ 15.00	N	0%	$ 20.00	N	0%	$ 30.00	N
Preventive Care									
Physical Exams. Etc.	100%	$ -	N	100%	$ -	N	100%	$ -	N
Outpatient Miscellaneous									
Ambulance	0%	$ 65.00	N	0%	$ 80.00	N	0%	$ 125.00	N
Dialysis	0%	$ 30.00	N	0%	$ 35.00	N	0%	$ 50.00	N
DME	0%	$ 30.00	N	0%	$ 35.00	N	0%	$ 50.00	N
Physical Therapy	0%	$ 25.00	N	0%	$ 30.00	N	0%	$ 45.00	N
Radiology/X-Ray	0%	$ 30.00	N	0%	$ 35.00	N	0%	$ 50.00	N
Rx Inputs									
Member Coinsurance	Retail	Mail Order		Retail	Mail Order		Retail	Mail Order	
Generic	0%	0%		0%	0%		0%	0%	
Brand Formulary	0%	0%		0%	0%		0%	0%	
Brand Non Formulary	0%	0%		0%	0%		0%	0%	
Specialty	0%	0%		0%	0%		0%	0%	
Member Copay	Retail	Mail Order		Retail	Mail Order		Retail	Mail Order	
Generic	$ 8.00	$ 20.00		$ 12.00	$ 30.00		$ 25.00	$ 62.50	
Brand Formulary	$ 20.00	$ 50.00		$ 30.00	$ 75.00		$ 50.00	$ 125.00	
Brand Non Formulary	$ 50.00	$ 150.00		$ 80.00	$ 240.00		$ 100.00	$ 300.00	
Specialty	$ 75.00	$ 225.00		$ 110.00	$ 330.00		$ 125.00	$ 375.00	

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	Deductible 80%											
	Option 1			Option 2			Option 3			Option 4		
Wakely AV	80.8%			79.9%			79.7%			79.6%		
Federal AV (2015 AVC)	75.2%			74.8%			77.0%			77.3%		
Deductible	*In-Network*	*Out-of-Netwo*	*Out-of-Area*	*In-Network*	*Out-of-Netwo*	*Out-of-Area*	*In-Network*	*Out-of-Netwo*	*Out-of-Area*	*In-Network*	*Out-of-Netwo*	*Out-of-Area*
Individual	$1,000	$0	$0	$1,750	$0	$0	$2,500	$0	$0	$2,000	$0	$0
Family	$2,000	$0	$0	$3,500	$0	$0	$5,000	$0	$0	$4,000	$0	$0
MOOP	*In-Network*	*Out-of-Netwo*	*Out-of-Area*	*In-Network*	*Out-of-Netwo*	*Out-of-Area*	*In-Network*	*Out-of-Netwo*	*Out-of-Area*	*In-Network*	*Out-of-Netwo*	*Out-of-Area*
Individual	$6,500	$0	$0	$5,000	$0	$0	$3,500	$0	$0	$5,000	$0	$0
Family	$13,000	$0	$0	$10,000	$0	$0	$7,000	$0	$0	$10,000	$0	$0
Medical/Rx Deductibles Combined?	No			No			No			No		
Medical/Rx MOOPs Combined?	Yes			Yes			Yes			Yes		
Inpatient Hospital	Plan Coinsurance	Copayments	Deductible Applies?	Plan Coinsurance	Copayments	Deductible Applies?	Plan Coinsurance	Copayments	Deductible Applies?	Plan Coinsurance	Copayments	Deductible Applies?
Medical	80%	$ -	Y	80%	$ -	Y	80%	$ -	Y	80%	$ -	Y
Surgical	80%	$ -	Y	80%	$ -	Y	80%	$ -	Y	80%	$ -	Y
Maternity	80%	$ -	Y	80%	$ -	Y	80%	$ -	Y	80%	$ -	Y
Mental Health	80%	$ -	Y	80%	$ -	Y	80%	$ -	Y	80%	$ -	Y
Chemical Dependency	80%	$ -	Y	80%	$ -	Y	80%	$ -	Y	80%	$ -	Y
Skilled Nursing Facility	80%	$ -	Y	80%	$ -	Y	80%	$ -	Y	80%	$ -	Y
Outpatient Hospital												
Emergency Room	0%	$ 150.00	Y	0%	$ 100.00	Y	0%	$ 75.00	Y	0%	$ 100.00	Y
Ambulatory Surgery	0%	$ 200.00	Y	0%	$ 125.00	Y	0%	$ 100.00	Y	0%	$ 125.00	Y
Radiology	0%	$ 70.00	Y	0%	$ 50.00	Y	0%	$ 30.00	Y	0%	$ 50.00	Y
Laboratory	0%	$ 65.00	Y	0%	$ 45.00	Y	0%	$ 25.00	Y	0%	$ 45.00	Y
Maternity Visits	0%	$ 50.00	Y	0%	$ 35.00	Y	0%	$ 30.00	Y	0%	$ 35.00	Y
Mental Health	0%	$ 45.00	N	0%	$ 25.00	N	0%	$ 20.00	N	0%	$ 25.00	N
Chemical Dependency	0%	$ 45.00	N	0%	$ 25.00	N	0%	$ 20.00	N	0%	$ 25.00	N
Inpatient Physician												
Medical/Surgical	80%	$ -	Y	80%	$ -	Y	80%	$ -	Y	80%	$ -	Y
Mental Health	80%	$ -	Y	80%	$ -	Y	80%	$ -	Y	80%	$ -	Y
Chemical Dependency	80%	$ -	Y	80%	$ -	Y	80%	$ -	Y	80%	$ -	Y
Maternity	80%	$ -	Y	80%	$ -	Y	80%	$ -	Y	80%	$ -	Y
Outpatient Physician												
Physician Office Visits	0%	$ 45.00	N	0%	$ 25.00	N	0%	$ 20.00	N	0%	$ 25.00	N
Specialist Office Visits	0%	$ 45.00	N	0%	$ 35.00	N	0%	$ 30.00	N	0%	$ 35.00	N
Mental Health	0%	$ 45.00	N	0%	$ 25.00	N	0%	$ 20.00	N	0%	$ 25.00	N
Chemical Dependency	0%	$ 45.00	N	0%	$ 25.00	N	0%	$ 20.00	N	0%	$ 25.00	N
Preventive Care												
Physical Exams. Etc.	100%	$ -	N	100%	$ -	N	100%	$ -	N	100%	$ -	N
Outpatient Miscellaneous												
Ambulance	0%	$ 65.00	Y	0%	$ 55.00	Y	0%	$ 55.00	Y	80%	$ -	Y
Dialysis	0%	$ 40.00	Y	0%	$ 40.00	Y	0%	$ 35.00	Y	80%	$ -	Y
DME	80%	$ -	Y	80%	$ -	Y	80%	$ -	Y	80%	$ -	Y
Physical Therapy	0%	$ 40.00	N	0%	$ 40.00	N	0%	$ 35.00	N	80%	$ -	Y
Radiology/X-Ray	0%	$ 40.00	Y	0%	$ 40.00	Y	0%	$ 35.00	Y	80%	$ -	Y
Rx Inputs												
Member Coinsurance	Retail	Mail Order		Retail	Mail Order		Retail	Mail Order		Retail	Mail Order	
Generic	0%	0%		0%	0%		0%	0%		20%	20%	
Brand Formulary	0%	0%		0%	0%		0%	0%		20%	20%	
Brand Non Formulary	0%	0%		0%	0%		0%	0%		20%	20%	
Specialty	0%	0%		0%	0%		0%	0%		20%	20%	
Member Copay	Retail	Mail Order		Retail	Mail Order		Retail	Mail Order		Retail	Mail Order	
Generic	$ 12.00	$ 30.00		$ 15.00	$ 37.50		$ 18.00	$ 45.00		$ -	$ -	
Brand Formulary	$ 25.00	$ 62.50		$ 30.00	$ 75.00		$ 35.00	$ 87.50		$ -	$ -	
Brand Non Formulary	$ 50.00	$ 150.00		$ 60.00	$ 180.00		$ 70.00	$ 210.00		$ -	$ -	
Specialty	$ 75.00	$ 225.00		$ 90.00	$ 270.00		$ 100.00	$ 300.00		$ -	$ -	

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	Deductible 87%											
	Option 1			Option 2			Option 3			Option 4		
Wakely AV	87.0%			87.0%			87.2%			87.1%		
Federal AV (2015 AVC)	80.1%			82.1%			84.3%			86.4%		
Deductible	*In-Network*	*Out-of-Netwo*	*Out-of-Area*	*In-Network*	*Out-of-Netwo*	*Out-of-Area*	*In-Network*	*Out-of-Netwo*	*Out-of-Area*	*In-Network*	*Out-of-Netwo*	*Out-of-Area*
Individual	$500	$0	$0	$750	$0	$0	$1,000	$0	$0	$1,000	$0	$0
Family	$1,000	$0	$0	$1,500	$0	$0	$2,000	$0	$0	$2,000	$0	$0
MOOP	*In-Network*	*Out-of-Netwo*	*Out-of-Area*	*In-Network*	*Out-of-Netwo*	*Out-of-Area*	*In-Network*	*Out-of-Netwo*	*Out-of-Area*	*In-Network*	*Out-of-Netwo*	*Out-of-Area*
Individual	$4,500	$0	$0	$3,000	$0	$0	$2,200	$0	$0	$2,500	$0	$0
Family	$9,000	$0	$0	$6,000	$0	$0	$4,400	$0	$0	$5,000	$0	$0
Medical/Rx Deductibles Combined?	No			No			No			No		
Medical/Rx MOOPs Combined?	Yes			Yes			Yes			Yes		
	Plan Coinsurance	Copayments	Deductible Applies?	Plan Coinsurance	Copayments	Deductible Applies?	Plan Coinsurance	Copayments	Deductible Applies?	Plan Coinsurance	Copayments	Deductible Applies?
Inpatient Hospital												
Medical	90%	$ -	Y	90%	$ -	Y	90%	$ -	Y	90%	$ -	Y
Surgical	90%	$ -	Y	90%	$ -	Y	90%	$ -	Y	90%	$ -	Y
Maternity	90%	$ -	Y	90%	$ -	Y	90%	$ -	Y	90%	$ -	Y
Mental Health	90%	$ -	Y	90%	$ -	Y	90%	$ -	Y	90%	$ -	Y
Chemical Dependency	90%	$ -	Y	90%	$ -	Y	90%	$ -	Y	90%	$ -	Y
Skilled Nursing Facility	90%	$ -	Y	90%	$ -	Y	90%	$ -	Y	90%	$ -	Y
Outpatient Hospital												
Emergency Room	0%	$ 150.00	Y	0%	$ 125.00	Y	0%	$ 80.00	Y	0%	$ 100.00	Y
Ambulatory Surgery	0%	$ 175.00	Y	0%	$ 150.00	Y	0%	$ 100.00	Y	0%	$ 125.00	Y
Radiology	0%	$ 70.00	Y	0%	$ 50.00	Y	0%	$ 30.00	Y	0%	$ 50.00	Y
Laboratory	0%	$ 65.00	Y	0%	$ 45.00	Y	0%	$ 25.00	Y	0%	$ 45.00	Y
Maternity Visits	0%	$ 50.00	Y	0%	$ 35.00	Y	0%	$ 30.00	Y	0%	$ 35.00	Y
Mental Health	0%	$ 25.00	N	0%	$ 20.00	N	0%	$ 15.00	N	0%	$ 20.00	N
Chemical Dependency	0%	$ 25.00	N	0%	$ 20.00	N	0%	$ 15.00	N	0%	$ 20.00	N
Inpatient Physician												
Medical/Surgical	90%	$ -	Y	90%	$ -	Y	90%	$ -	Y	90%	$ -	Y
Mental Health	90%	$ -	Y	90%	$ -	Y	90%	$ -	Y	90%	$ -	Y
Chemical Dependency	90%	$ -	Y	90%	$ -	Y	90%	$ -	Y	90%	$ -	Y
Maternity	90%	$ -	Y	90%	$ -	Y	90%	$ -	Y	90%	$ -	Y
Outpatient Physician												
Physician Office Visits	0%	$ 25.00	N	0%	$ 20.00	N	0%	$ 15.00	N	0%	$ 20.00	N
Specialist Office Visits	0%	$ 35.00	N	0%	$ 30.00	N	0%	$ 20.00	N	0%	$ 30.00	N
Mental Health	0%	$ 25.00	N	0%	$ 20.00	N	0%	$ 15.00	N	0%	$ 20.00	N
Chemical Dependency	0%	$ 25.00	N	0%	$ 20.00	N	0%	$ 15.00	N	0%	$ 20.00	N
Preventive Care												
Physical Exams. Etc.	100%	$ -	N	100%	$ -	N	100%	$ -	N	100%	$ -	N
Outpatient Miscellaneous												
Ambulance	0%	$ 65.00	Y	0%	$ 55.00	Y	0%	$ 55.00	Y	85%	$ -	Y
Dialysis	0%	$ 40.00	Y	0%	$ 40.00	Y	0%	$ 35.00	Y	85%	$ -	Y
DME	90%	$ -	Y	90%	$ -	Y	90%	$ -	Y	85%	$ -	Y
Physical Therapy	0%	$ 40.00	N	0%	$ 40.00	N	0%	$ 35.00	N	85%	$ -	Y
Radiology/X-Ray	0%	$ 40.00	Y	0%	$ 40.00	Y	0%	$ 35.00	Y	85%	$ -	Y
Rx Inputs												
Member Coinsurance	Retail	Mail Order		Retail	Mail Order		Retail	Mail Order		Retail	Mail Order	
Generic	0%	0%		0%	0%		0%	0%		15%	15%	
Brand Formulary	0%	0%		0%	0%		0%	0%		15%	15%	
Brand Non Formulary	0%	0%		0%	0%		0%	0%		15%	15%	
Specialty	0%	0%		0%	0%		0%	0%		15%	15%	
Member Copay	Retail	Mail Order		Retail	Mail Order		Retail	Mail Order		Retail	Mail Order	
Generic	$ 8.00	$ 20.00		$ 12.00	$ 30.00		$ 15.00	$ 37.50		$ -	$ -	
Brand Formulary	$ 20.00	$ 50.00		$ 25.00	$ 62.50		$ 30.00	$ 75.00		$ -	$ -	
Brand Non Formulary	$ 35.00	$ 105.00		$ 50.00	$ 150.00		$ 60.00	$ 180.00		$ -	$ -	
Specialty	$ 60.00	$ 180.00		$ 70.00	$ 210.00		$ 90.00	$ 270.00		$ -	$ -	

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	Deductible 94%											
	Option 1			Option 2			Option 3			Option 4		
Wakely AV	93.9%			94.1%			93.9%			94.1%		
Federal AV (2015 AVC)	87.2%			90.9%			92.9%			91.4%		
Deductible	*In-Network*	*Out-of-Netwo*	*Out-of-Area*	*In-Network*	*Out-of-Netwo*	*Out-of-Area*	*In-Network*	*Out-of-Netwo*	*Out-of-Area*	*In-Network*	*Out-of-Netwo*	*Out-of-Area*
Individual	$100	$0	$0	$250	$0	$0	$400	$0	$0	$250	$0	$0
Family	$200	$0	$0	$500	$0	$0	$800	$0	$0	$500	$0	$0
MOOP	*In-Network*	*Out-of-Netwo*	*Out-of-Area*	*In-Network*	*Out-of-Netwo*	*Out-of-Area*	*In-Network*	*Out-of-Netwo*	*Out-of-Area*	*In-Network*	*Out-of-Netwo*	*Out-of-Area*
Individual	$2,000	$0	$0	$1,000	$0	$0	$600	$0	$0	$1,500	$0	$0
Family	$4,000	$0	$0	$2,000	$0	$0	$1,200	$0	$0	$3,000	$0	$0
Medical/Rx Deductibles Combined?	No			No			No			No		
Medical/Rx MOOPs Combined?	Yes			Yes			Yes			Yes		
	Plan Coinsurance	Copayments	Deductible Applies?	Plan Coinsurance	Copayments	Deductible Applies?	Plan Coinsurance	Copayments	Deductible Applies?	Plan Coinsurance	Copayments	Deductible Applies?
Inpatient Hospital												
Medical	90%	$ -	Y	90%	$ -	Y	90%	$ -	Y	90%	$ -	Y
Surgical	90%	$ -	Y	90%	$ -	Y	90%	$ -	Y	90%	$ -	Y
Maternity	90%	$ -	Y	90%	$ -	Y	90%	$ -	Y	90%	$ -	Y
Mental Health	90%	$ -	Y	90%	$ -	Y	90%	$ -	Y	90%	$ -	Y
Chemical Dependency	90%	$ -	Y	90%	$ -	Y	90%	$ -	Y	90%	$ -	Y
Skilled Nursing Facility	90%	$ -	Y	90%	$ -	Y	90%	$ -	Y	90%	$ -	Y
Outpatient Hospital												
Emergency Room	0%	$ 125.00	Y	0%	$ 100.00	Y	0%	$ 75.00	Y	0%	$ 100.00	Y
Ambulatory Surgery	0%	$ 175.00	Y	0%	$ 150.00	Y	0%	$ 100.00	Y	0%	$ 125.00	Y
Radiology	0%	$ 70.00	Y	0%	$ 50.00	Y	0%	$ 30.00	Y	0%	$ 50.00	Y
Laboratory	0%	$ 65.00	Y	0%	$ 45.00	Y	0%	$ 25.00	Y	0%	$ 45.00	Y
Maternity Visits	0%	$ 50.00	Y	0%	$ 35.00	Y	0%	$ 25.00	Y	0%	$ 35.00	Y
Mental Health	0%	$ 20.00	N	0%	$ 15.00	N	0%	$ 10.00	N	0%	$ 15.00	N
Chemical Dependency	0%	$ 20.00	N	0%	$ 15.00	N	0%	$ 10.00	N	0%	$ 15.00	N
Inpatient Physician												
Medical/Surgical	90%	$ -	Y	90%	$ -	Y	90%	$ -	Y	90%	$ -	Y
Mental Health	90%	$ -	Y	90%	$ -	Y	90%	$ -	Y	90%	$ -	Y
Chemical Dependency	90%	$ -	Y	90%	$ -	Y	90%	$ -	Y	90%	$ -	Y
Maternity	90%	$ -	Y	90%	$ -	Y	90%	$ -	Y	90%	$ -	Y
Outpatient Physician												
Physician Office Visits	0%	$ 20.00	N	0%	$ 15.00	N	0%	$ 10.00	N	0%	$ 15.00	N
Specialist Office Visits	0%	$ 25.00	N	0%	$ 25.00	N	0%	$ 20.00	N	0%	$ 25.00	N
Mental Health	0%	$ 20.00	N	0%	$ 15.00	N	0%	$ 10.00	N	0%	$ 15.00	N
Chemical Dependency	0%	$ 20.00	N	0%	$ 15.00	N	0%	$ 10.00	N	0%	$ 15.00	N
Preventive Care												
Physical Exams. Etc.	100%	$ -	N	100%	$ -	N	100%	$ -	N	100%	$ -	N
Outpatient Miscellaneous												
Ambulance	0%	$ 65.00	Y	0%	$ 55.00	Y	0%	$ 55.00	Y	90%	$ -	Y
Dialysis	0%	$ 40.00	Y	0%	$ 40.00	Y	0%	$ 30.00	Y	90%	$ -	Y
DME	100%	$ -	Y	100%	$ -	Y	100%	$ -	Y	90%	$ -	Y
Physical Therapy	0%	$ 40.00	N	0%	$ 40.00	N	0%	$ 30.00	N	90%	$ -	Y
Radiology/X-Ray	0%	$ 40.00	Y	0%	$ 40.00	Y	0%	$ 25.00	Y	90%	$ -	Y
Rx Inputs												
Member Coinsurance	Retail	Mail Order		Retail	Mail Order		Retail	Mail Order		Retail	Mail Order	
Generic	0%	0%		0%	0%		0%	0%		10%	10%	
Brand Formulary	0%	0%		0%	0%		0%	0%		10%	10%	
Brand Non Formulary	0%	0%		0%	0%		0%	0%		10%	10%	
Specialty	0%	0%		0%	0%		0%	0%		10%	10%	
Member Copay	Retail	Mail Order		Retail	Mail Order		Retail	Mail Order		Retail	Mail Order	
Generic	$ 8.00	$ 20.00		$ 10.00	$ 25.00		$ 12.00	$ 30.00		$ -	$ -	
Brand Formulary	$ 15.00	$ 37.50		$ 20.00	$ 50.00		$ 25.00	$ 62.50		$ -	$ -	
Brand Non Formulary	$ 35.00	$ 105.00		$ 50.00	$ 150.00		$ 55.00	$ 165.00		$ -	$ -	
Specialty	$ 60.00	$ 180.00		$ 70.00	$ 210.00		$ 80.00	$ 240.00		$ -	$ -	

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	HDHP 80%			HDHP 80%			HDHP 87%			HDHP 94%		
Annual HSA Contribution	$0.00			$120.00			$840.00			$1,800.00		
Wakely AV	78.5%			79.9%			86.7%			93.9%		
Federal AV (2015 AVC)	71.1%			73.0%			81.1%			88.6%		
Deductible	*In-Network*	*Out-of-Network*	*Out-of-Area*	*In-Network*	*Out-of-Network*	*Out-of-Area*	*In-Network*	*Out-of-Network*	*Out-of-Area*	*In-Network*	*Out-of-Network*	*Out-of-Area*
Individual	$2,000	$0	$0	$2,000	$0	$0	$2,000	$0	$0	$2,000	$0	$0
Family	$4,000	$0	$0	$4,000	$0	$0	$4,000	$0	$0	$4,000	$0	$0
Medical/Rx Deductibles Combined?	Yes			Yes			Yes			Yes		
Medical/Rx MOOPs Combined?	Yes			Yes			Yes			Yes		
MOOP	*In-Network*	*Out-of-Network*	*Out-of-Area*	*In-Network*	*Out-of-Network*	*Out-of-Area*	*In-Network*	*Out-of-Network*	*Out-of-Area*	*In-Network*	*Out-of-Network*	*Out-of-Area*
Individual	$4,250	$0	$0	$4,250	$0	$0	$4,250	$0	$0	$4,250	$0	$0
Family	$8,500	$0	$0	$8,500	$0	$0	$8,500	$0	$0	$8,500	$0	$0
	Plan Coinsurance	Copayments	Deductible Applies?	Plan Coinsurance	Copayments	Deductible Applies?	Plan Coinsurance	Copayments	Deductible Applies?	Plan Coinsurance	Copayments	Deductible Applies?
Inpatient Hospital												
Medical	85%		Y	85%		Y	85%	$ -	Y	85%		Y
Surgical	85%		Y	85%		Y	85%	$ -	Y	85%		Y
Maternity	85%		Y	85%		Y	85%	$ -	Y	85%		Y
Mental Health	85%		Y	85%		Y	85%	$ -	Y	85%		Y
Chemical Dependency	85%		Y	85%		Y	85%	$ -	Y	85%		Y
Skilled Nursing Facility	85%		Y	85%		Y	85%	$ -	Y	85%		Y
Outpatient Hospital												
Emergency Room		$ 65.00	Y		$ 65.00	Y		$ 65.00	Y		$ 65.00	Y
Ambulatory Surgery	85%		Y	85%		Y	85%		Y	85%		Y
Radiology	85%		Y	85%		Y	85%		Y	85%		Y
Laboratory	85%		Y	85%		Y	85%		Y	85%		Y
Maternity Visits	85%		Y	85%		Y	85%		Y	85%		Y
Mental Health		$ 20.00	Y		$ 20.00	Y		$ 20.00	Y		$ 20.00	Y
Chemical Dependency		$ 20.00	Y		$ 20.00	Y		$ 20.00	Y		$ 20.00	Y
Inpatient Physician												
Medical/Surgical	85%		Y	85%		Y	85%	$ -	Y	85%		Y
Mental Health	85%		Y	85%		Y	85%	$ -	Y	85%		Y
Chemical Dependency	85%		Y	85%		Y	85%	$ -	Y	85%		Y
Maternity	85%		Y	85%		Y	85%	$ -	Y	85%		Y
Outpatient Physician												
Physician Office Visits		$ 20.00	Y		$ 20.00	Y		$ 20.00	Y		$ 20.00	Y
Specialist Office Visits		$ 30.00	Y		$ 30.00	Y		$ 30.00	Y		$ 30.00	Y
Mental Health		$ 20.00	Y		$ 20.00	Y		$ 20.00	Y		$ 20.00	Y
Chemical Dependency		$ 20.00	Y		$ 20.00	Y		$ 20.00	Y		$ 20.00	Y
Preventive Care												
Physical Exams. Etc.	100%		N	100%		N	100%	$ -	N	100%		N
Outpatient Miscellaneous												
Ambulance	85%		Y	85%		Y	85%		Y	85%		Y
Dialysis	85%		Y	85%		Y	85%		Y	85%		Y
DME	85%		Y	85%		Y	85%		Y	85%		Y
Physical Therapy		$ 30.00	Y		$ 30.00	Y		$ 30.00	Y		$ 30.00	Y
Radiology/X-Ray	85%		Y	85%		Y	85%		Y	85%		Y
Rx Inputs												
Plan Coinsurance	Retail	Mail Order		Retail	Mail Order		Retail	Mail Order		Retail	Mail Order	
Generic												
Brand Formulary												
Brand Non Formulary												
Specialty												
Member Copay	Retail	Mail Order		Retail	Mail Order		Retail	Mail Order		Retail	Mail Order	
Generic	$ 10.00	$ 25.00		$ 10.00	$ 25.00		$ 10.00	$ 25.00		$ 10.00	$ 25.00	
Brand Formulary	$ 20.00	$ 50.00		$ 20.00	$ 50.00		$ 20.00	$ 50.00		$ 20.00	$ 50.00	
Brand Non Formulary	$ 50.00	$ 150.00		$ 50.00	$ 150.00		$ 50.00	$ 150.00		$ 50.00	$ 150.00	
Specialty	$ 75.00	$ 225.00		$ 75.00	$ 225.00		$ 75.00	$ 225.00		$ 75.00	$ 225.00	

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	HDHP BCBSVT 80%			HDHP BCBSVT 80%			HDHP BCBSVT 87%			HDHP BCBSVT 94%		
Annual HSA Contribution	$0.00			$100.00			$720.00			$1,680.00		
Wakely AV	79.5%			80.7%			86.7%			94.3%		
Federal AV (2015 AVC)	75.2%			76.7%			84.6%			93.8%		
Deductible	*In-Network*	*Out-of-Network*	*Out-of-Area*	*In-Network*	*Out-of-Network*	*Out-of-Area*	*In-Network*	*Out-of-Network*	*Out-of-Area*	*In-Network*	*Out-of-Network*	*Out-of-Area*
Individual	$2,500	$0	$0	$2,500	$0	$0	$2,500	$0	$0	$2,500	$0	$0
Family	$5,000	$0	$0	$5,000	$0	$0	$5,000	$0	$0	$5,000	$0	$0
Medical/Rx Deductibles Combined?	Yes			Yes			Yes			Yes		
Medical/Rx MOOPs Combined?	Yes			Yes			Yes			Yes		
MOOP	*In-Network*	*Out-of-Network*	*Out-of-Area*	*In-Network*	*Out-of-Network*	*Out-of-Area*	*In-Network*	*Out-of-Network*	*Out-of-Area*	*In-Network*	*Out-of-Network*	*Out-of-Area*
Individual	$2,500	$0	$0	$2,500	$0	$0	$2,500	$0	$0	$2,500	$0	$0
Family	$5,000	$0	$0	$5,000	$0	$0	$5,000	$0	$0	$5,000	$0	$0
	Plan Coinsurance	**Copayments**	**Deductible Applies?**	**Plan Coinsurance**	**Copayments**	**Deductible Applies?**	**Plan Coinsurance**	**Copayments**	**Deductible Applies?**	**Plan Coinsurance**	**Copayments**	**Deductible Applies?**
Inpatient Hospital												
Medical	100%		Y	100%		Y	100%		Y	100%		Y
Surgical	100%		Y	100%		Y	100%		Y	100%		Y
Maternity	100%		Y	100%		Y	100%		Y	100%		Y
Mental Health	100%		Y	100%		Y	100%		Y	100%		Y
Chemical Dependency	100%		Y	100%		Y	100%		Y	100%		Y
Skilled Nursing Facility	100%		Y	100%		Y	100%		Y	100%		Y
Outpatient Hospital												
Emergency Room	100%		Y	100%		Y	100%		Y	100%		Y
Ambulatory Surgery	100%		Y	100%		Y	100%		Y	100%		Y
Radiology	100%		Y	100%		Y	100%		Y	100%		Y
Laboratory	100%		Y	100%		Y	100%		Y	100%		Y
Maternity Visits	100%		Y	100%		Y	100%		Y	100%		Y
Mental Health	100%		Y	100%		Y	100%		Y	100%		Y
Chemical Dependency	100%		Y	100%		Y	100%		Y	100%		Y
Inpatient Physician												
Medical/Surgical	100%		Y	100%		Y	100%		Y	100%		Y
Mental Health	100%		Y	100%		Y	100%		Y	100%		Y
Chemical Dependency	100%		Y	100%		Y	100%		Y	100%		Y
Maternity	100%		Y	100%		Y	100%		Y	100%		Y
Outpatient Physician												
Physician Office Visits	100%		Y	100%		Y	100%		Y	100%		Y
Specialist Office Visits	100%		Y	100%		Y	100%		Y	100%		Y
Mental Health	100%		Y	100%		Y	100%		Y	100%		Y
Chemical Dependency	100%		Y	100%		Y	100%		Y	100%		Y
Preventive Care												
Physical Exams. Etc.	100%		N	100%		N	100%		N	100%		N
Outpatient Miscellaneous												
Ambulance	100%		Y	100%		Y	100%		Y	100%		Y
Dialysis	100%		Y	100%		Y	100%		Y	100%		Y
DME	100%		Y	100%		Y	100%		Y	100%		Y
Physical Therapy	100%		Y	100%		Y	100%		Y	100%		Y
Radiology/X-Ray	100%		Y	100%		Y	100%		Y	100%		Y
Rx Inputs												
Plan Coinsurance	**Retail**	**Mail Order**		**Retail**	**Mail Order**		**Retail**	**Mail Order**		**Retail**	**Mail Order**	
Generic	100%	100%		100%	100%		100%	100%		100%	100%	
Brand Formulary	100%	100%		100%	100%		100%	100%		100%	100%	
Brand Non Formulary	100%	100%		100%	100%		100%	100%		100%	100%	
Specialty	100%	100%		100%	100%		100%	100%		100%	100%	
Member Copay	**Retail**	**Mail Order**		**Retail**	**Mail Order**		**Retail**	**Mail Order**		**Retail**	**Mail Order**	
Generic	$ -	$ -		$ -	$ -		$ -	$ -		$ -	$ -	
Brand Formulary	$ -	$ -		$ -	$ -		$ -	$ -		$ -	$ -	
Brand Non Formulary	$ -	$ -		$ -	$ -		$ -	$ -		$ -	$ -	
Specialty	$ -	$ -		$ -	$ -		$ -	$ -		$ -	$ -	

Appendix B-5. Presentation to the Green Mountain Care Board
December 4, 2014

Green Mountain Care: Benefits Background Information

Robin J. Lunge, J.D., MHCDS
Director of Health Care Reform, AOA

Devon J. Green, J.D.
Special Counsel on HCR, AOA

December 4, 2014

VERMONT
HEALTH CARE REFORM

Discussion for Today

- Background on Green Mountain Care
- GMC's legal parameters for the benefit plan
- Background on benefits

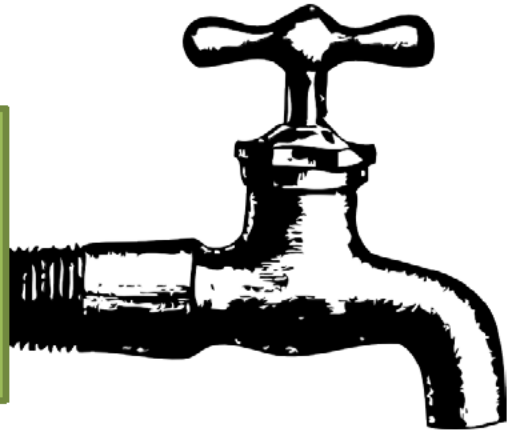
BACKGROUND ON GREEN MOUNTAIN CARE

Health Care Reform Goals: Why Reform?

Four Design & Implementation Zones

Green Mountain Care
- Who's covered?
- For what benefits/services?

Green Mountain Care
- What is the governance?
- What is the business model?
- Who does what?



Payments for services
- What methodology?
- What level?
- How are they inflated over time?

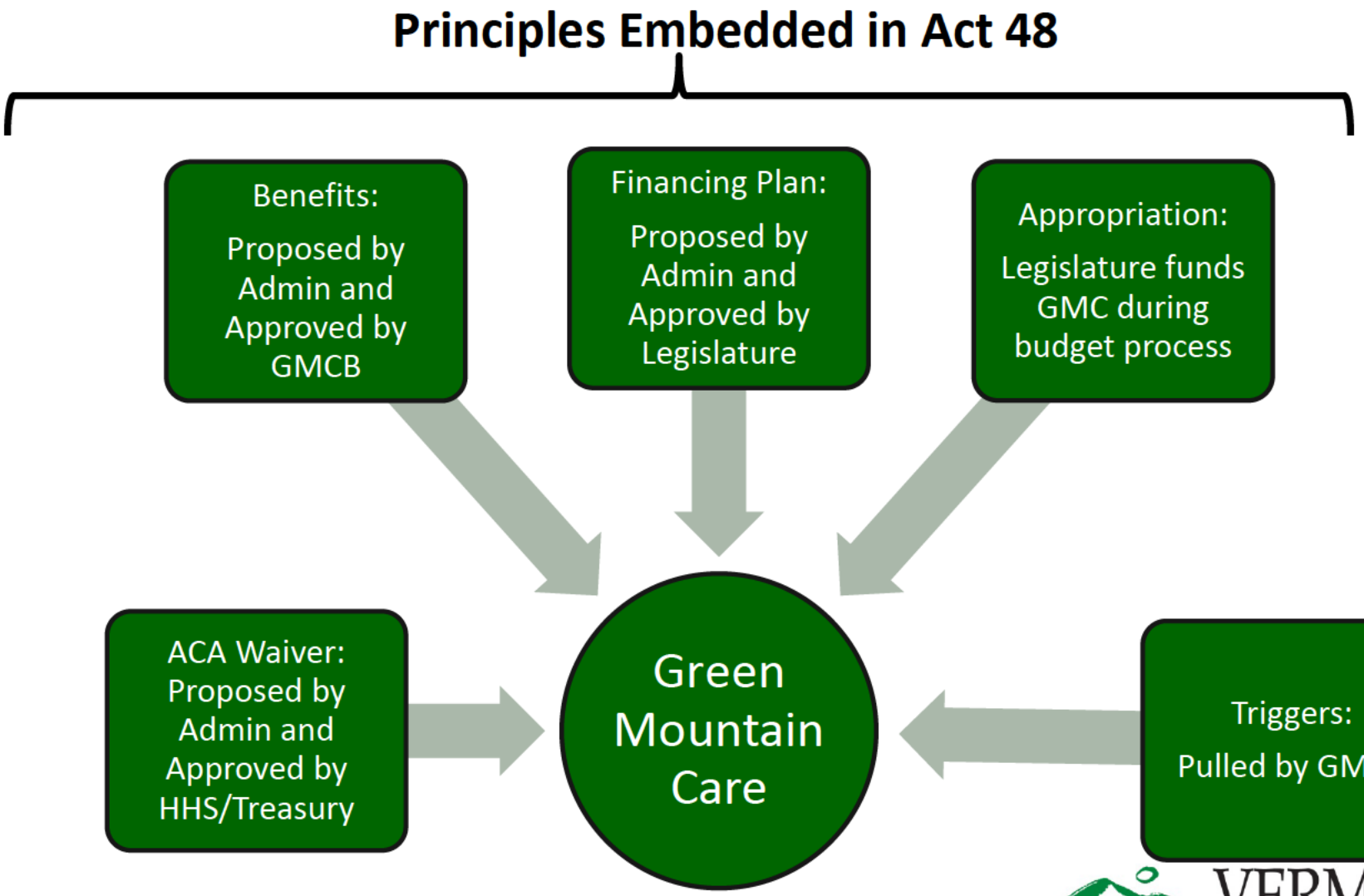
Revenues in
- What sources?
- How do they grow over time?

Informs revenue needs

GMC: Who is covered?

- All Vermonters by virtue of residency
  - Primary for most
  - Secondary for those with other coverage
- Secondary coverage examples:
  - Medicare – Seniors are still covered by Medicare as they are now.
  - Some employees who chose employer-sponsored coverage
- Primary benefits determine extent and cost of the secondary coverage

The Process: What Needs to Happen?



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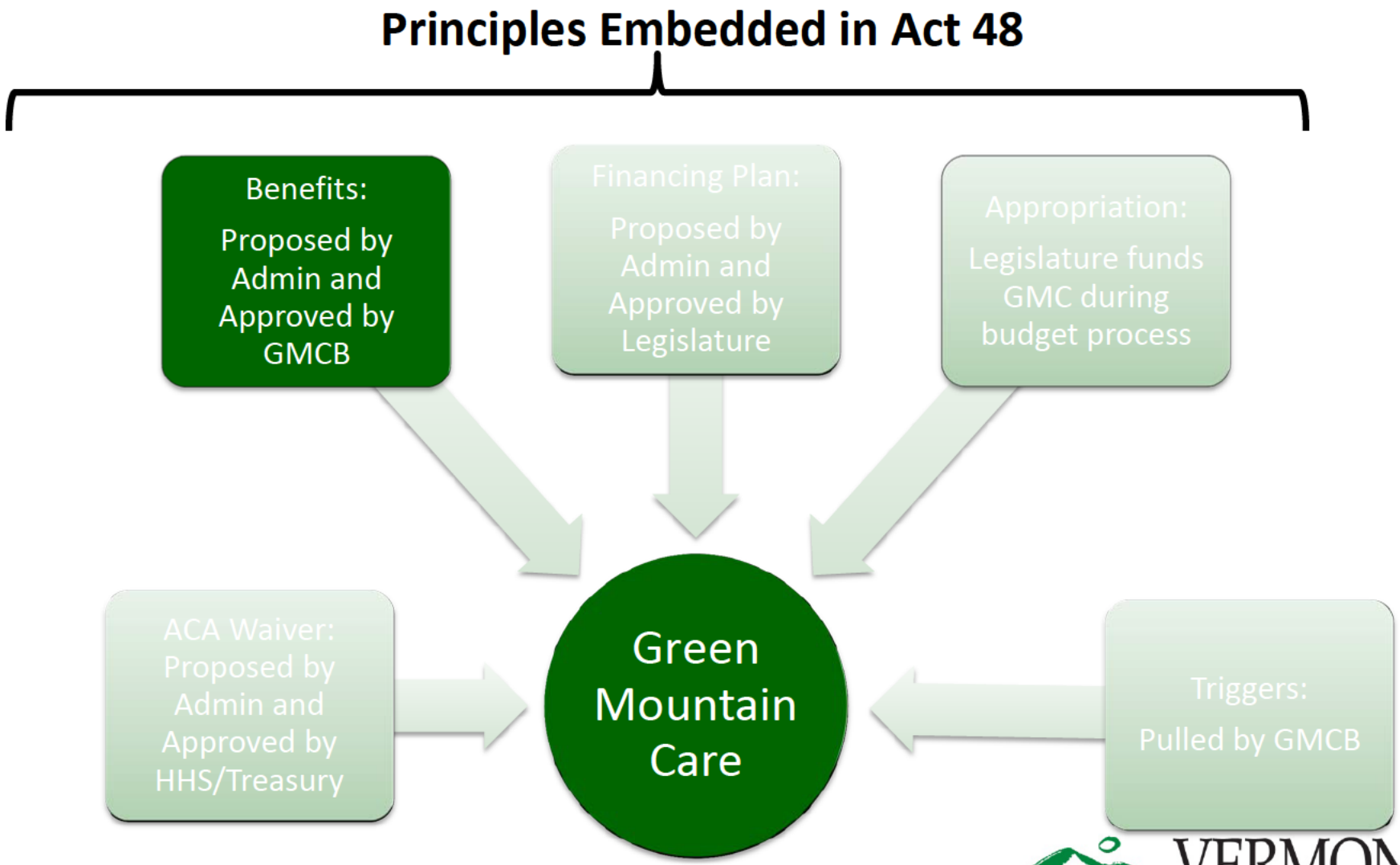
HEALTH CARE REFORM

GMCB Role by Statute

- Defines Green Mountain Care benefits
- Evaluates GMC planning based on the “triggers”
- Proposes annual GMC budget after implementation

The Process: What Needs to Happen?

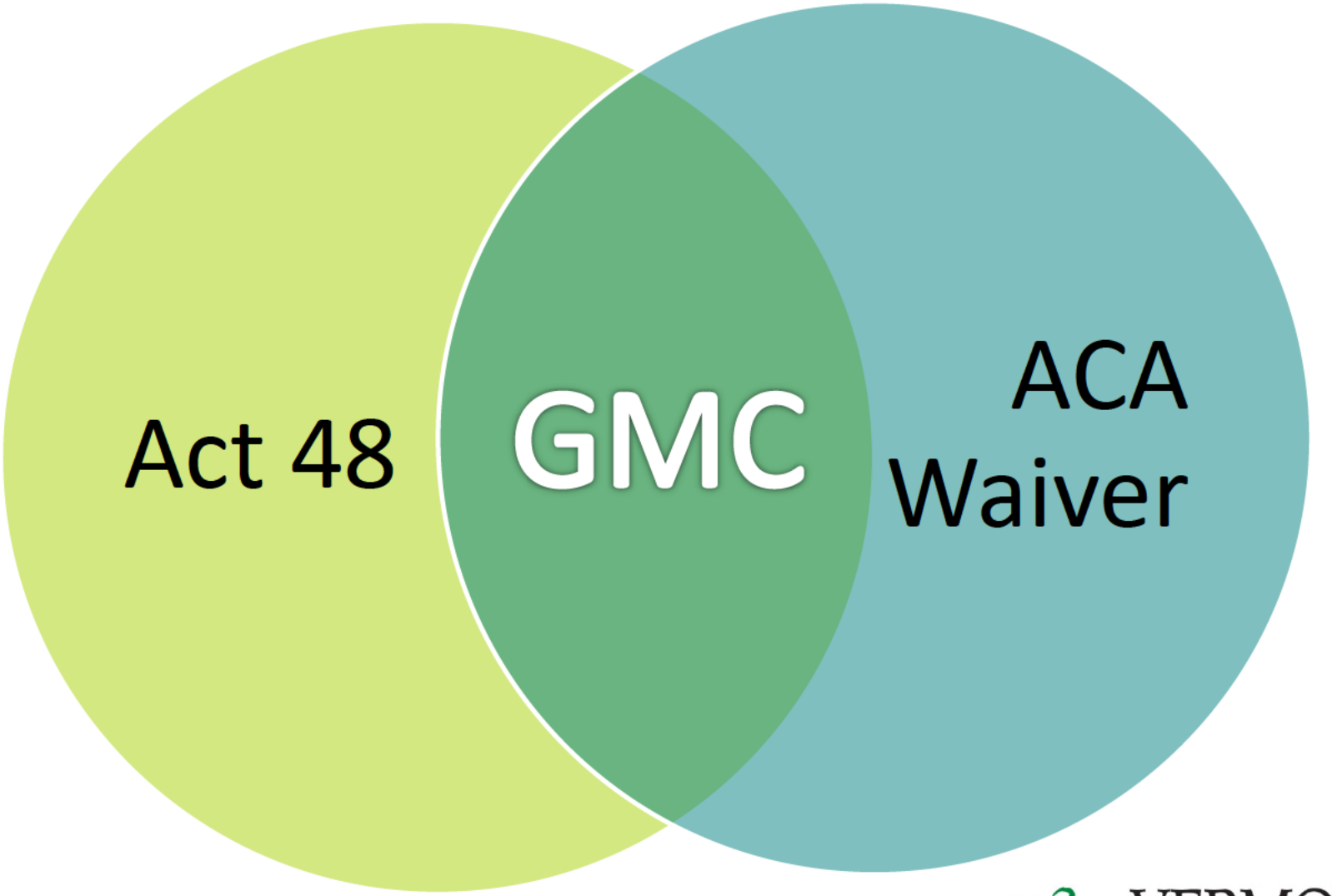


GMCB Role by Statute

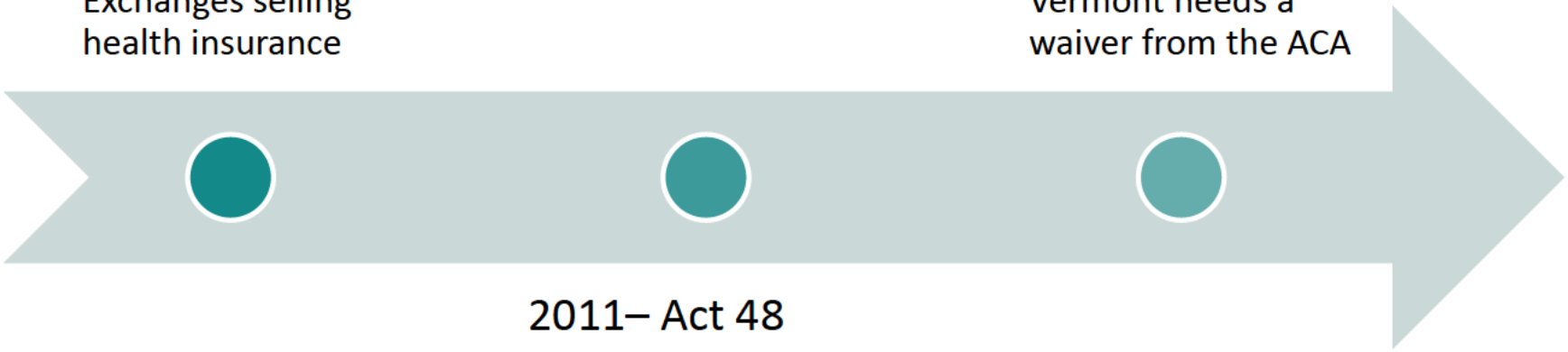
- **Defines Green Mountain Care benefits**
  - Today begins this process with background information on what people have today and the legal parameters going forward.
- Evaluates GMC planning based on the "triggers"
- Proposes annual GMC budget after implementation

GMC'S LEGAL PARAMETERS FOR BENEFIT PLAN

GMC's Legal Parameters



GMC's Legal Parameters



Review of Waivers

	Medicaid Waiver (1115)	ACA Waiver (1332)	All-Payer Waiver (1115A)
What is it?	Allows VT to run Medicaid as a managed care organization and to expand Medicaid programs and services	Will allow Vermont to offer publicly-funded universal health care coverage under Green Mountain Care	Will allow Vermont to move away from fee for service and work towards all-payer rate-setting for health care services (like MD)
When do we get it?	VT has had this waiver since 2005. VT renewed it in 2013 and it will be renewed again for 2017	VT cannot be approved for this waiver until 2017	VT is applying for this waiver as soon as possible

The Medicaid and the ACA Waiver will be done at the same time through a coordinated process

GMC's Legal Parameters– ACA Waiver

- Vermont can request a waiver of the following requirements under the ACA
  - Qualified health plans– insurance plans sold on Exchange (Vermont Health Connect)
  - Exchanges (Vermont Health Connect)
  - Premium tax credits and cost sharing subsidies paid to insurers
  - Individual penalty
  - Large employer penalty

GMC's Legal Parameters– ACA Waiver

The ACA Waiver requires the state to:

- Cover the same or more people than under the ACA
- Provide coverage that is as good or better than the ACA
- Provide coverage that is as affordable or more affordable than the ACA
- Not increase the federal deficit

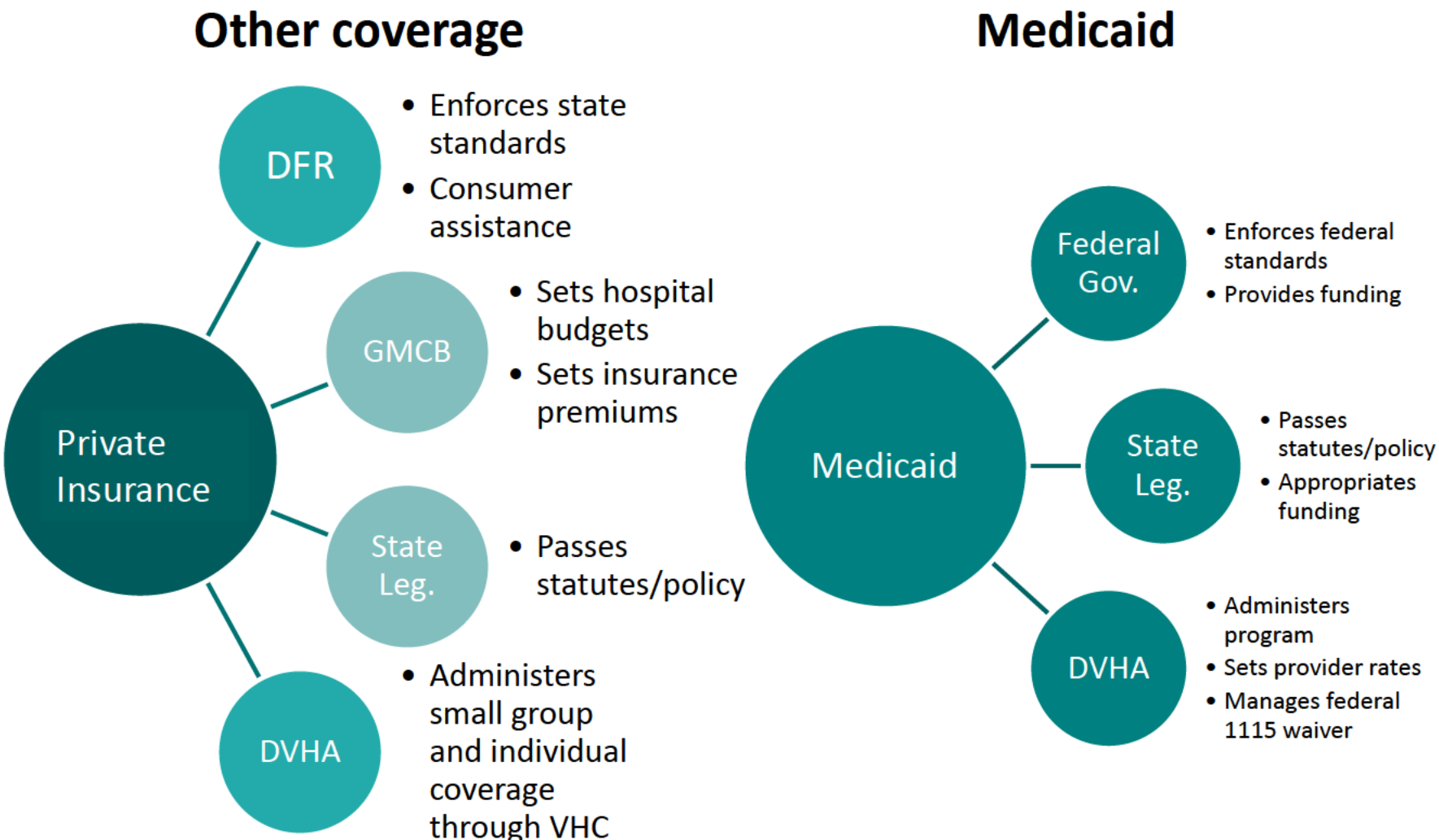
The ACA allows for a coordinated process with Vermont's Medicaid waiver

GMC's Legal Parameters– Medicaid

GMC Medicaid Goals

- One program– Green Mountain Care
- Two different covered services packages
- Cost sharing stays the same– is integrated into sliding scale
- Federal protections remain the same
- Medicaid funding stream, then separate payers

Current Medicaid System



GMC Medicaid

GMC's Legal Parameters– Medicaid

- Under state law, Medicaid benefits must be the same as the Medicaid benefit package on January 1, 2014 for the first year of Green Mountain Care
  - Same covered services
    - See next slide
  - Same cost-sharing
    - $1-$3 for prescriptions
    - $3 per day for hospital
    - $3 per visit for dental
- After the first year, the GMCB may modify optional Medicaid benefits, but must maintain federal mandatory Medicaid benefits and meet waiver requirements

GMC's Legal Parameters– Medicaid

Medicaid Mandatory	Medicaid Optional
Inpatient hospital services	Prescription drugs
Outpatient hospital services	Clinic services
EPSDT	Physical therapy
Home health services	Occupational therapy
Physician services	Speech, hearing and language disorder services
Rural Health Clinic services	Respiratory care services
FQHC services	Podiatry services
Laboratory and X-ray services	Optometry services
Family planning services	Dental services
Nurse Midwife services	Dentures
Pediatric and Family Nurse Practitioner Services	Prosthetics
Freestanding Birth Center services	Eyeglasses
Transportation to medical care	Chiropractic services
Tobacco cessation counseling for pregnant women	Personal care
Medical or surgical services by a dentist	Hospice
Nursing facility services for age 21 & older	Case management + more

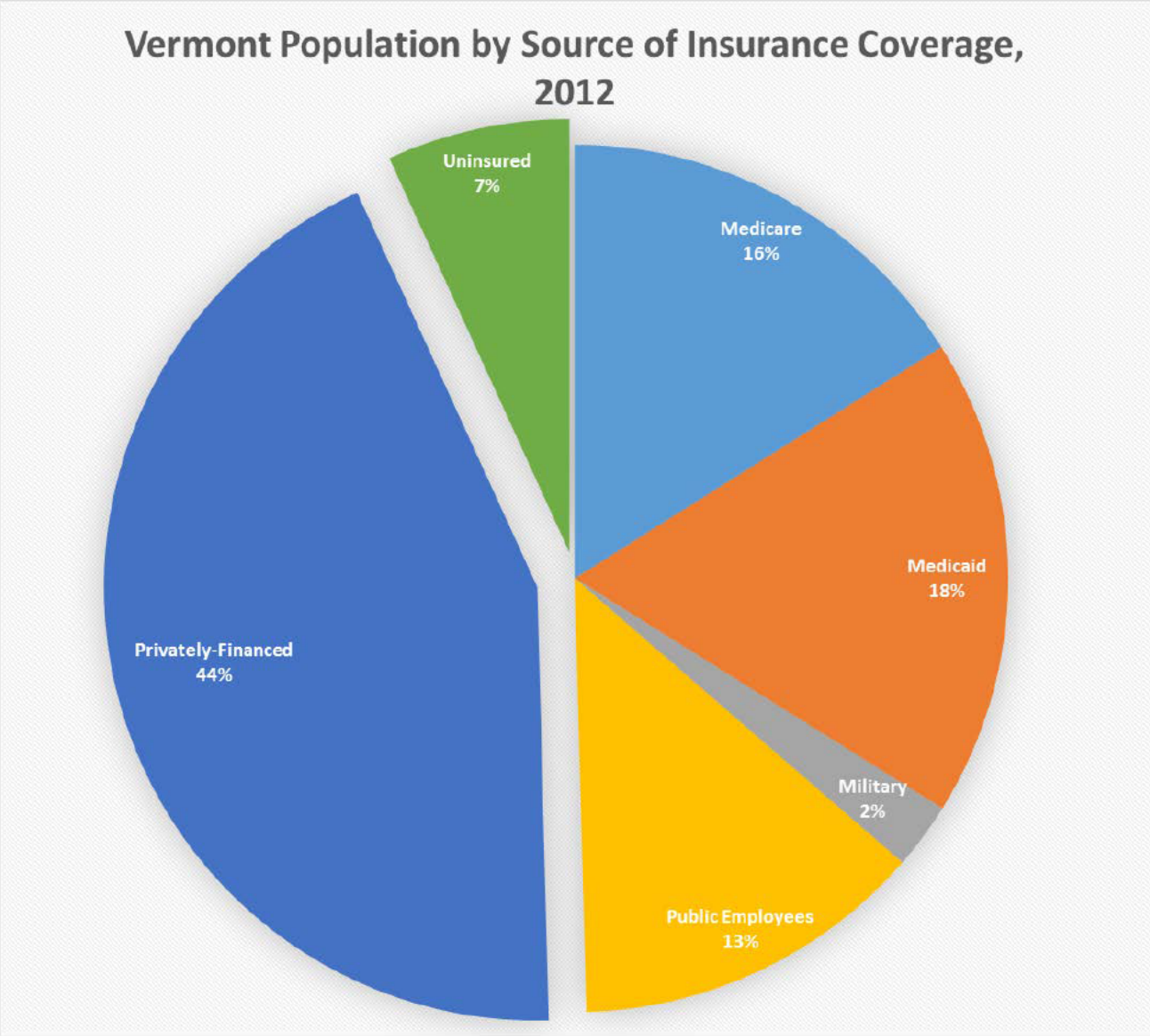
GMCB Role for GMC Benefits

In this process, GMCB:

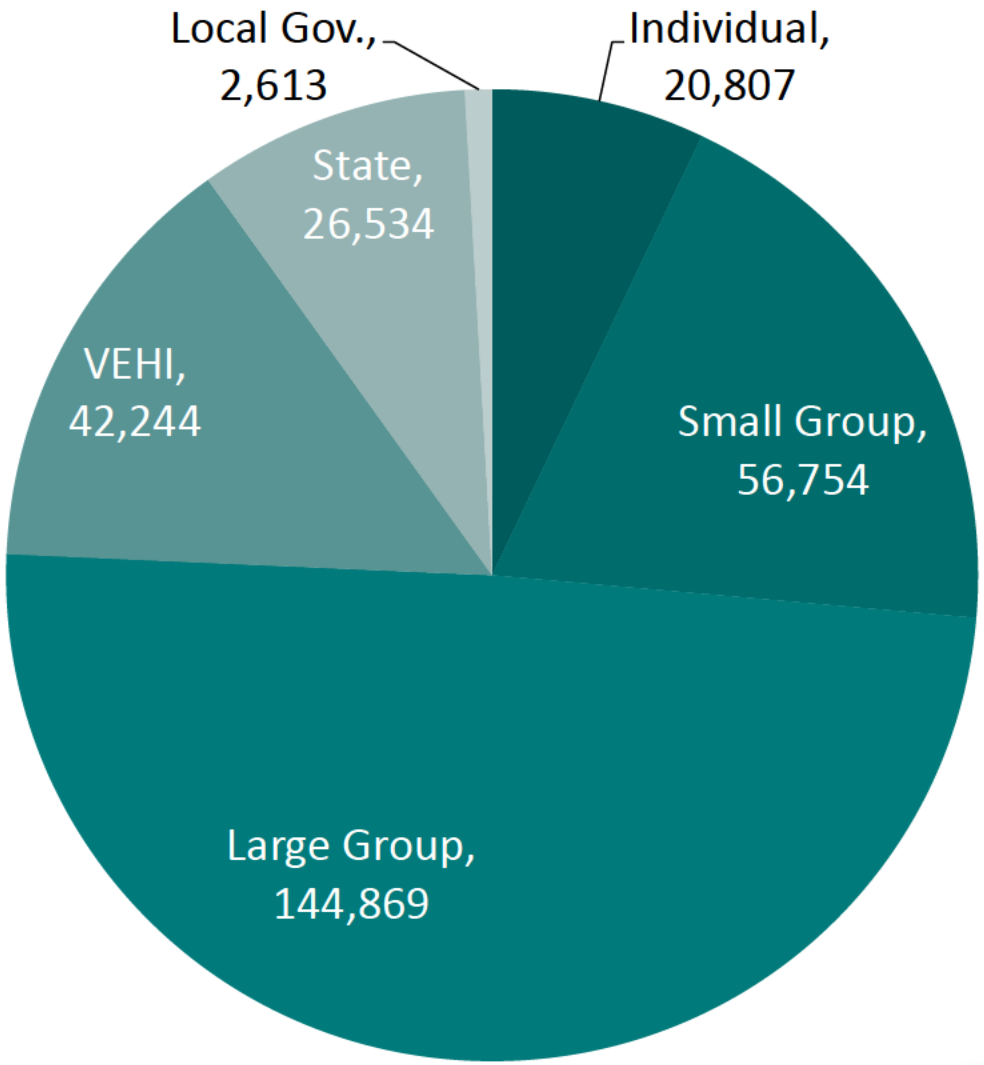
- Defines primary coverage benefits within Act 48 and ACA Waiver parameters
  - Covered services
  - Level of cost sharing
  - Cost sharing
- Keeps Medicaid benefits the same for year one

BACKGROUND ON BENEFITS

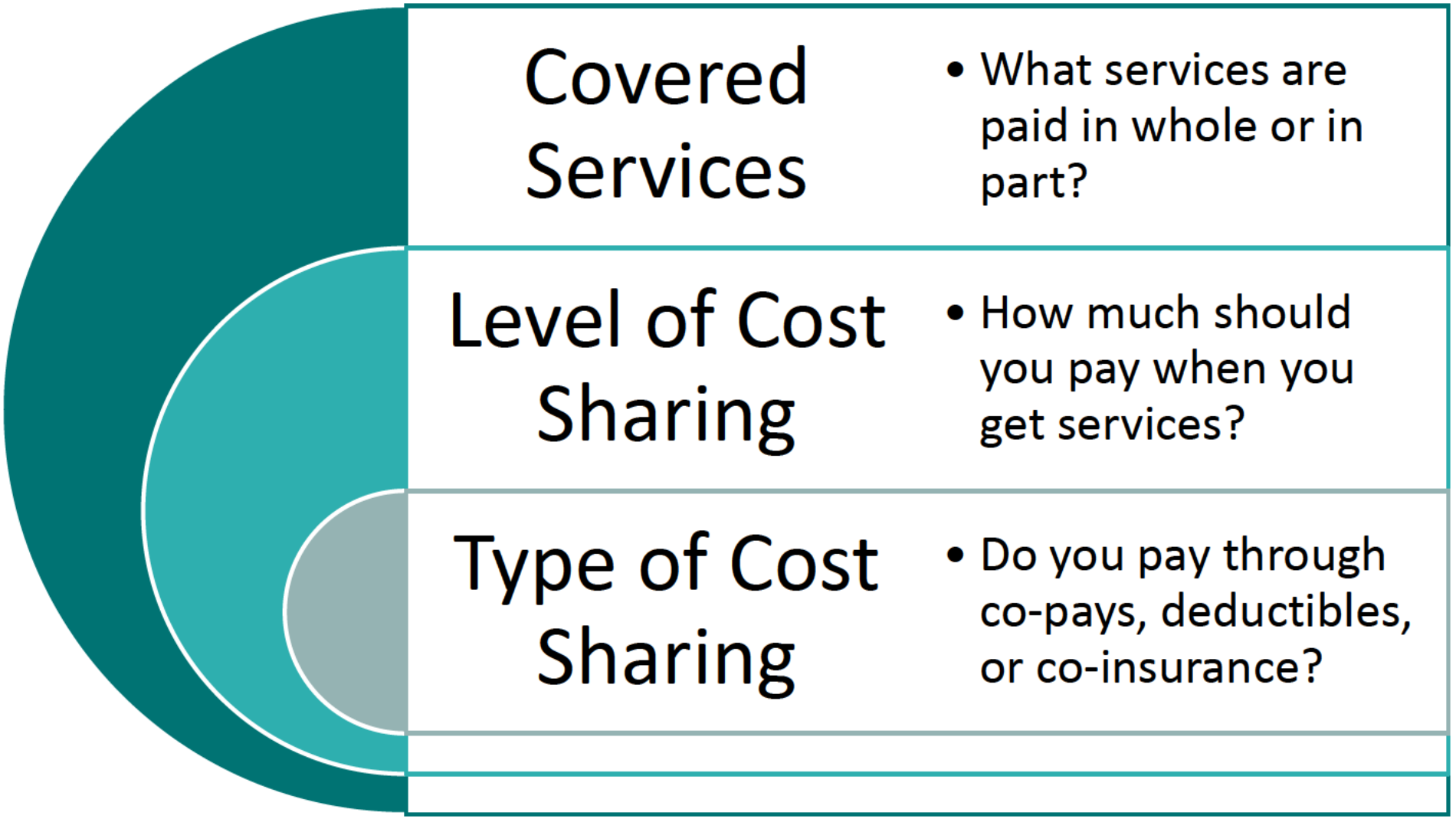
Vermont Health Care Coverage Today



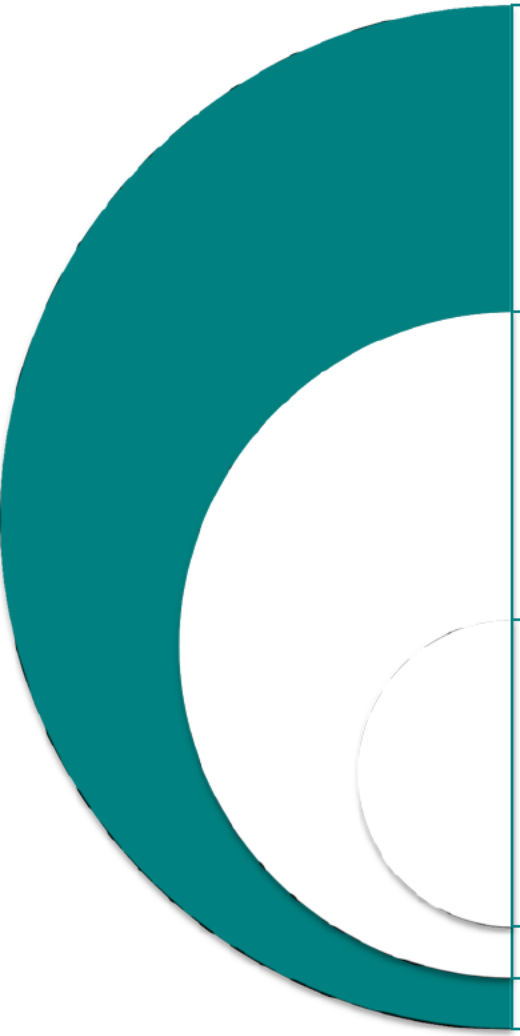
Vermont Health Care Coverage Today



Benefits Background



Benefits and Covered Services



Covered Services	• What services are paid in whole or in part?
Level of Cost Sharing	• How much should you pay when you get services?
Type of Cost Sharing	• Do you pay through co-pays, deductibles, or co-insurance?

Definition: Covered Services

What are covered services?

- Covered services are services, medication, or medical devices that health care coverage pays for in part or completely
- Current examples of covered services typically included in health insurance:
  - Doctor visits
  - Hospital services
  - Specialist visits

Covered Services Today

	Essential Health Benefit	State Employee and Retirees		VEHI Education Employees and Retirees	
		SelectCare	Total Choice	300 Ded	VHP
Chiropractic	Limit 12 visits then prior approval required	Limit 60 visits per year (total visits for PT, OT, ST, Chiro)	Limit 60 visits per year (total visits for PT, OT, ST, Chiro)	Prior approval required after 12th visit	Prior approval required after 12th visit
Infertility	Not covered	Up to $50,000 lifetime max	Up to $50,000 lifetime max	Not covered	Not covered
Bariatric Surgery	Covered	Covered, medical necessity	Covered, medical necessity	With prior approval	With prior approval
Fertility Drugs	Covered	Covered	Covered	Covered	Covered
Routine Eye Exams	1/year for children	$100/2 years	$100/2 years	Not covered	1/year

GMC Covered Services Parameters

- Federal law requires that GMC cover as many or more services than the ACA
  - Means that GMC must include the ACA's essential health benefits as covered services
- State law requires GMC to have the same covered services as Catamount
  - The ACA's essential health benefits have more covered services than Catamount

GMC Benefits and Affordable Care Act

The Affordable Care Act Waiver requires state to:

- Cover the same or more people than under the ACA
- Provide coverage that is as good or better than the ACA
- Provide coverage that is as affordable or more affordable than the ACA
- Not increase the federal deficit

EHB Covered Services

Essential Benefits include all state mandates and the following services:

- Ambulatory patient services
- Emergency services
- Hospitalization
- Maternity and newborn care
- Mental health and substance use disorder services, including behavioral health treatment
- Prescription drugs
- Rehabilitative and habilitative services, and chronic disease management
- Laboratory services
- Preventive and wellness services
- Pediatric services, including oral and vision care

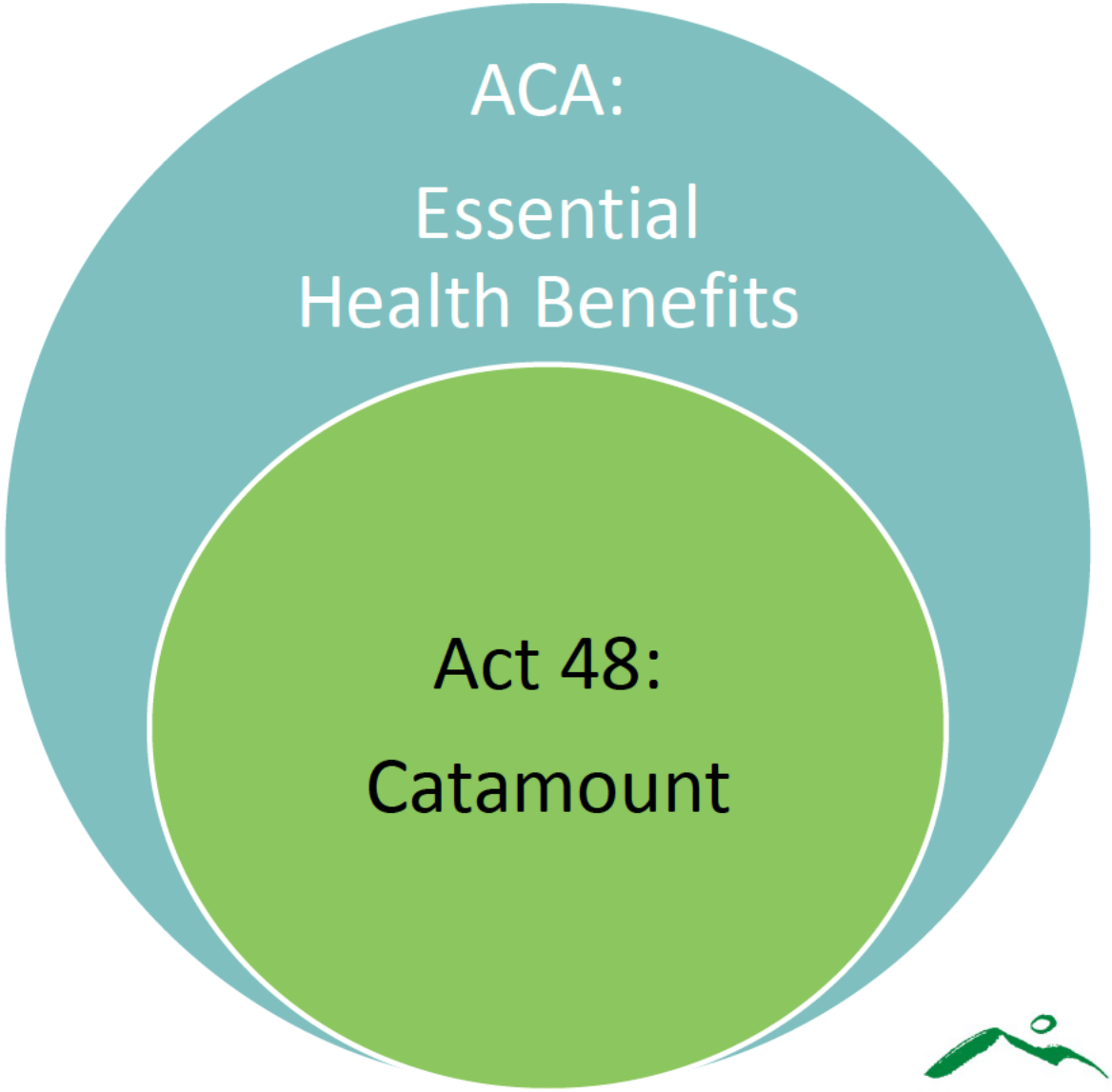
Above and beyond Catamount and other plans

Covered Services – Mental Health

Mental Health Consideration:

- Parity is required by federal law
- VT's laws exceed federal requirements by applying to non-group market, too
- Differences in out-of-network coverage are not limits considered by HHS to carry over to the definition of essential health benefit

GMCB Legal Parameters



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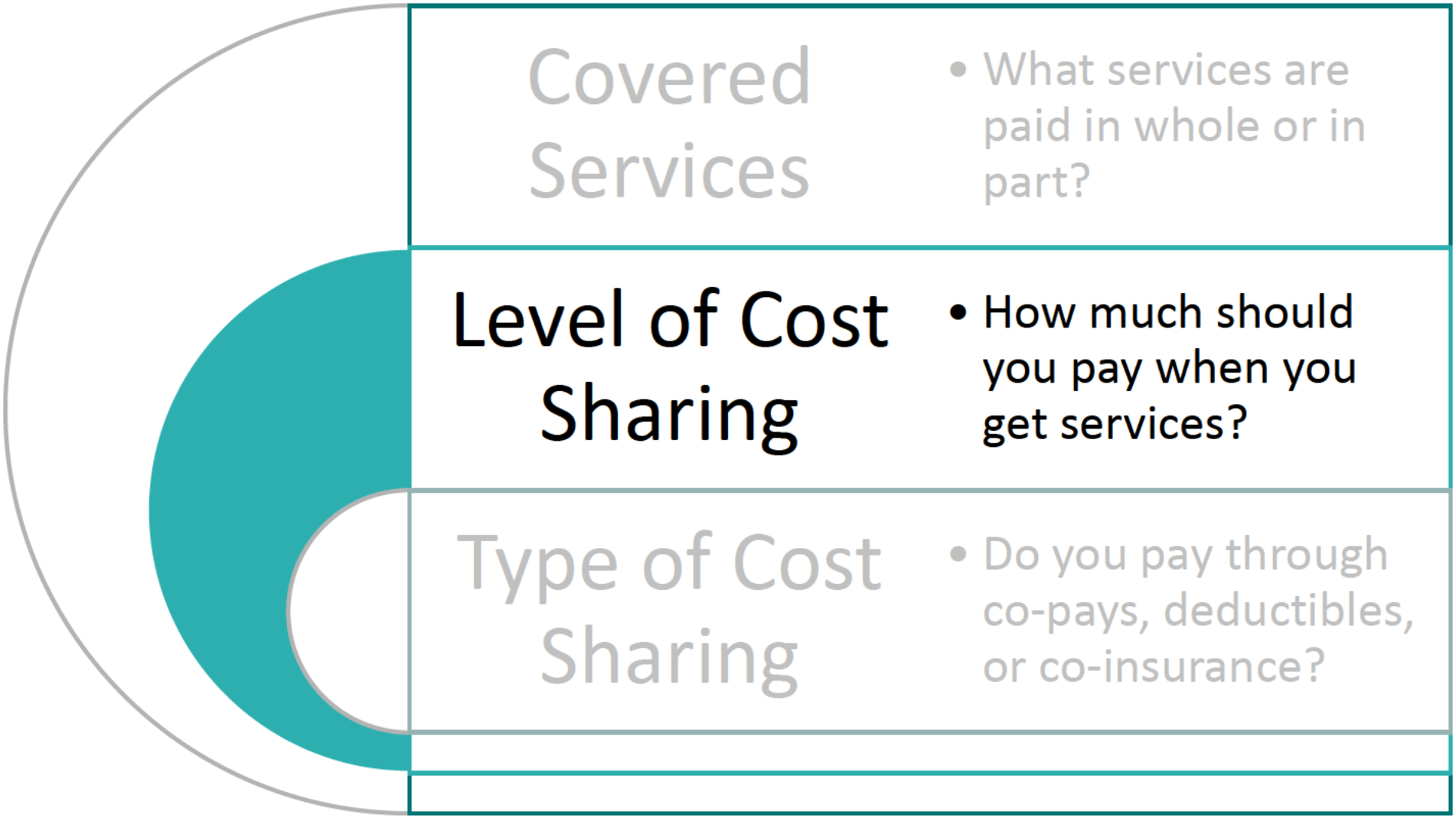
GMC Benefits and Covered Services

State law requires GMCB to consider adding the following services:

- Adult dental
- Adult vision
- Hearing
- Long Term Care Services and Supports

Vermont will not receive any extra federal funding to cover these services

Benefits and Level of Cost Sharing



Level of Cost Sharing: Definitions

What is cost sharing?

- Cost sharing is the part of the plan that you pay when you receive covered services
- Includes:
  - Deductibles
  - Co-Pays
  - Coinsurance
- Does NOT include
  - Premiums

Level of Cost Sharing

- Plans can have different levels of cost sharing but still cover the same services

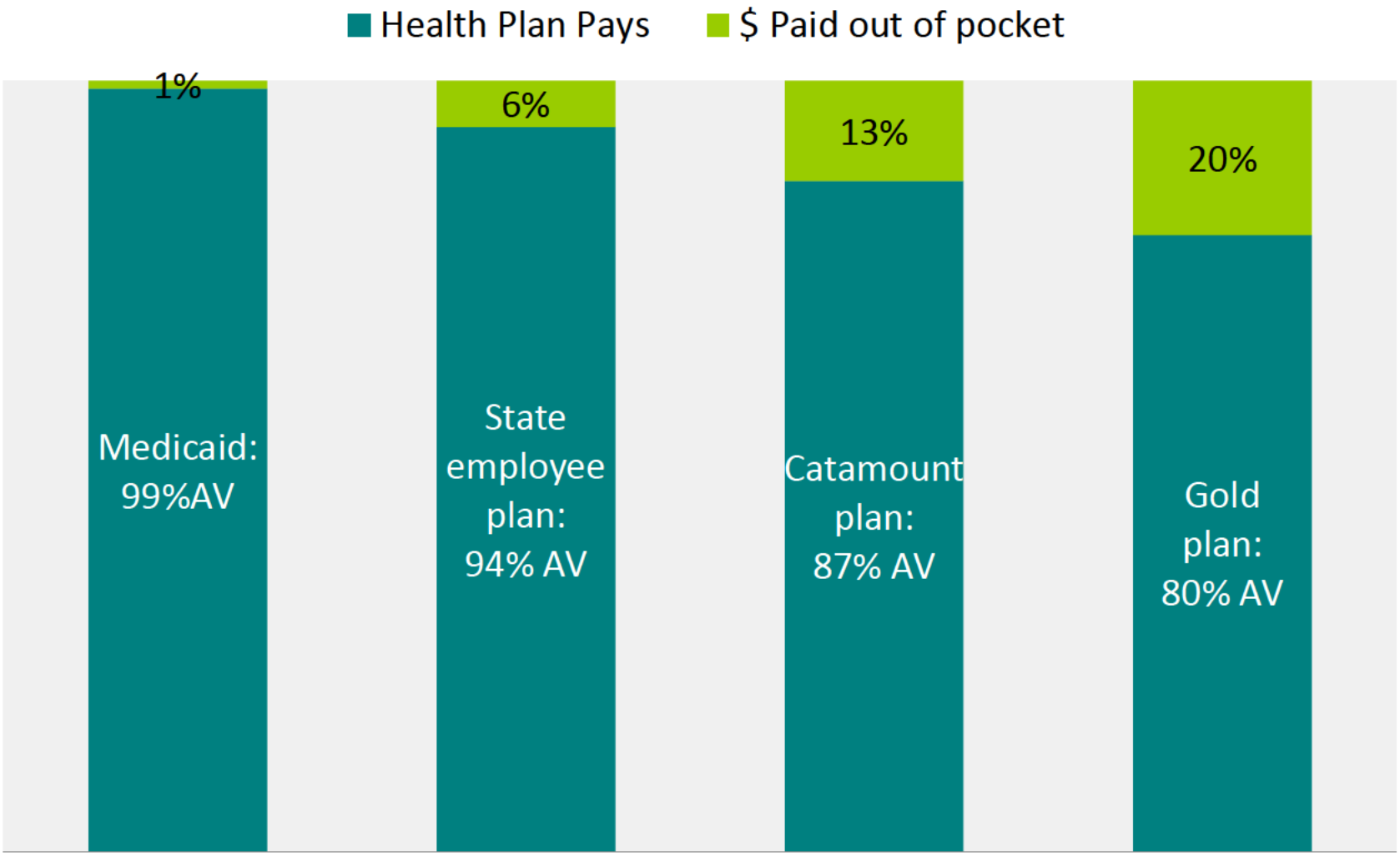
I pay a $20 co-pay when I see my therapist

I pay a $50 co-pay when I see my therapist

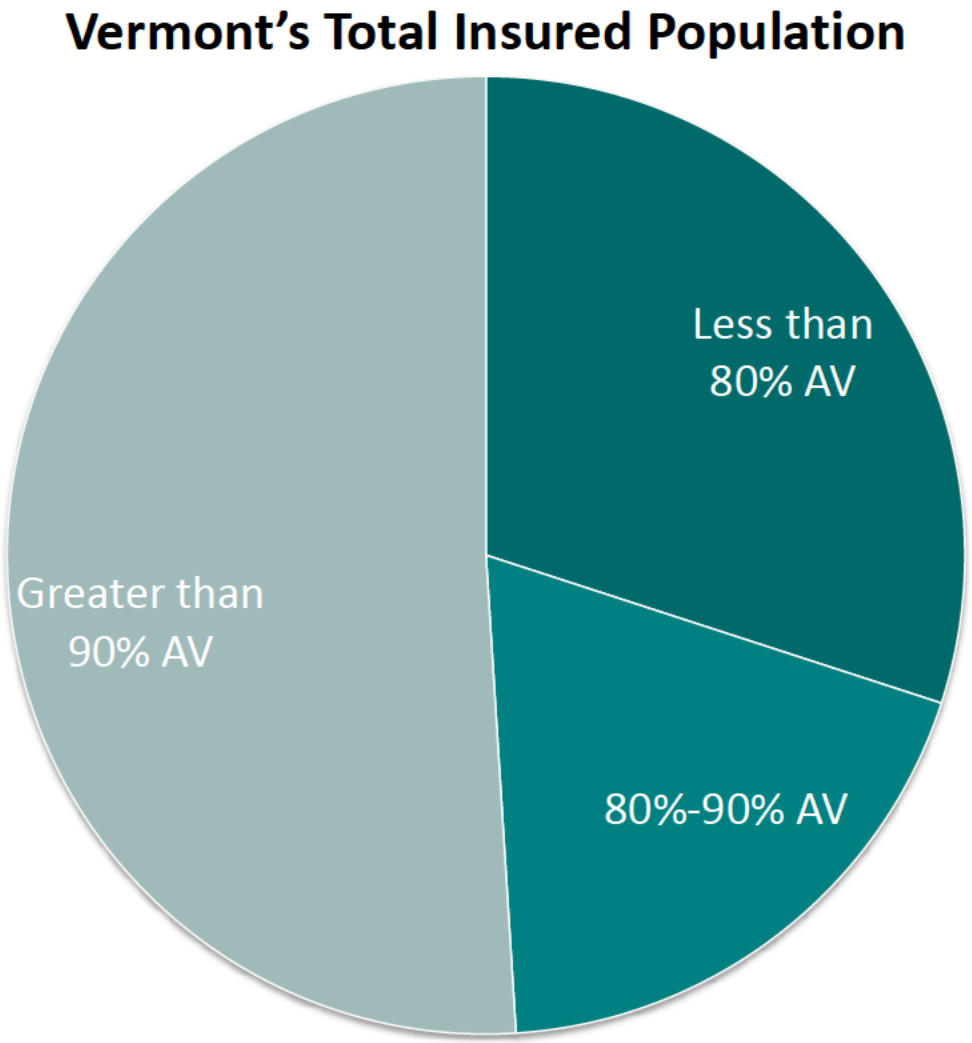
Level of Cost Sharing

- These different levels of cost sharing are called actuarial value (AV)
- Actuarial value means the total average costs of covered services that your plan will cover
- In a plan with a high AV, you will pay less in co-pays, co-insurance, and deductibles
- A plan with a low AV, you will pay more in co-pays, co-insurance, and deductibles

Level of Cost Sharing—AV Examples



Level of Cost Sharing – 2013



VERMONT HEALTH CARE REFORM

GMC Benefits and Level of Cost Sharing

The Affordable Care Act Waiver requires state to:

- Cover the same or more people than under the ACA
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- Provide coverage that is as affordable or more affordable than the ACA
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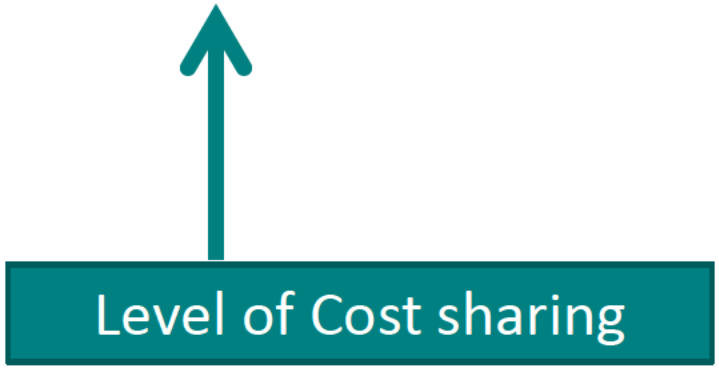


GMC Benefits and Level of Cost Sharing

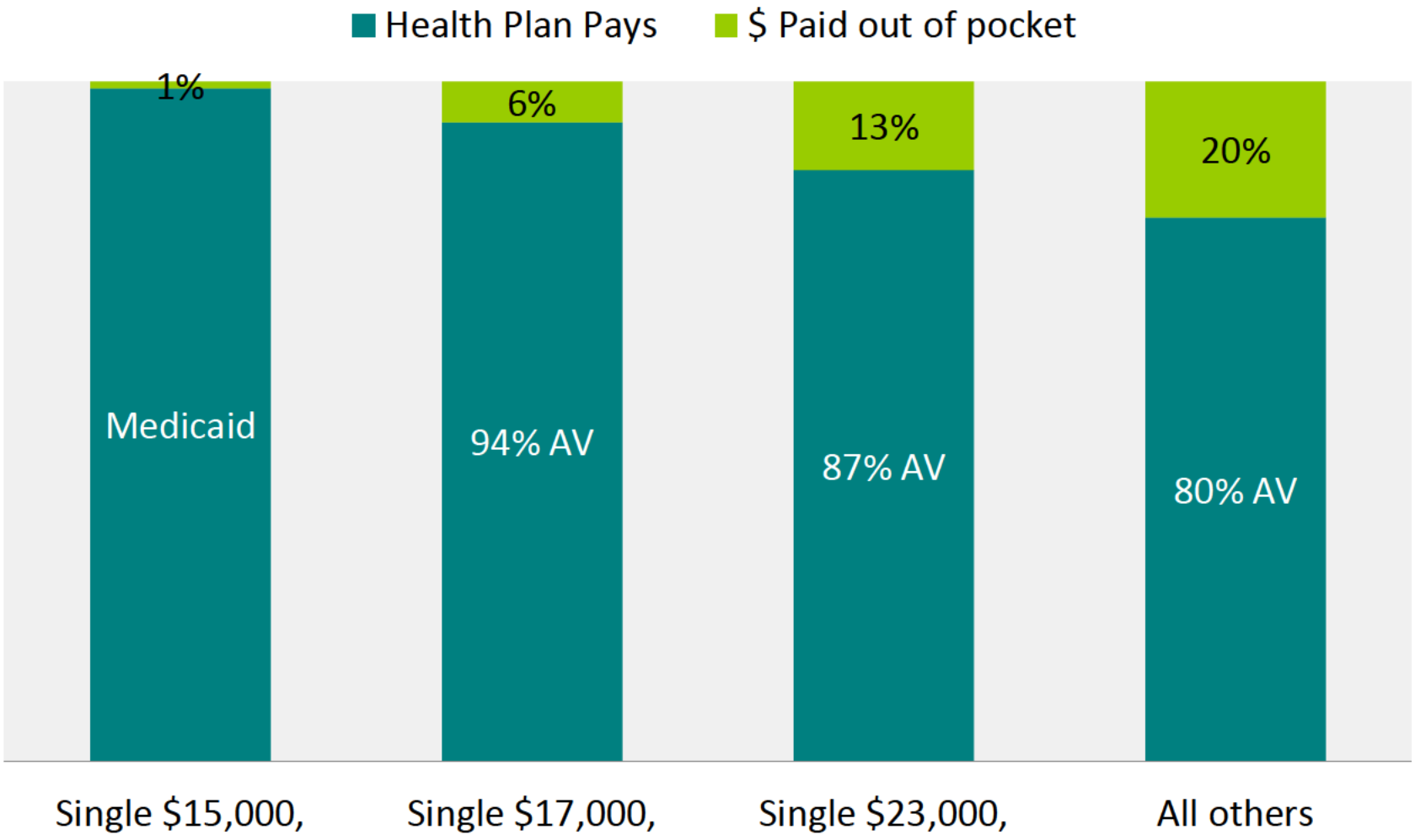
- Act 48 states that the GMC plan must be have at least an 80% AV
  - This looks like a gold plan in Vermont Health Connect

- Act 48 preferred an 87% AV plan for GMC
  - This is close to a platinum plan in Vermont Health Connect

GMC Benefits and Cost Sharing

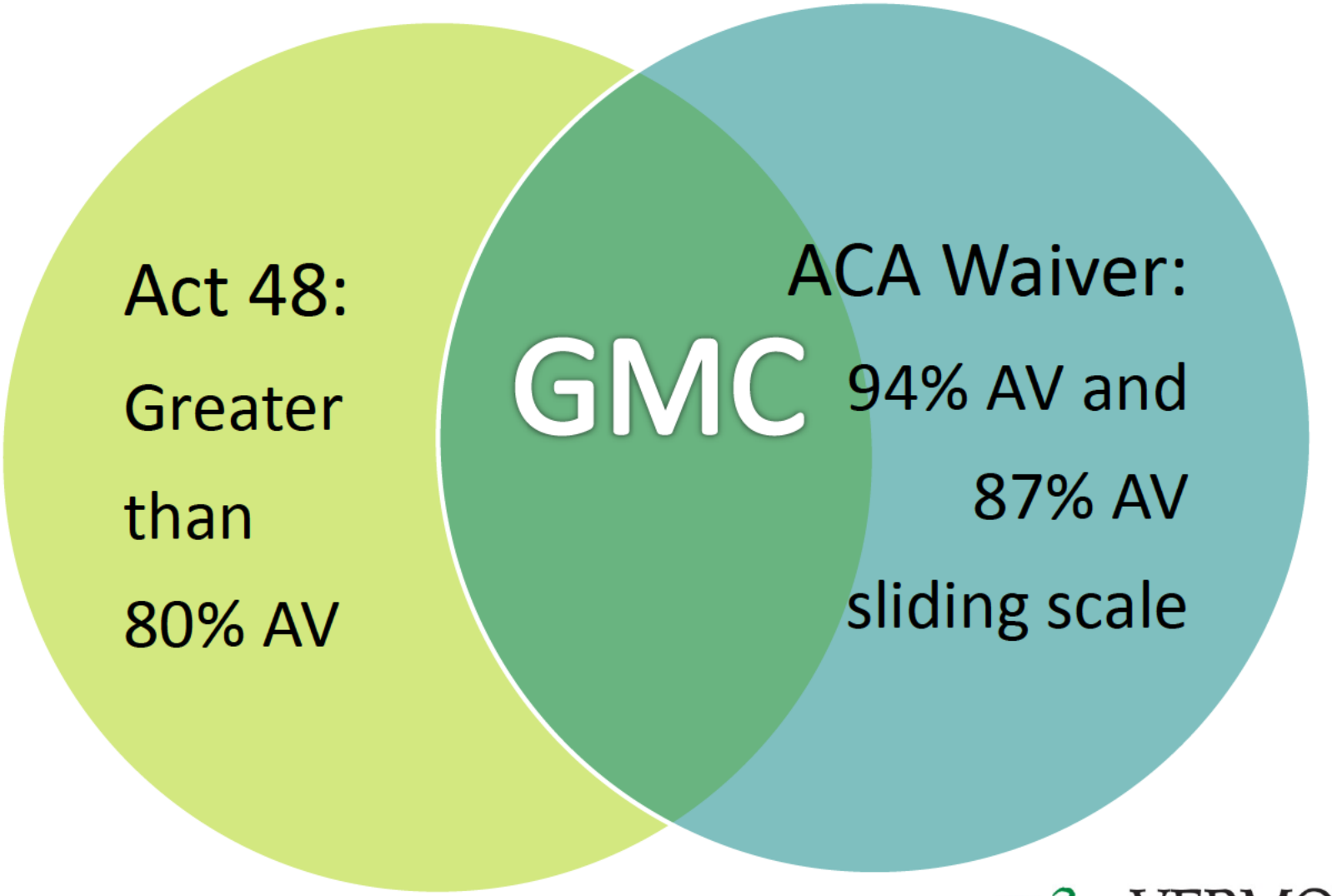
- The Affordable Care Act requires us to provide coverage that is as affordable or more affordable than the ACA.
- This means that people who are eligible to pay lower out of pocket costs through cost sharing reductions in Vermont Health Connect will pay lower out of pocket costs under GMC

ACA Cost Sharing Sliding Scale

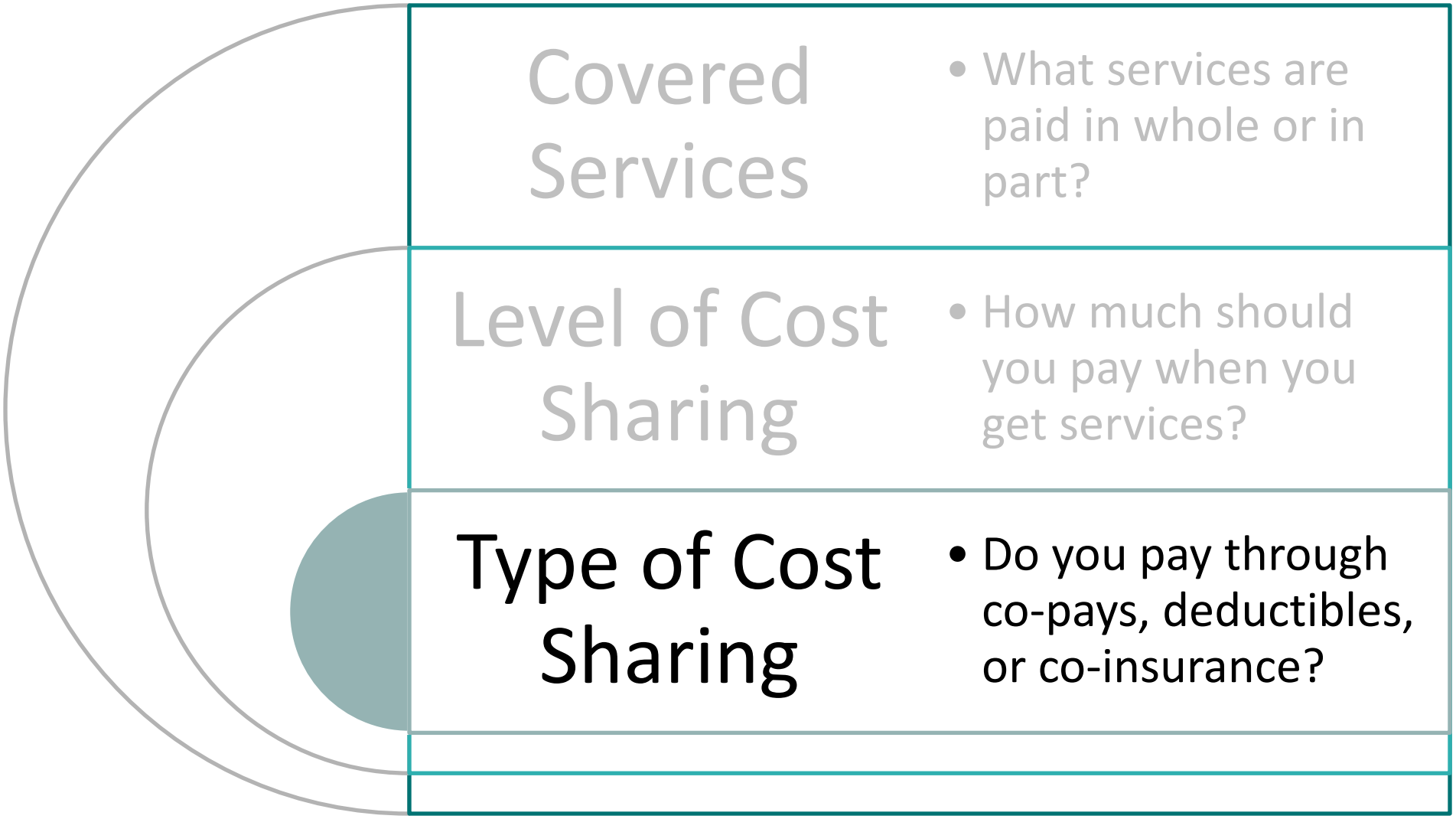


VERMONT HEALTH CARE REFORM

GMCB's Legal Parameters



Benefits and Type of Cost Sharing



Type of Cost Sharing: Definitions

What is a deductible?

- The amount you owe for health care services your health insurance or plan covers before your health insurance or plan begins to pay.
  - Preventive services are covered 100%
  - Deductible may not apply to all services, like primary care physician's visits

Type of Cost Sharing: Definitions

What is co-insurance?

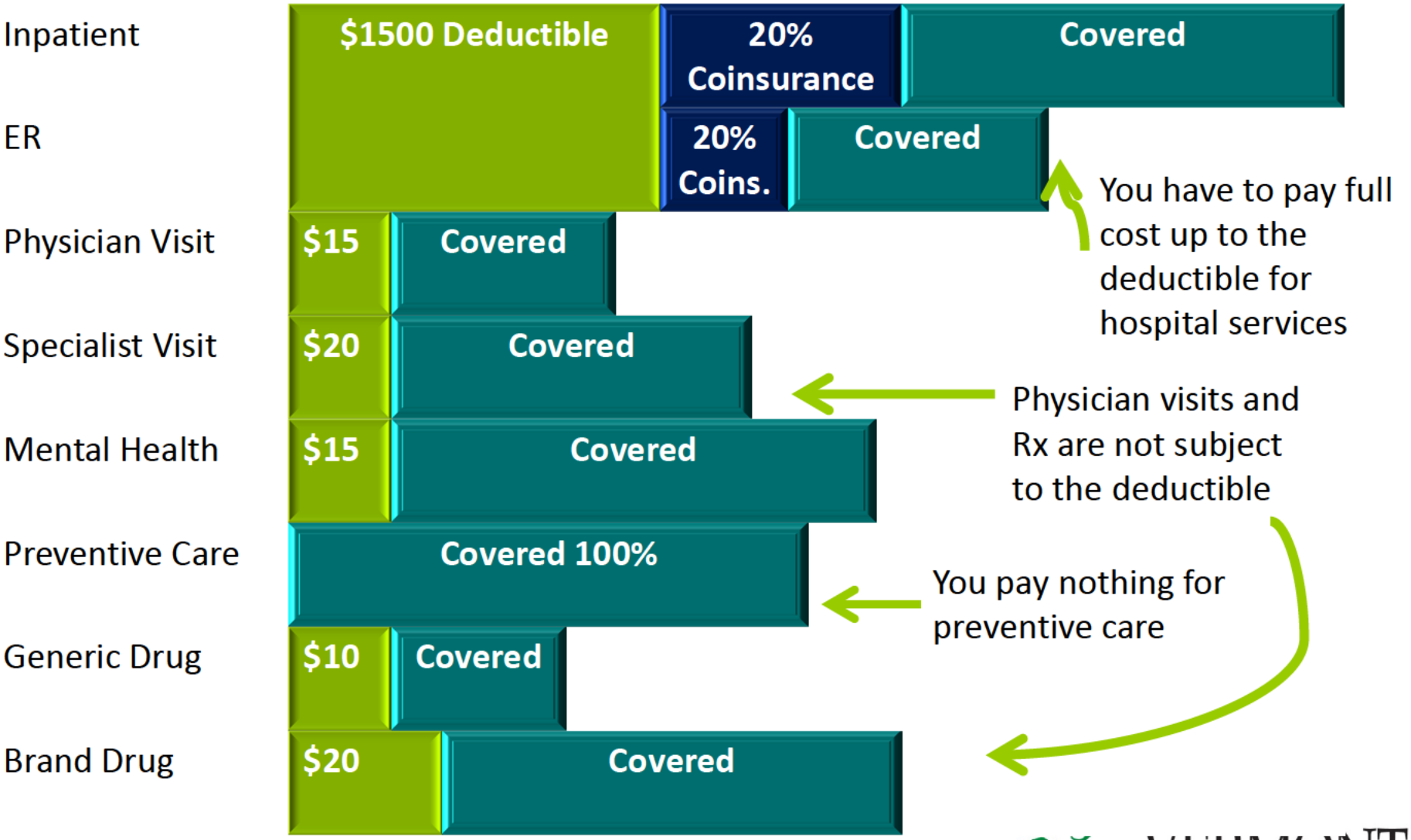
- Your share of the costs of a covered health care service, calculated as a percent (for example, 20%) of the allowed amount for the service.
- For example, if the cost of a hospital service under your health plan is $1,000, your coinsurance payment of 20% would be $200. The health insurance or plan pays the rest of the allowed amount.

Type of Cost Sharing: Definition

What is a co-pay?

- A fixed amount (for example, $15) you pay for a covered health care service, usually when you get the service. The amount can vary by the type of covered health care service.

Type of Cost Sharing: Plan Example



VERMONT HEALTH CARE REFORM

Type of Cost Sharing: Plan Example

- Family of four. One child with diabetes. Parent A with cholesterol and high blood pressure meds. Parent B to receive colonoscopy. Other child breaks arm in a ski accident.

	Units	Cost /unit	Allowed Costs	Deductible	Co-pay	Co-ins
PCP Visits	8	$100	$800	N/A	$120	N/A
Diab. meds (generic)	12	$144	$1,728	N/A	$120	N/A
Cholesterol meds	12	$79	$948	N/A	$240	N/A
ER & Hosp. services	1	$3,000	$3,000	$1500	N/A	$300
Colonoscopy (preventive)	1	$4,300	$4,300	$0	$0	$0
Total cost				**$10,776**		
Family pays				**$2,280**		

Questions?

Appendix B-6. Presentation to the Green Mountain Care Board
December 11, 2014

Green Mountain Care: Lay of the Land for Covered Services and Level of Cost Sharing

Robin J. Lunge, J.D., MHCDS
Director of Health Care Reform, AOA

Devon J. Green, J.D.
Special Counsel on HCR, AOA

December 11, 2014

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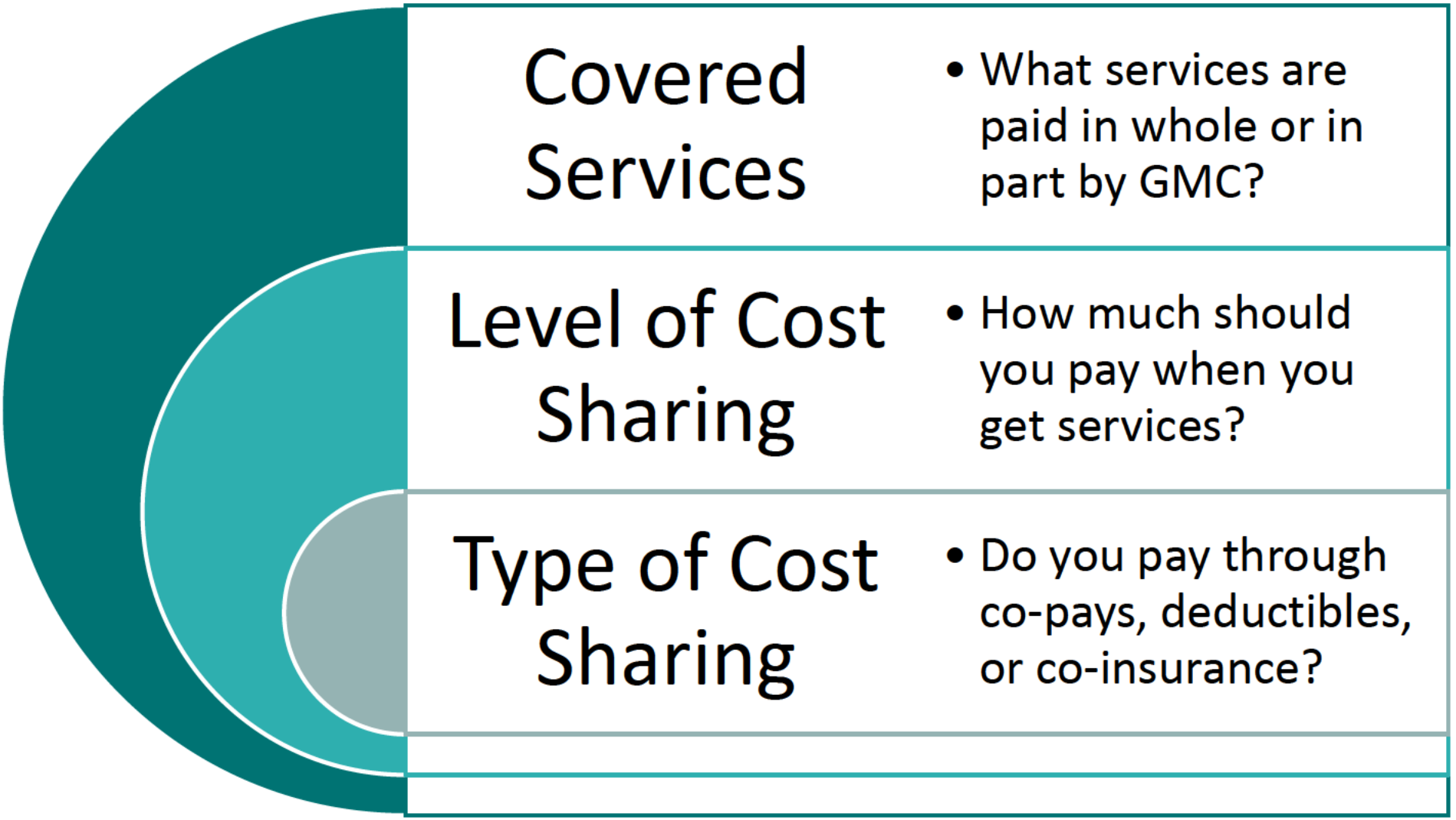
HEALTH CARE REFORM

Discussion for Today

- Covered Services
  - Today's covered services
  - Overview of covered services in other states
  - Overview of covered services in other countries
- Level of Cost Sharing
  - Level of cost sharing in Vermont today
  - Overview of level of cost sharing in other countries
- Benefit design public input

Health Care Reform Goals: Why Reform?

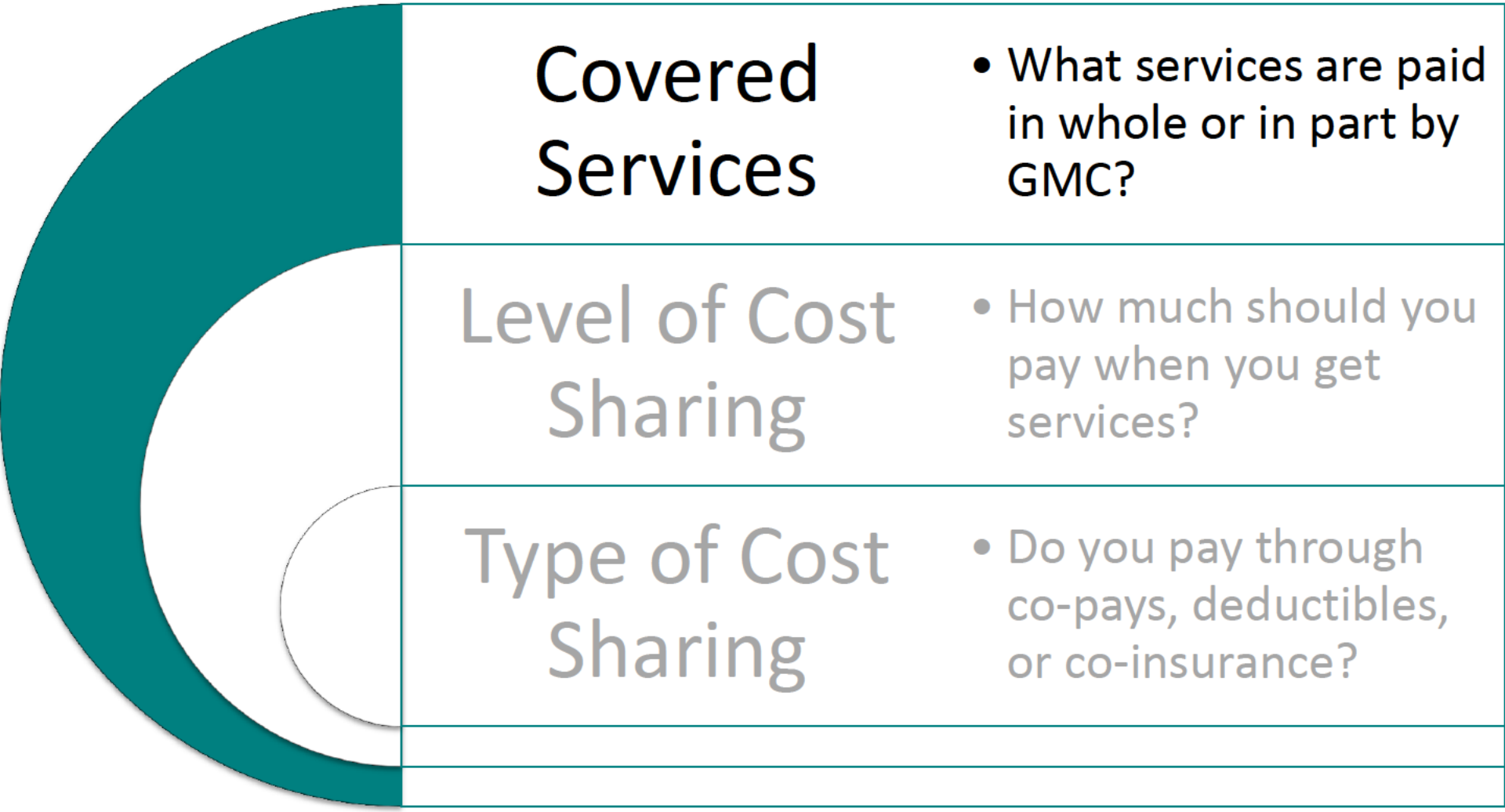
GMC Benefits



Design Considerations

- Federal and state requirements for benefits
- Equity
- Administrative cost & complexity
- Options fit together, easy to explain
- Individual out of pocket cost (average & max)
- Medical cost & utilization
- Change from current/expected
- Federal & state tax implications

GMC Benefits and Covered Services



Covered Services Today

	Essential Health Benefit	State Employee and Retirees		VEHI Education Employees and Retirees	
		SelectCare	Total Choice	300 Ded	VHP
Chiropractic	Limit 12 visits then prior approval required	Limit 60 visits per year (total visits for PT, OT, ST, Chiro)	Limit 60 visits per year (total visits for PT, OT, ST, Chiro)	Prior approval required after 12th visit	Prior approval required after 12th visit
Infertility	Not covered	Up to $50,000 lifetime max	Up to $50,000 lifetime max	Not covered	Not covered
Bariatric Surgery	Covered	Covered, medical necessity	Covered, medical necessity	With prior approval	With prior approval
Fertility Drugs	Covered	Covered	Covered	Covered	Covered
Routine Eye Exams	1/year for children	$100/2 years	$100/2 years	Not covered	1/year

Covered Services Today

State Mandates stay in place:

- Maternity coverage
- Outpatient contraceptive services, including sterilization
- Home health care
- Emergency room services
- Newborn coverage
- Autism spectrum disorders for children
- Chiropractic services
- Prosthetic devices
- Mammograms
- Anesthesia for dental procedures performed on certain covered persons
- Child Vaccine benefits
- Prostate screenings
- Colorectal cancer screening
- Diabetes treatment
- Mental health and substance abuse
- Clinical trials for cancer patients
- Chemotherapy treatment
- Orally administered anticancer medication
- Treatment of inherited metabolic diseases
- Craniofacial disorders
- Off-label use

GMCB's Legal Parameters

- Green Mountain Care must have all of the ACA's essential health benefits (EHBs)
- State law requires GMCB to consider adding the following services:
  - Adult dental
  - Adult vision
  - Hearing
  - Long Term Care
- Vermont will not receive any extra federal funding to cover these services

Covered Services State Comparison– Dental EHB

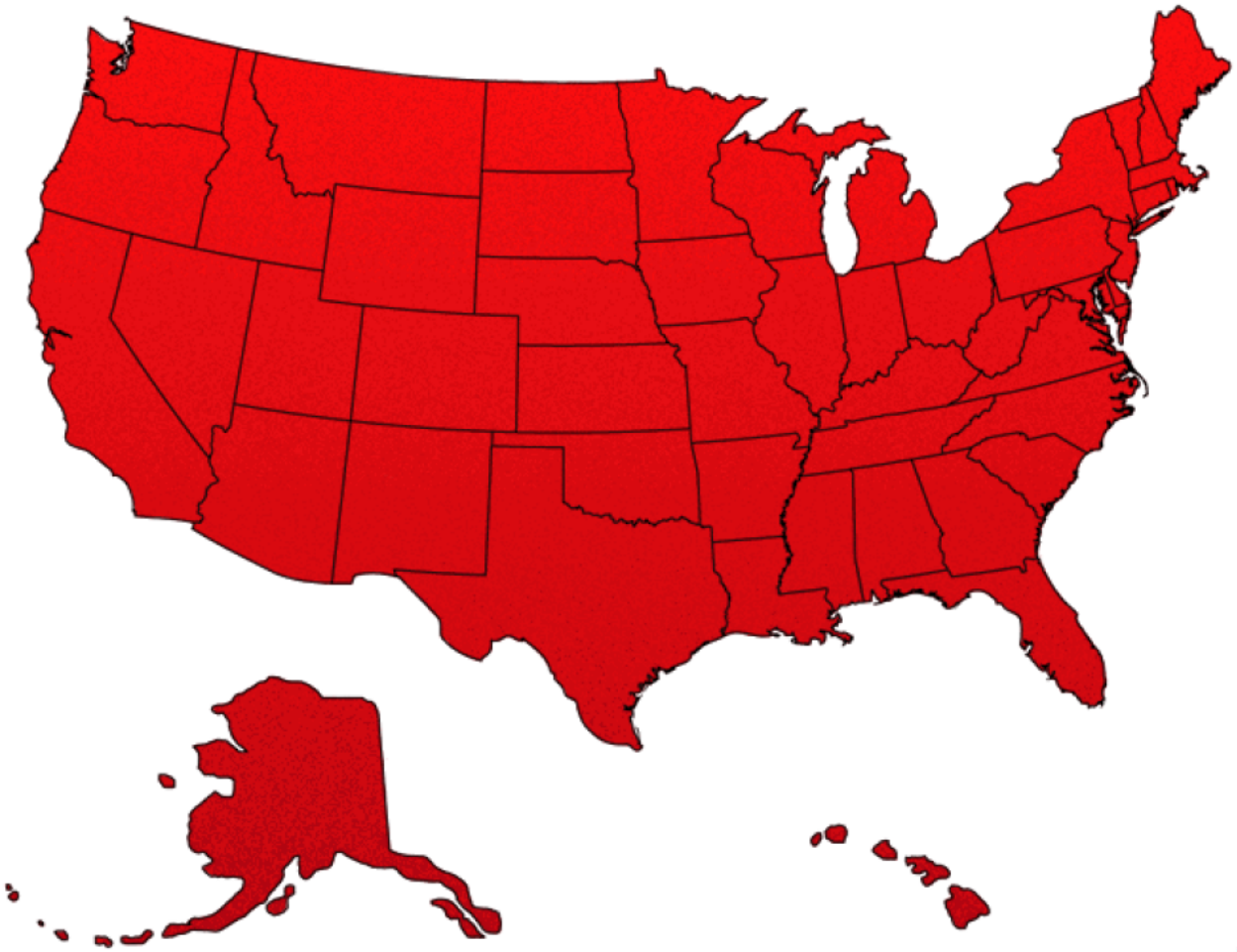
- At the last meeting, GMCB requested an overview of how adult dental is covered in other states
- We examined the essential health benefits package of each state as well as the Medicaid covered services to compare adult dental coverage

Covered Services State Comparison– Dental EHB

- All essential health benefits packages must include coverage of pediatric dental. Vermont covers pediatric dental up to age 21:
  - Prevention, evaluation and diagnosis, including radiographs when indicated
  - Periodic prophylaxis, including topical fluoride applied in a dentists office
  - Periodontal therapy
  - Treatment of injuries
  - Treatment of disease of bone and soft tissue
  - Oral surgery for tooth removal and abscess drainage
  - Treatment of anomalies
  - Endodontics (root canal therapy)
  - Restoration of decayed teeth
  - Replacement of missing teeth, including fixed and removable prosthetics (i.e. crowns, bridges, partial dentures and complete dentures)

Covered Services State Comparison– Dental EHB

Adult dental & health insurance: no states cover as EHB



Covered Services State Comparison– Dental EHB

Adult dental & health insurance:

- The U.S. Territories, except for Puerto Rico, covers:
  - 2 check-ups per year

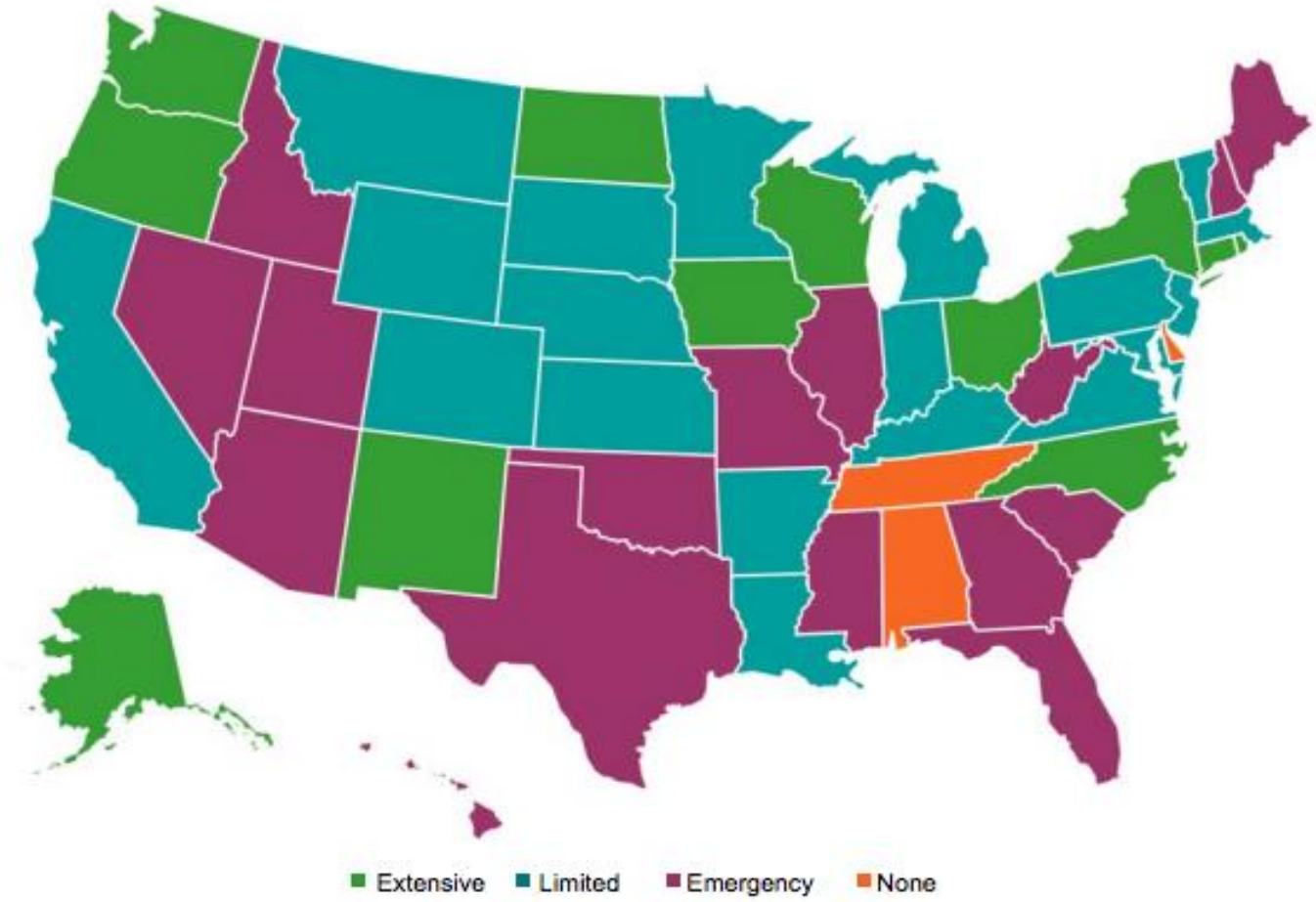
  NOTE: Feds chose federal health insurance as benchmark plan due to unique nature of territory markets
- Puerto Rico covers
  - 2 check-ups per year
  - X-rays once every three years

Covered Services State Comparison– Dental Medicaid

- Under Vermont Medicaid, adults with income up to 138% FPL receive dental under Medicaid
  - $510 per beneficiary per year
  - Beneficiaries pay $3.00 per visit for dental services
- Benefit primarily limited by access to providers
  - Source: Green Mountain Care Board: Vermont Dental Landscape Study, 2013.

Covered Services State Comparison– Dental Medicaid

- Adult Dental & Medicaid



Source: Yarbrough C, Vujicic M, Nasseh K., *More than 8 Million Adults Could Gain Dental Benefits through Medicaid Expansion.* Health Policy Resources Center Research Brief. American Dental Association. February 2014.

Covered Services State Comparison– Dental Medicaid

Benefit Level	Definition
None	No dental benefits.
Emergency	Relief of pain and infection. While many services might be available, care may only be delivered under defined emergency situations.
Limited	Includes benefits that have a per-person annual expenditure cap of $1,000 or less.
Extensive	Includes benefits that have a per-person annual expenditure cap of at least $1,000.

Covered Services International Comparison

- Health care systems in other countries generally cover:
  - Inpatient
  - Outpatient
  - Specialists
  - Clinical laboratory tests
  - Diagnostic imaging
  - Physical therapy
  - Pharmacy
- There is more variation in vision and dental coverage
- Comparisons of mental health coverage aren't readily available

Covered Services– International

	In-Patient	Out-patient	Specialist	Clinical	Imaging	Phys. Therapy	Pharmacy
Canada	✓	✓	✓	✓	✓	✗	✗
France	✓	✓	✓	✓	✓	✓	✓
Germany	✓	✓	✓	✓	✓	✓	✓
Japan	✓	✓	✓	✓	✓	✓	✓
Sweden	✓	✓	✓	✓	✓	✗	✓
Switz.	✓	✓	✓	✓	✓	✓	✓
U.K.	✓	✓	✓	✓	✓	✓	✓

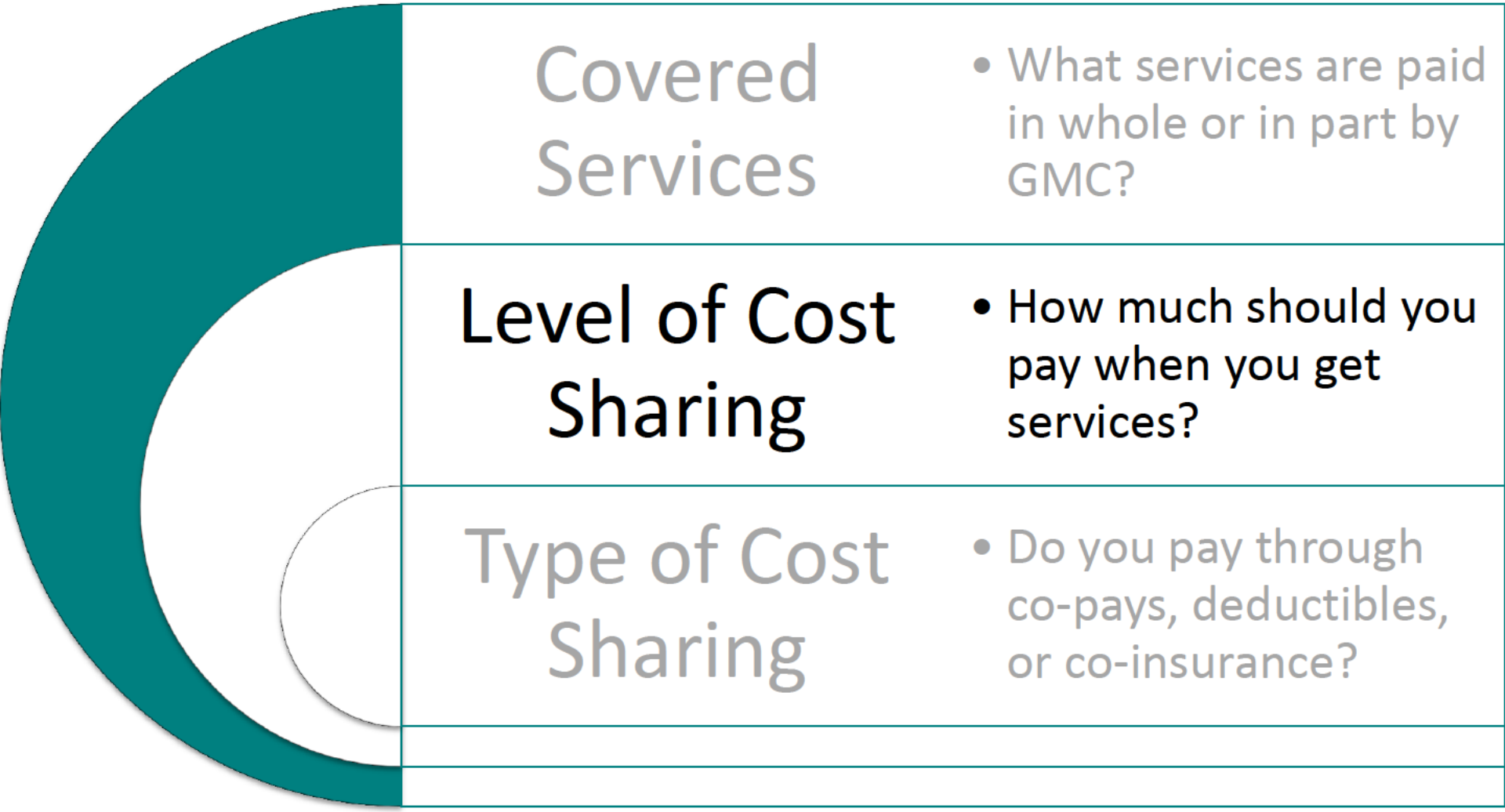
Source: Paris, V., M. Devaux and L. Wei (2010), "Health Systems Institutional Characteristics: A Survey of 29 OECD Countries", OECD Health Working Papers, No. 50, OECD Publishing. Data from 2007 or last available year, http://dx.doi.org/10.1787/5kmfxfq9qbnr-en

Covered Services– International

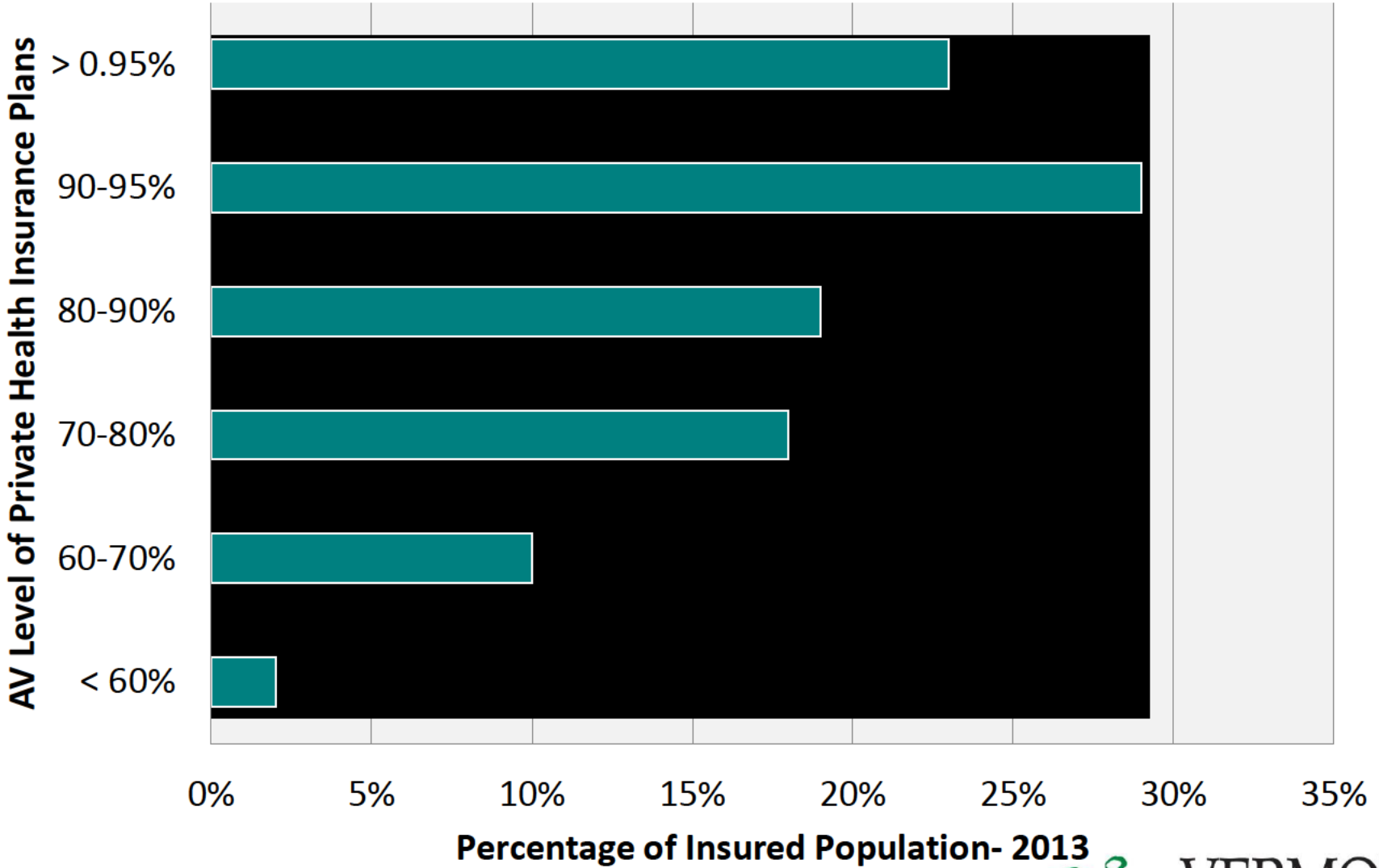
	Eyeglasses and/or contact lenses	Dental Care	Dental Prostheses
Canada	✗	✗	✗
France	½	½	½
Germany	½	✓	½
Japan	✗	✓	✓
Sweden	✗	½	½
Switzerland	½	✗	✗
United Kingdom	✗	✓	✓

Source: Paris, V., M. Devaux and L. Wei (2010), "Health Systems Institutional Characteristics: A Survey of 29 OECD Countries", OECD Health Working Papers, No. 50, OECD Publishing. Data from 2007 or last available year, http://dx.doi.org/10.1787/5kmfxfq9qbnr-en

GMC Benefits and Covered Services



Level of Cost Sharing Today– Vermont



VERMONT
HEALTH CARE REFORM

Excise Tax on “Cadillac” Plans

- In 2018, a 40% excise tax will be assessed on the cost of coverage for health plans that exceed a certain annual limit
  - $10,200 for individual coverage
  - $27,500 for couples and family coverage
  - Numbers are for 2018, will be indexed to inflation

Excise Tax on "Cadillac" Plans

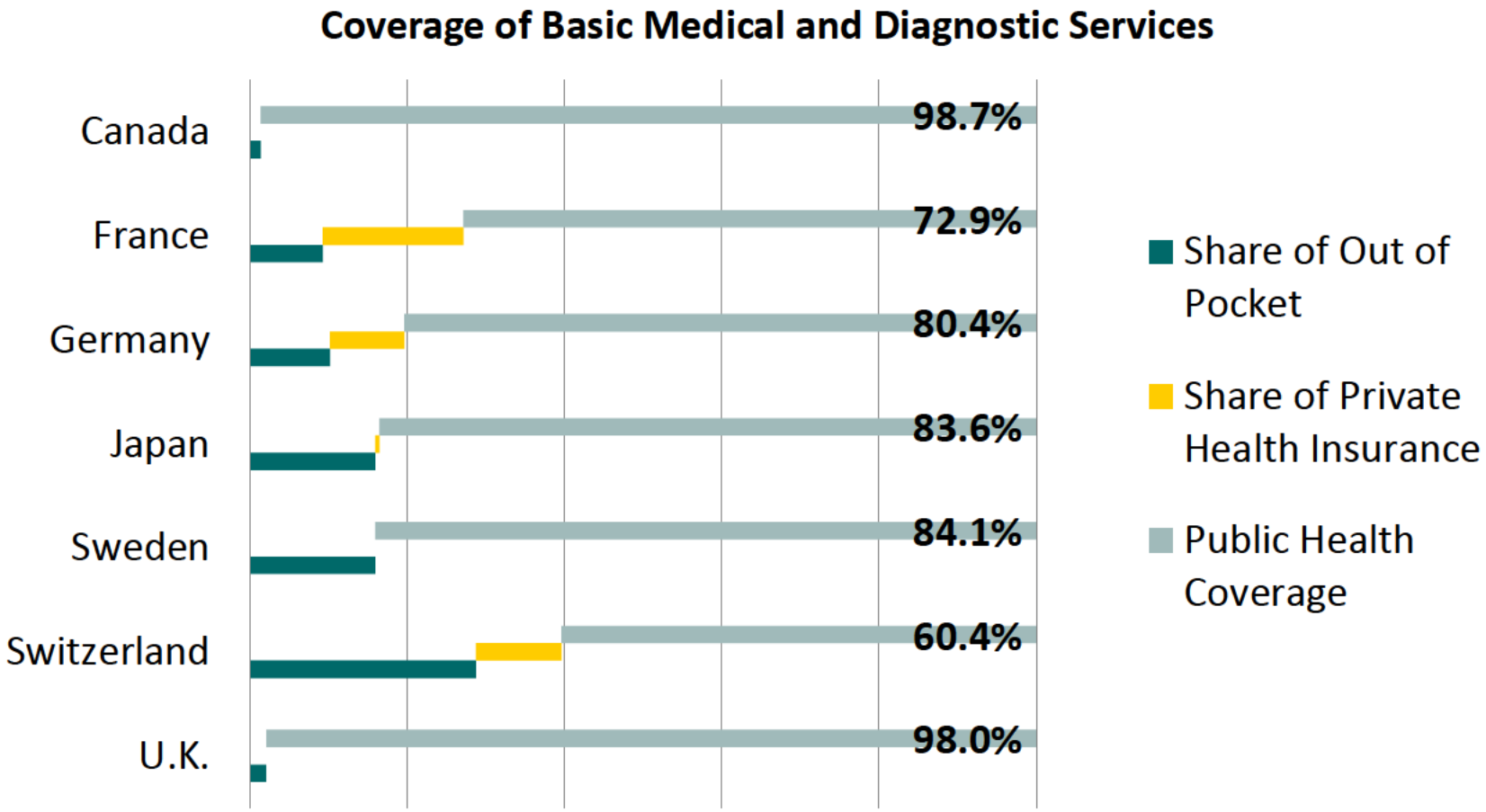
EXHIBIT 1

Employers' Responses to the Excise Tax, 2013

The International Foundation of Employee Benefit Plans asked 879 single-employer plans if they were taking action to avoid the 2018 excise tax.	
Yes	16.8%
No, but considering	40.0%
No, no plan to do so	13.5%
Not sure	9.6%
Not applicable, have no high-cost plans	20.0%
Employers that answered "yes," by size	
0–50	4.1%
51–499	13.1%
500–4,999	18.2%
5,000–9,999	18.5%
10,000+	29.4%

SOURCE International Foundation of Employee Benefit Plans, "2013 Employer-Sponsored Health Care: ACA's Impact: Survey Results," 2013.

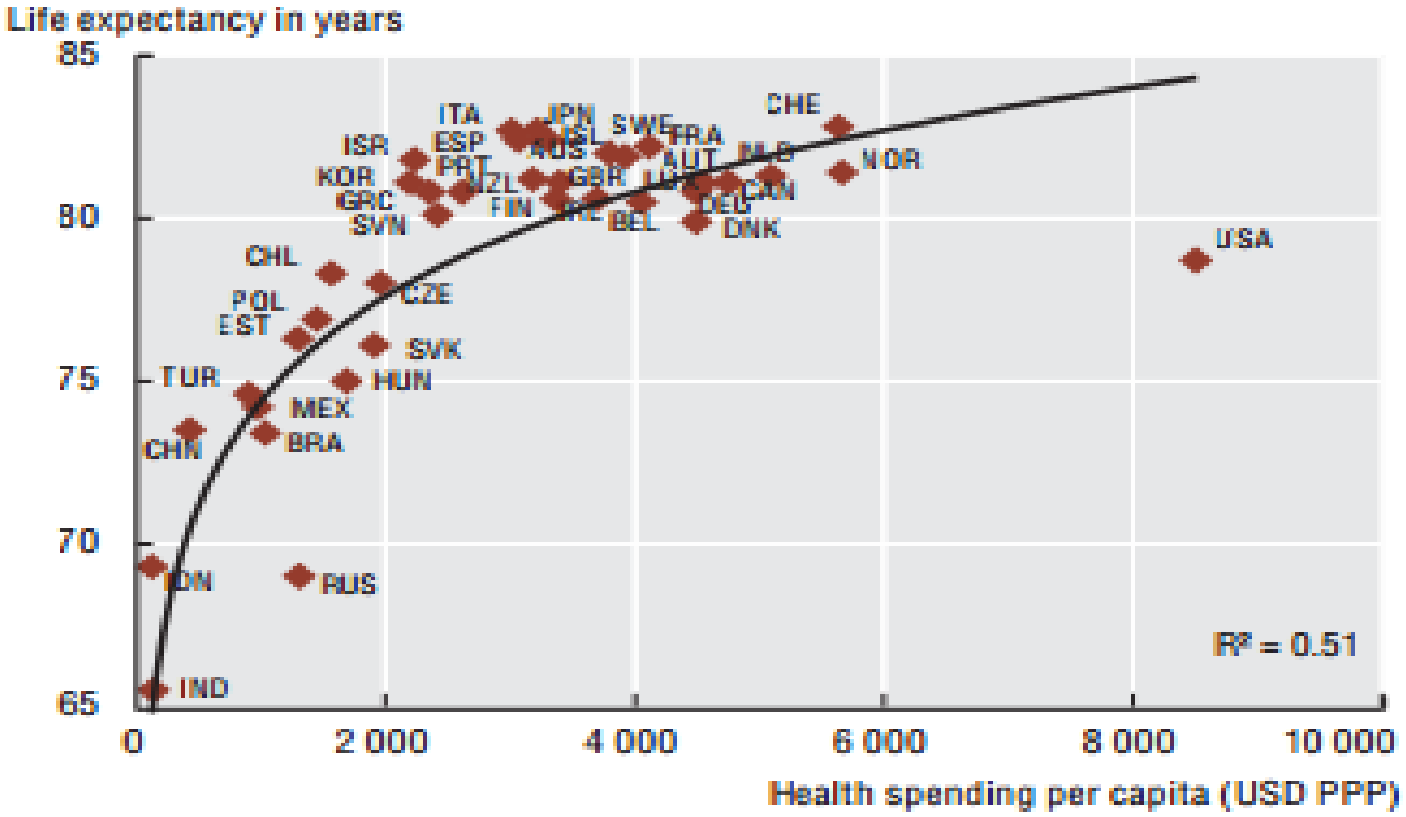
Level of Cost Sharing– International



Source: Paris, V., M. Devaux and L. Wei (2010), "Health Systems Institutional Characteristics: A Survey of 29 OECD Countries", OECD Health Working Papers, No. 50, OECD Publishing. Data from 2007 or last available year http://dx.doi.org/10.1787/5kmfxfq9qbnr-en

Spending and Health Outcomes

Life Expectancy at birth and health spending per capita, 2011 (or nearest year)



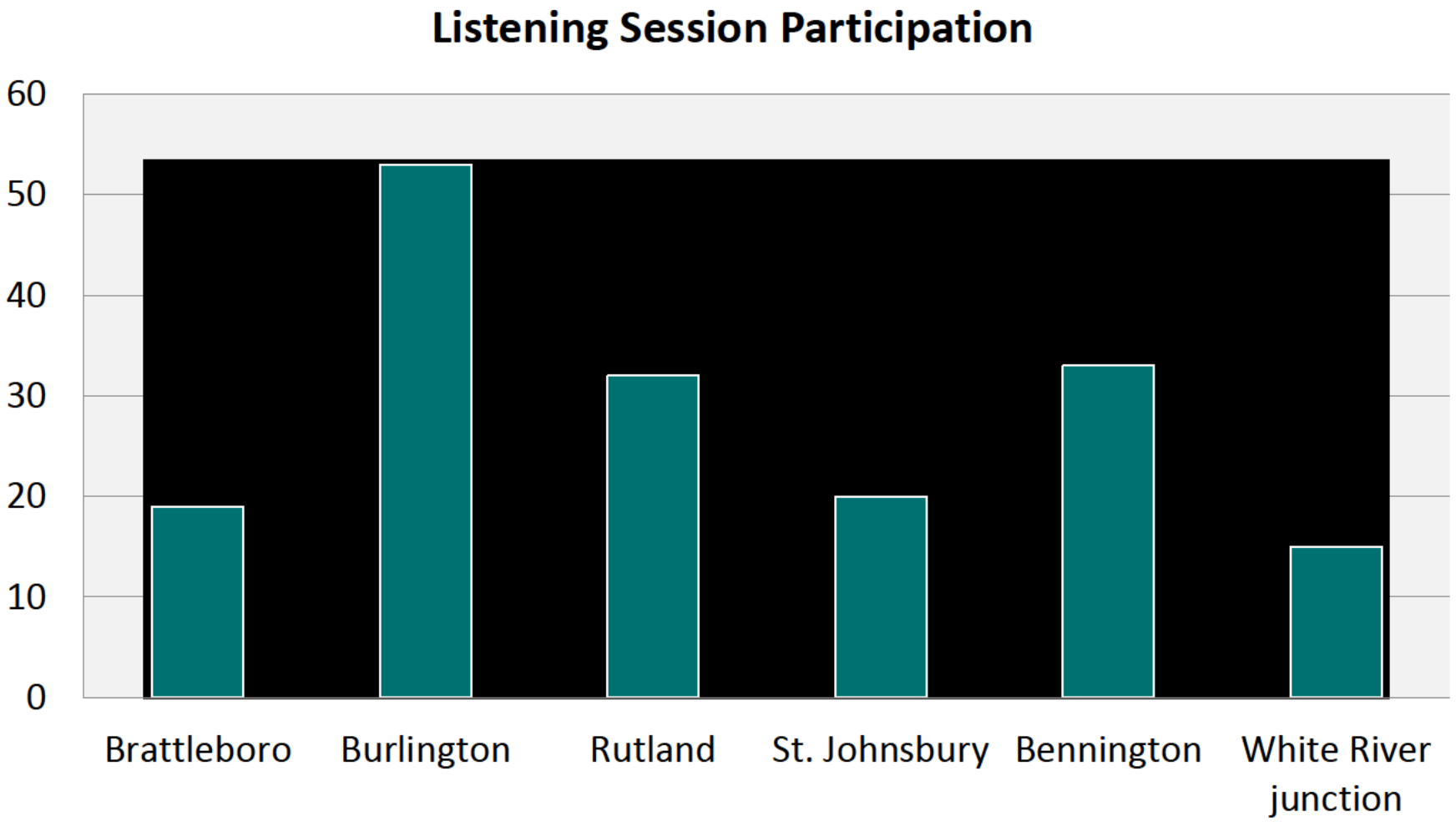
Source: OECD Health Statistics 2013, http://dx.doi.org/10.787/health-data-en; World Bank for non-OECD countries

PUBLIC INPUT

2012 Listening Sessions

- During the spring of 2012, AHS and AoA held a series of listening sessions around the state of Vermont to gather input on GMC's benefit design
  - April 25 – Brattleboro, Marlboro College Grad Center
  - May 2 – Burlington, City Hall Contois Auditorium
  - May 8 – Rutland Free Library, Fox Room
  - May 31 – Public Hearing with GMCB held at 11 VIT video-conferencing sites around the state
  - June 7 – St. Johnsbury, Catamount Arts
  - June 13- Bennington, Firehouse
  - June 20 – White River Junction, Hartford High School

2012 Listening Sessions



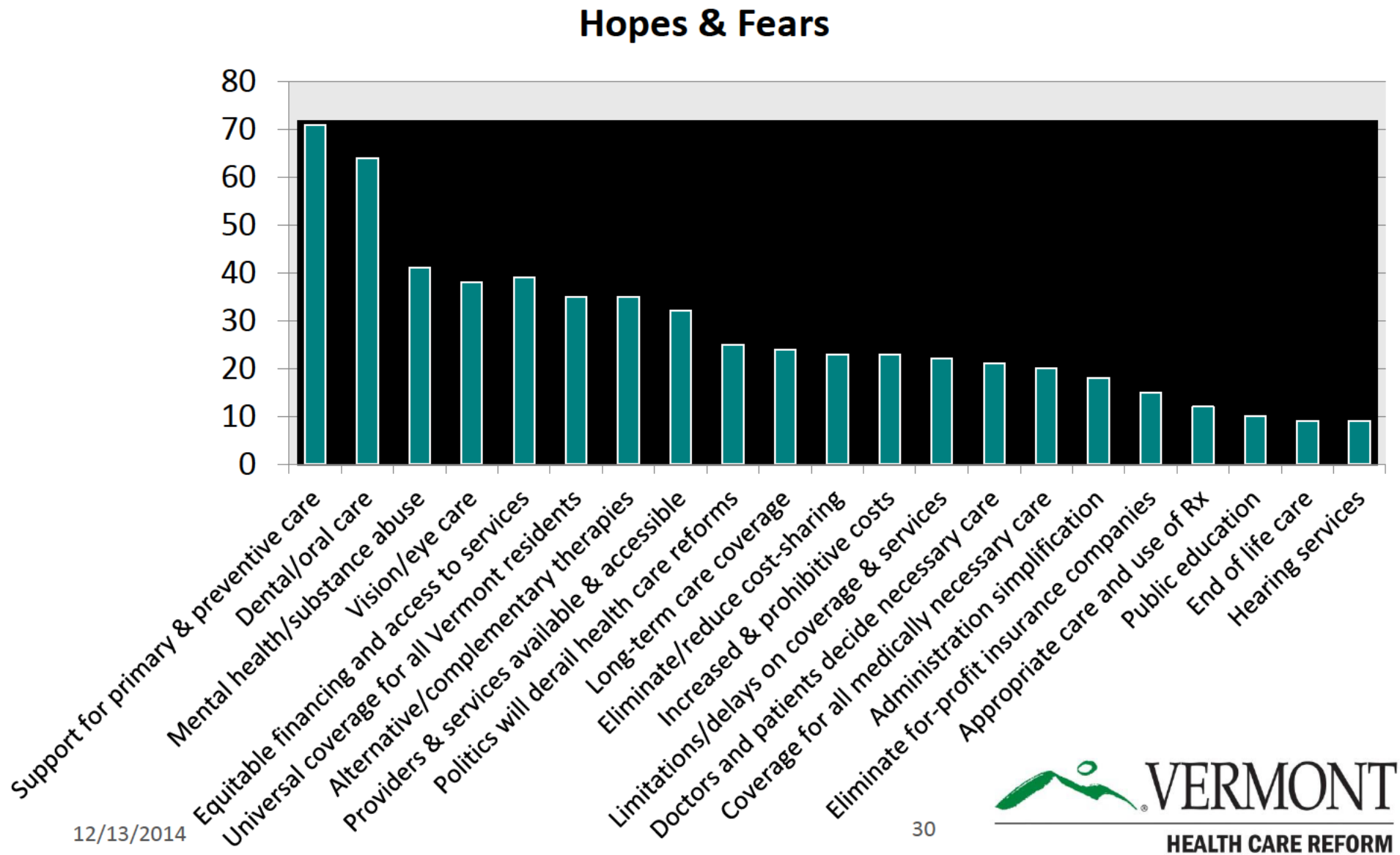
VERMONT
HEALTH CARE REFORM

2012 Listening Sessions

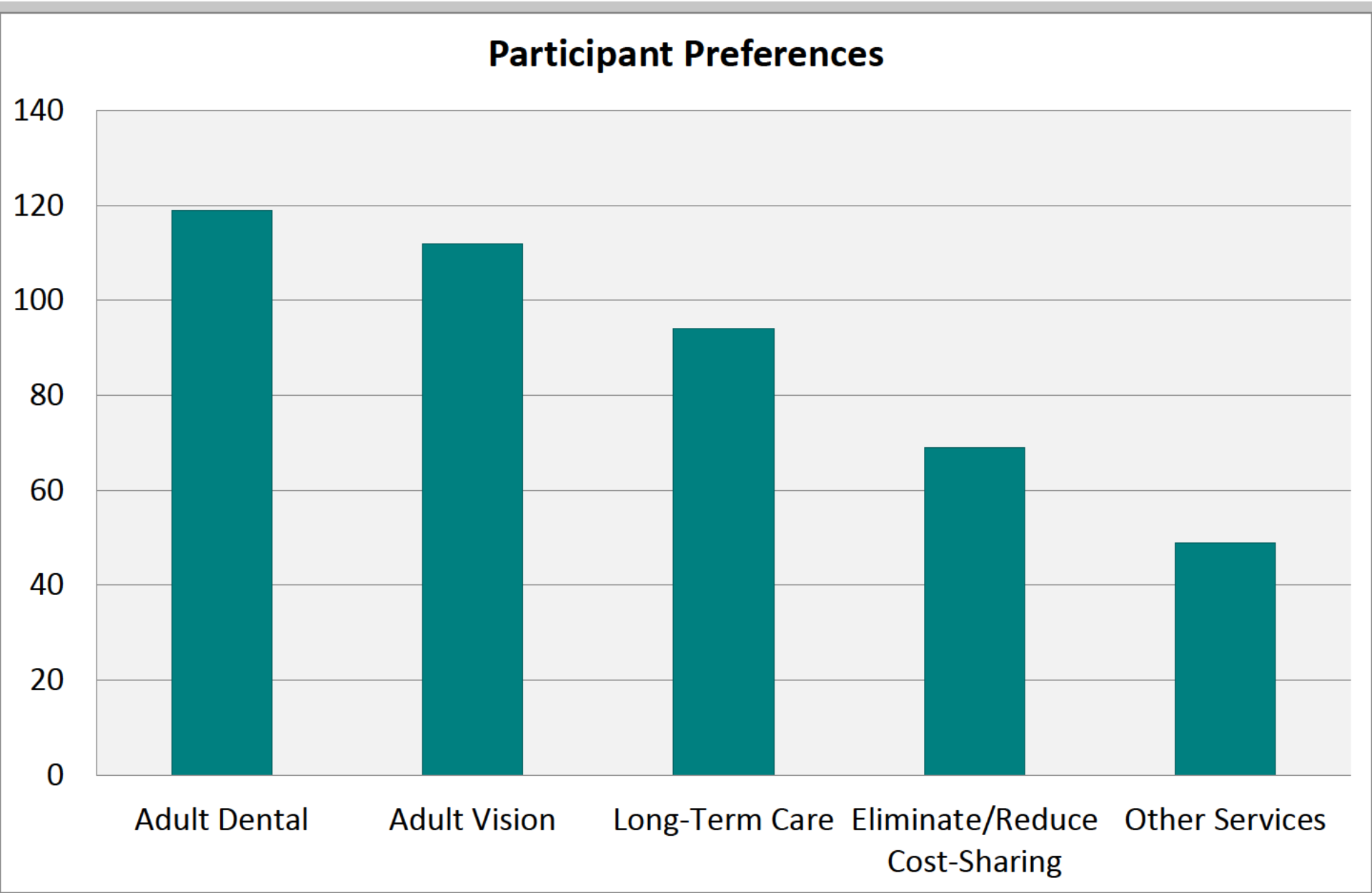
The listening sessions were divided into three components:

- Information- Health care reform implementation timeline and background information to frame discussion on benefit design.
- *Exercise #1* - Gathering open-ended feedback on hopes and fears from the public surrounding benefits and the single-payer system.
- *Exercise #2* - Setting priorities and examining the boundaries and limitations of a publicly financed system.

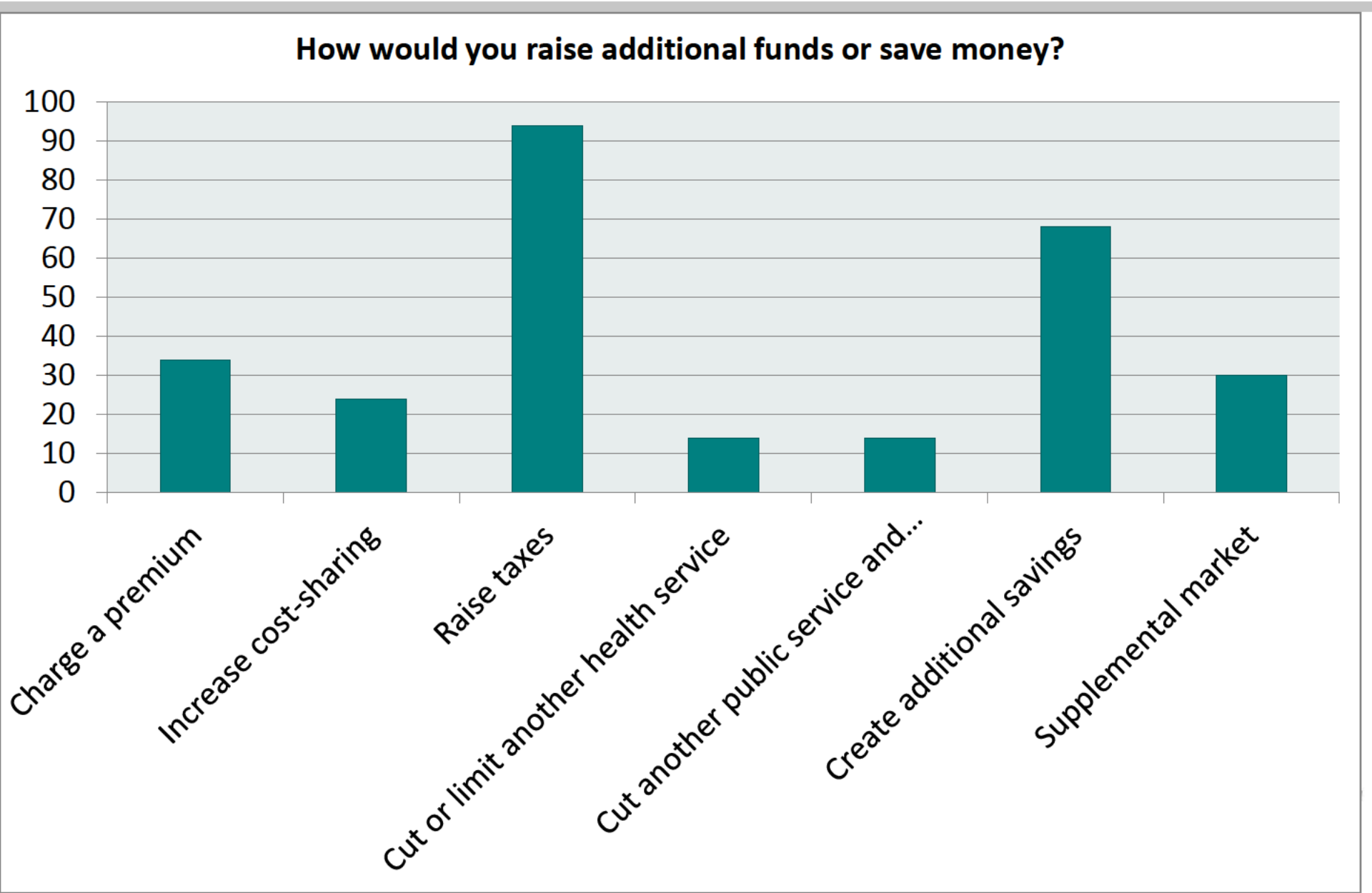
2012 Listening Sessions



2012 Listening Sessions



2012 Listening Sessions



Questions?

Appendix B-7. Presentation by Ellen Meara, Ph.D on Health Economics: Value Based Benefit Design

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Health Economics: Value-Based Benefits & Analytics

Vermont House Health Care Committee
Ellen Meara, PhD

MARCH 26, 2014

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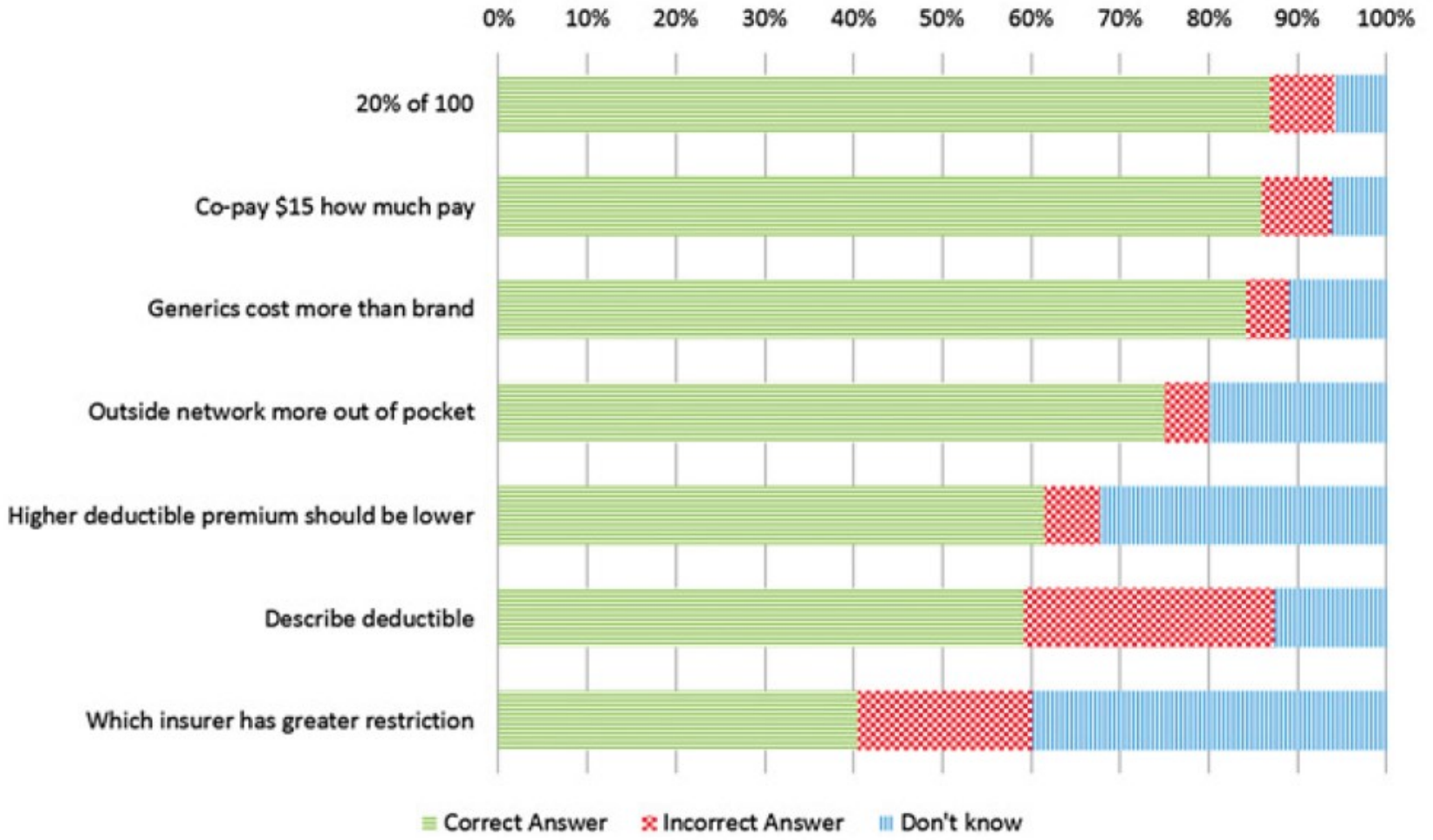
Context

Americans' (Lack of) Understanding of Health Insurance, 9/13



Source: Barcellos SH, Wuppermann AC, Carman KG, et al. Preparedness of Americans for the Affordable Care Act. *PNAS*. 2014.

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Goals

1. There is a tradeoff between insurance and costs
2. Cost-sharing lowers health care spending
3. Cost-sharing has unintended consequences

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Goals

1 **There is a tradeoff between insurance and costs**

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Tradeoff Between Insurance and Costs

Why do we want health insurance?	How is health insurance different?
Protection in case of (major) illness/injury	Not a one-time event like fires / accidents

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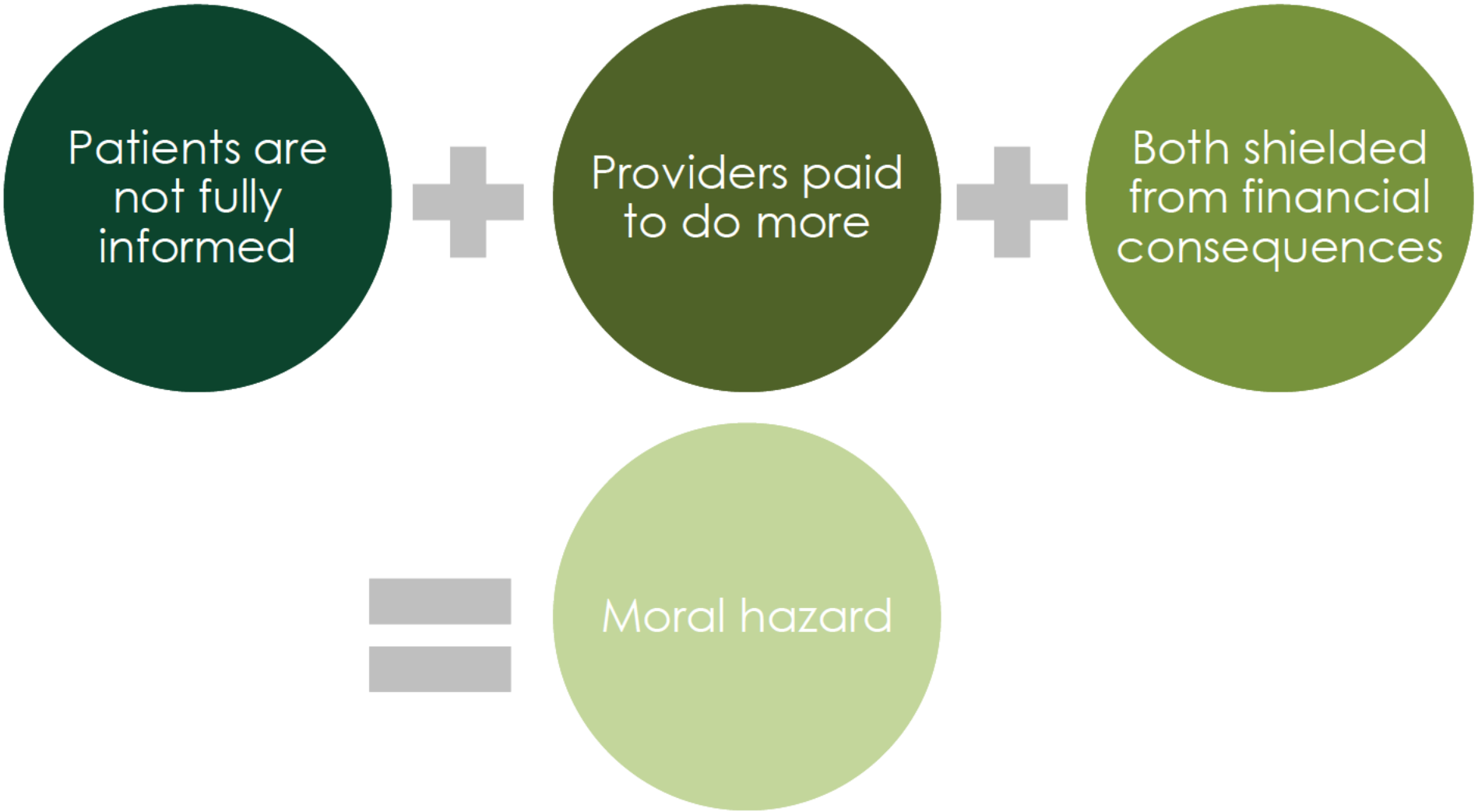
Tradeoff Between Insurance and Costs



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Goals

2 Cost-sharing lowers health care spending

3 Cost-sharing has unintended consequences

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Cost-Sharing Effects

How Has Cost-Sharing Been Used?

- Deductible and Coinsurance
- Copayment
- Tiered Formularies
- Value-Based Insurance Design
- High Deductibles

Cost-Sharing Effects

How Has Cost-Sharing Been Used?

Deductible and Coinsurance

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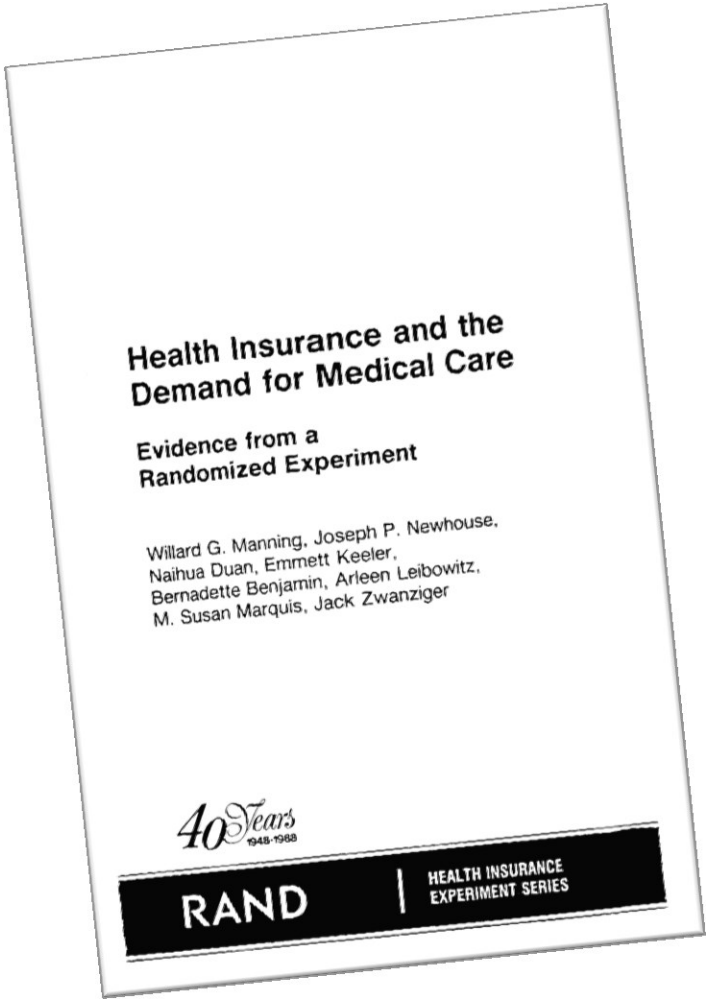
Cost-Sharing Effects: Deductible and Coinsurance



RAND Randomly Assigned 5,800 People

Plan (arm)	Coinsurance	Max Out-of-Pocket as % of Income	Deductible
Free Care	0%	NA	$0
25%	25%	5%	$0
50%	50%	10%	$0
95%	95%	15%	$0
Deductible	0%	NA	$150 – single $450 - family

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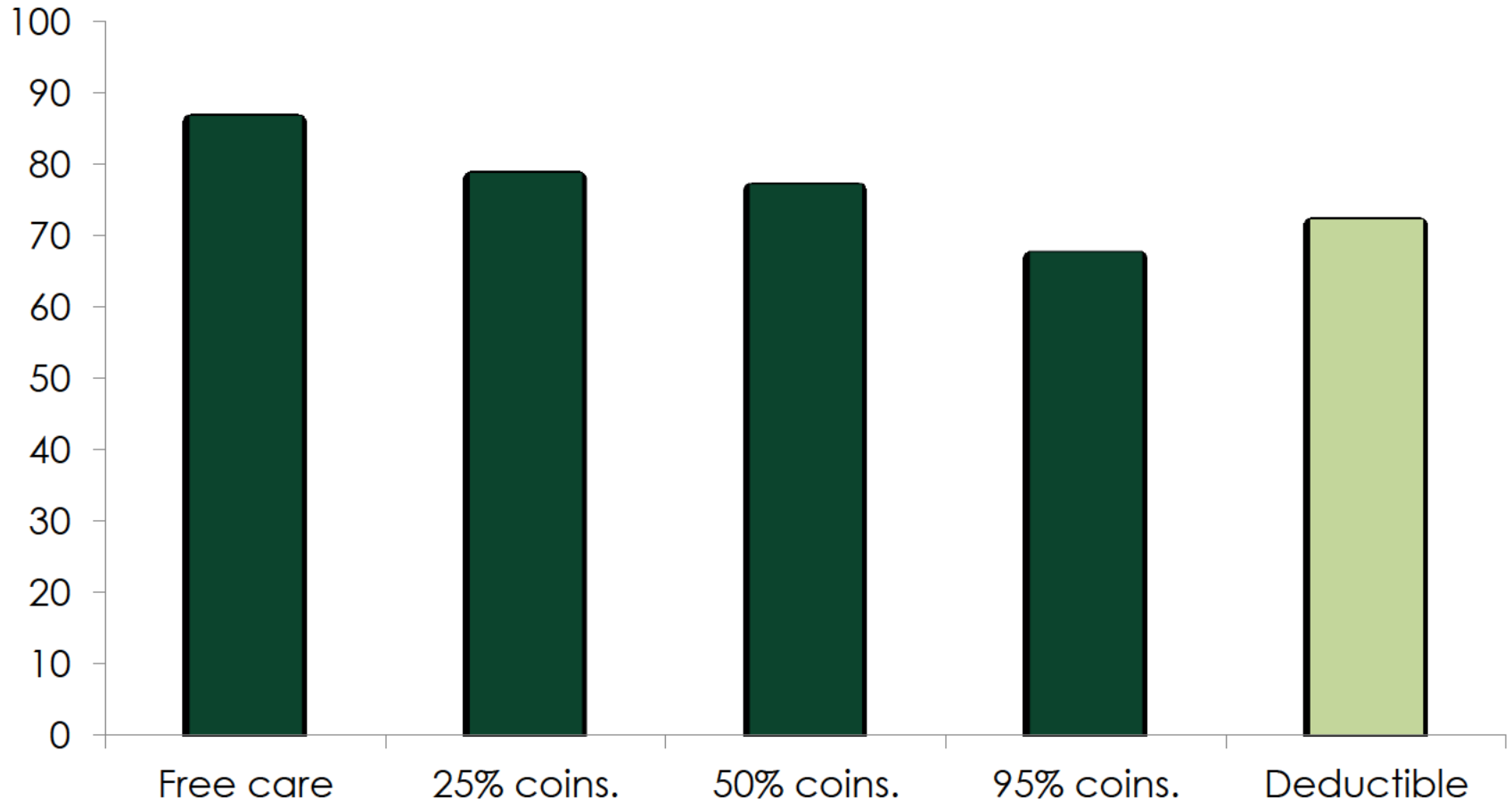
Cost-Sharing Effects: Deductible and Coinsurance

Percent of Beneficiaries Getting Any Medical Care



p-value<.0001 for difference across plans

Source: Manning et al. (1988). *Health Insurance and the Demand for Medical Care: Evidence from a Randomized Experiment*.

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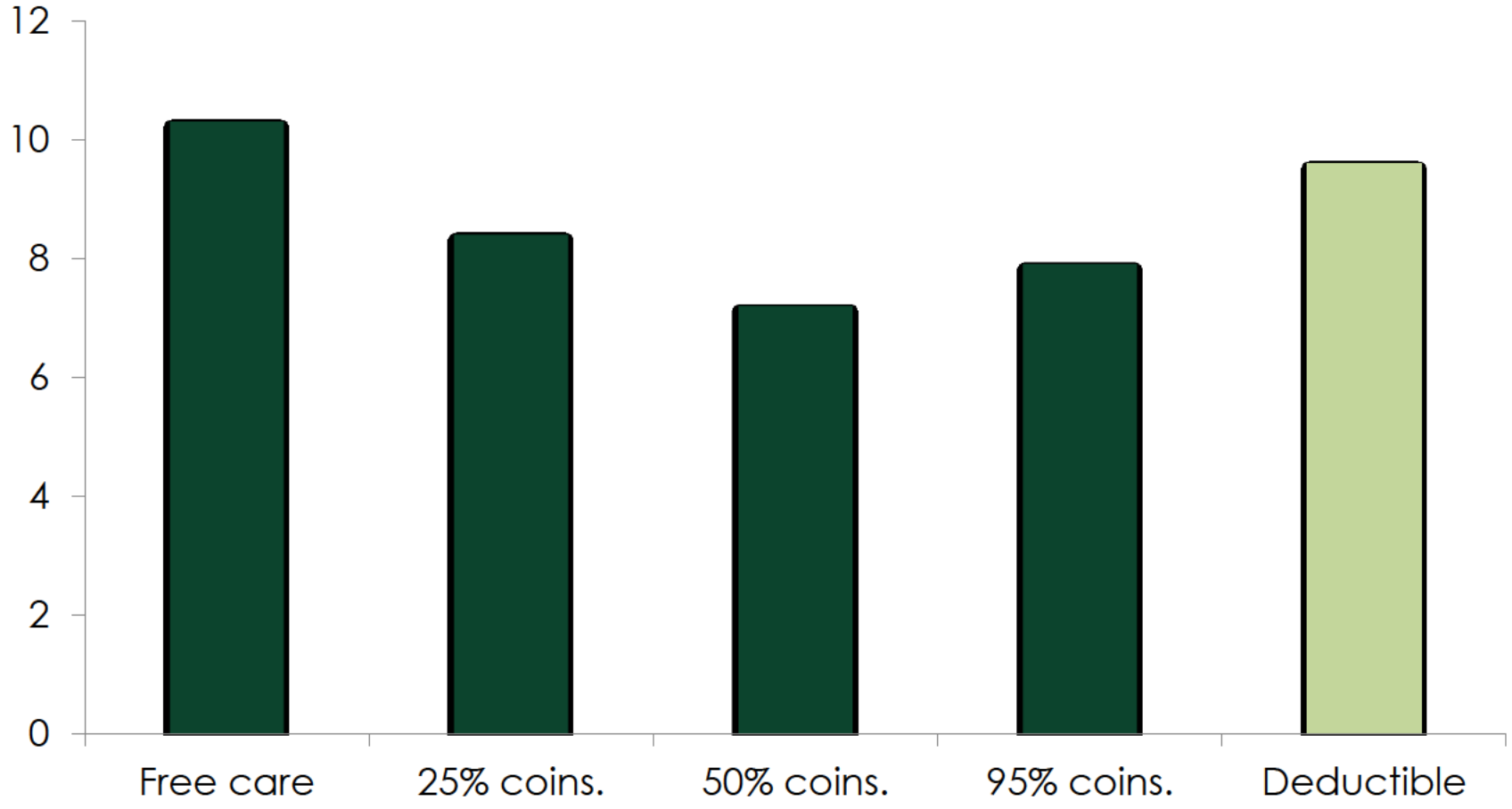
Cost-Sharing Effects: Deductible and Coinsurance

Percent of Beneficiaries with One or More Inpatient Admissions



p-value=.0006 for difference across plans

Source: Manning et al. (1988). *Health Insurance and the Demand for Medical Care: Evidence from a Randomized Experiment*.

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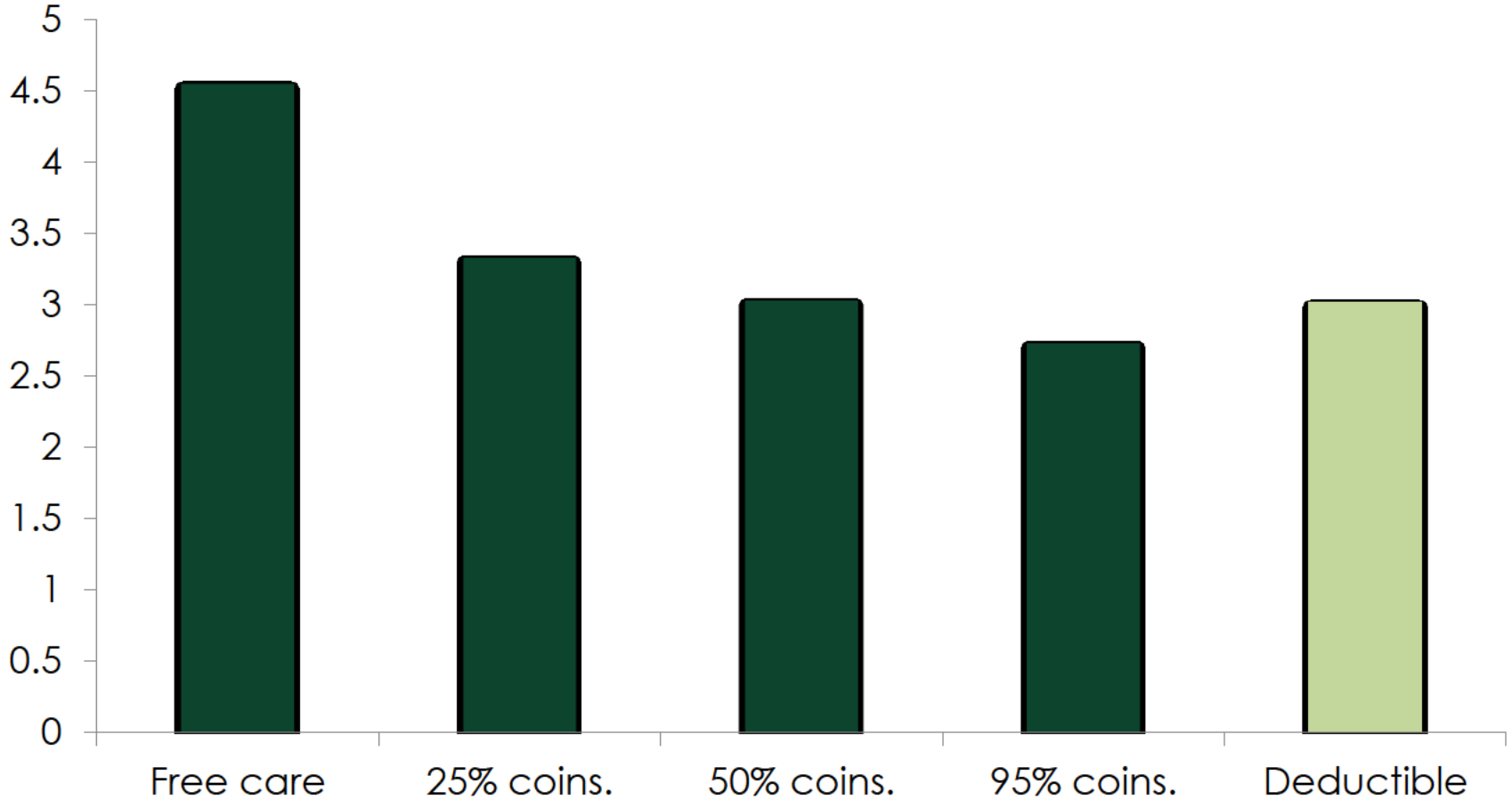
Cost-Sharing Effects: Deductible and Coinsurance

Annual Number of Face-to-Face Visits Per Beneficiary



p-value<.0001 for difference across plans

Source: Manning et al. (1988). *Health Insurance and the Demand for Medical Care: Evidence from a Randomized Experiment*.

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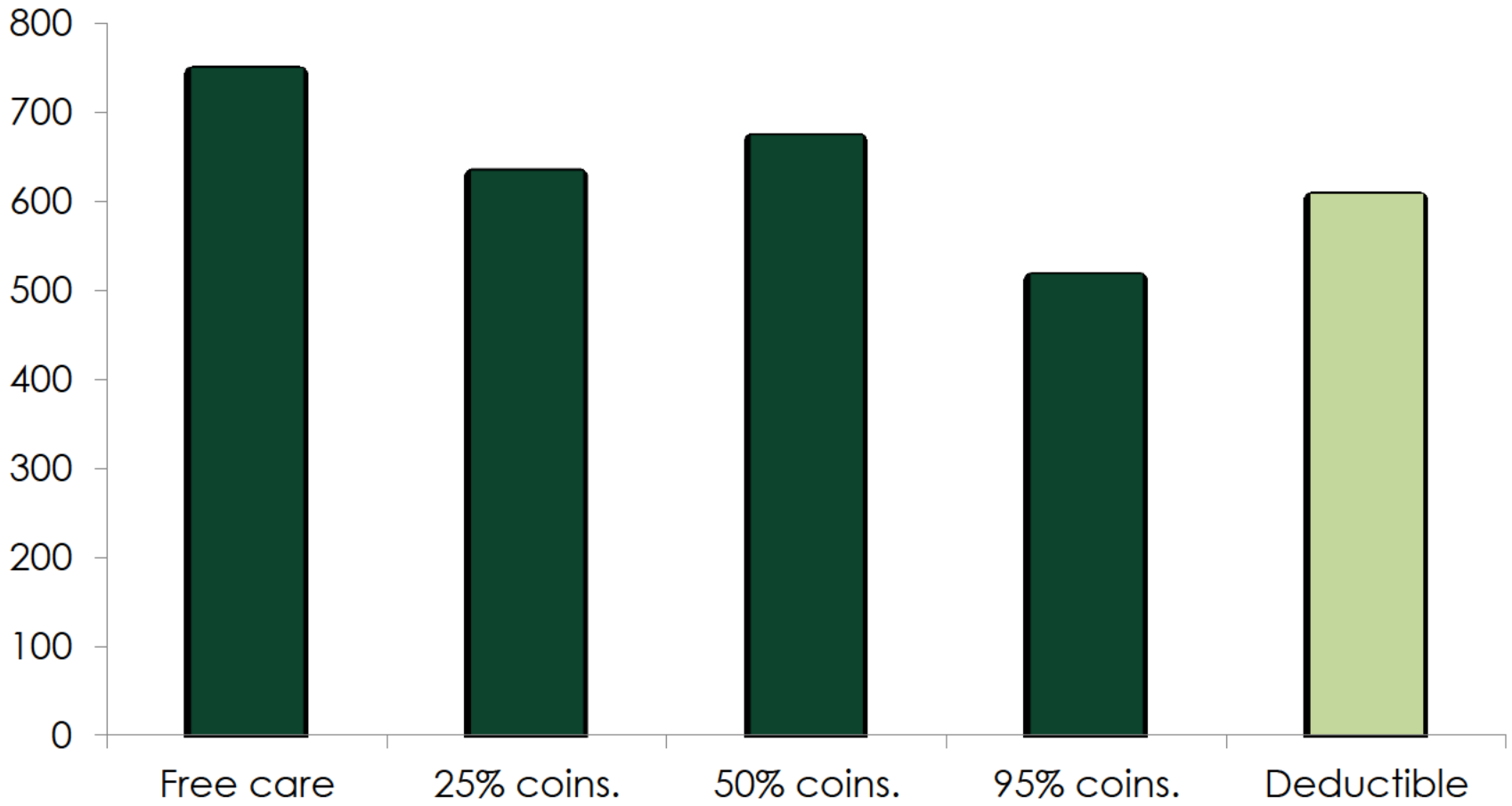
Cost-Sharing Effects: Deductible and Coinsurance

Total Annual Expenditures Per Beneficiary (1984 Dollars)



p-value=.003 for difference across plans

Source: Manning et al. (1988). *Health Insurance and the Demand for Medical Care: Evidence from a Randomized Experiment*.

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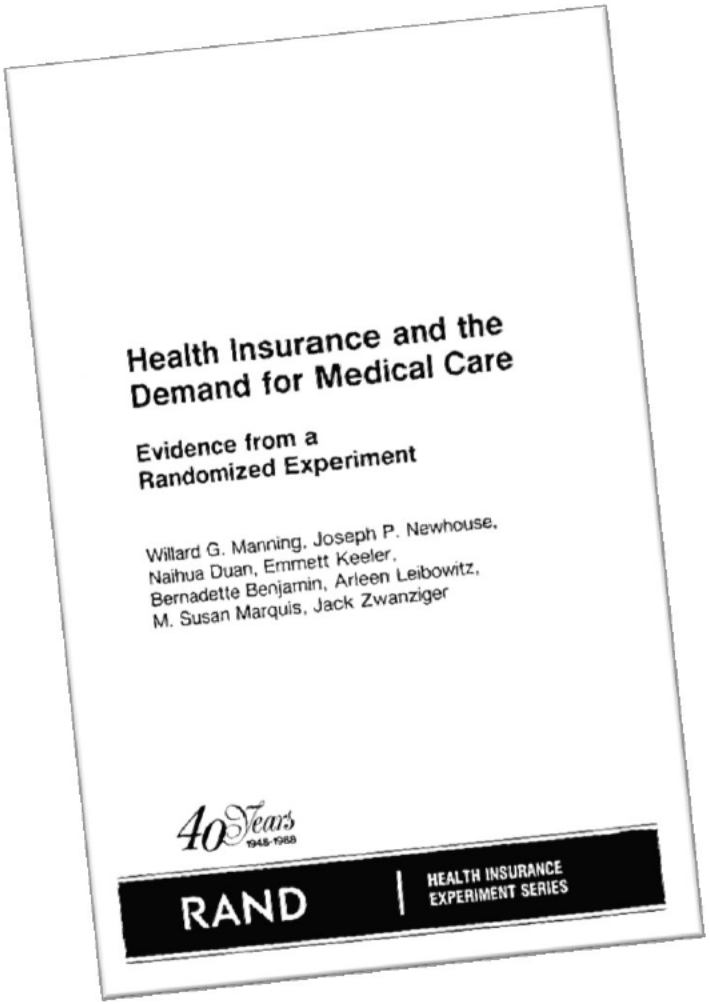
Cost-Sharing Effects: Deductible and Coinsurance



Utilization

Higher coinsurance **reduces effective and ineffective care** by same amount. A 10% rise in cost to patients led to 2% lower spending.

Outcomes

Higher coinsurance does not affect health outcomes for **healthy beneficiaries**.

Low-income groups at-risk of illness had adverse effects.

Cost-Sharing Effects

How Has Cost-Sharing Been Used?

Copayment

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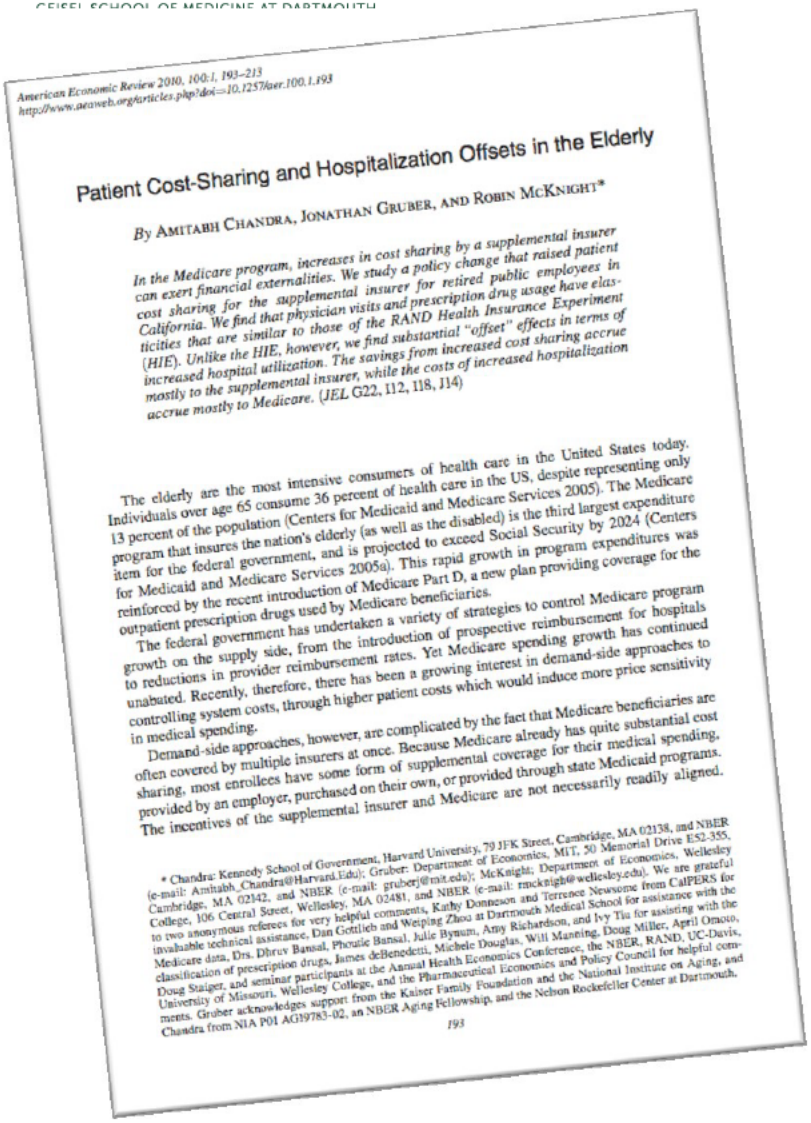
Cost-Sharing Effects: Copayment



American Economic Review 2010, 100:1, 193–213
http://www.aeaweb.org/articles.php?doi=10.1257/aer.100.1.193

Patient Cost-Sharing and Hospitalization Offsets in the Elderly

By Amitabh Chandra, Jonathan Gruber, and Robin McKnight*

In the Medicare program, increases in cost sharing by a supplemental insurer can exert financial externalities. We study a policy change that raised patient cost sharing for the supplemental insurer for retired public employees in California. We find that physician visits and prescription drug usage have elasticities that are similar to those of the RAND Health Insurance Experiment (HIE). Unlike the HIE, however, we find substantial "offset" effects in terms of increased hospital utilization. The savings from increased cost sharing accrue mostly to the supplemental insurer, while the costs of increased hospitalization accrue mostly to Medicare. (JEL G22, I12, I18, J14)

The elderly are the most intensive consumers of health care in the United States today. Individuals over age 65 consume 36 percent of health care in the US, despite representing only 13 percent of the population (Centers for Medicaid and Medicare Services 2005). The Medicare program that insures the nation's elderly (as well as the disabled) is the third largest expenditure item for the federal government, and is projected to exceed Social Security by 2024 (Centers for Medicaid and Medicare Services 2005a). This rapid growth in program expenditures was reinforced by the recent introduction of Medicare Part D, a new plan providing coverage for the outpatient prescription drugs used by Medicare beneficiaries.

The federal government has undertaken a variety of strategies to control Medicare program growth on the supply side, from the introduction of prospective reimbursement for hospitals to reductions in provider reimbursement rates. Yet Medicare spending growth has continued unabated. Recently, therefore, there has been a growing interest in demand-side approaches to controlling system costs, through higher patient costs which would induce more price sensitivity in medical spending.

Demand-side approaches, however, are complicated by the fact that Medicare beneficiaries are often covered by multiple insurers at once. Because Medicare already has quite substantial cost sharing, most enrollees have some form of supplemental coverage for their medical spending, provided by an employer, purchased on their own, or provided through state Medicaid programs. The incentives of the supplemental insurer and Medicare are not necessarily readily aligned.

* Chandra: Kennedy School of Government, Harvard University, 79 JFK Street, Cambridge, MA 02138, and NBER (e-mail: Amitabh_Chandra@Harvard.Edu); Gruber: Department of Economics, MIT, 50 Memorial Drive E52-355, Cambridge, MA 02142, and NBER (e-mail: gruberj@mit.edu); McKnight: Department of Economics, Wellesley College, 106 Central Street, Wellesley, MA 02481, and NBER (e-mail: rmcknigh@wellesley.edu). We are grateful to two anonymous referees for very helpful comments, Kathy Donneson and Terrence Newsome from CalPERS for invaluable technical assistance, Dan Gottlieb and Weiping Zhou at Dartmouth Medical School for assistance with the Medicare data, Drs. Dhruv Bansal, Phoutle Bansal, Julie Bynum, Amy Richardson, and Ivy Tiu for assisting with the classification of prescription drugs, James deBenedetti, Michele Douglas, Will Manning, Doug Miller, April Omoto, Doug Staiger, and seminar participants at the Annual Health Economics Conference, the NBER, RAND, UC-Davis, University of Missouri, Wellesley College, and the Pharmaceutical Economics and Policy Council for helpful comments. Gruber acknowledges support from the Kaiser Family Foundation and the National Institute on Aging, and Chandra from NIA P01 AG19783-02, an NBER Aging Fellowship, and the Nelson Rockefeller Center at Dartmouth.

Utilization

10% rise in price leads to 1.5% **decline** in utilization.

Reductions occurred for acute, chronic, other drugs.

Outcomes

Hospitalizations went up (especially for sickest)

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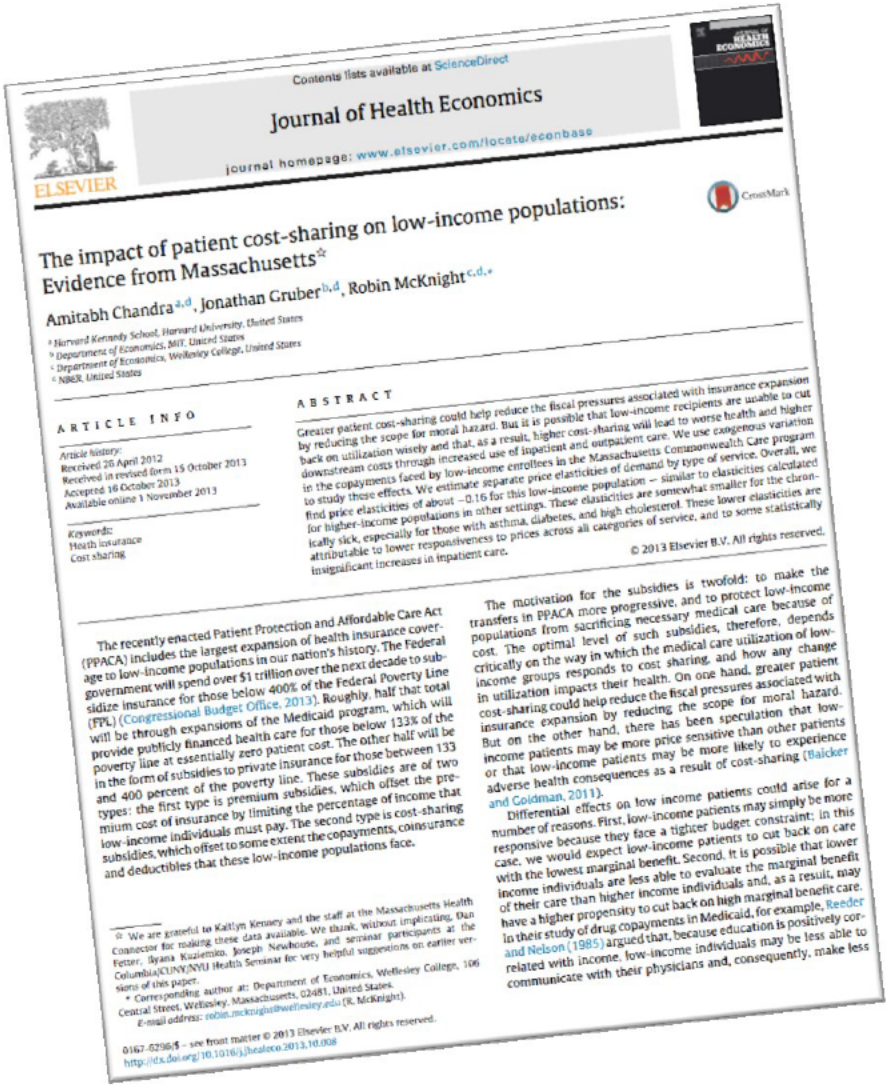
Cost-Sharing Effects: Copayment



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The impact of patient cost-sharing on low-income populations: Evidence from Massachusetts☆

Amitabh Chandra[a,d], Jonathan Gruber[b,d], Robin McKnight[c,d,*]

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ABSTRACT

Greater patient cost-sharing could help reduce the fiscal pressures associated with insurance expansion by reducing the scope for moral hazard. But it is possible that low-income recipients are unable to cut back on utilization wisely and that, as a result, higher cost-sharing will lead to worse health and higher downstream costs through increased use of inpatient and outpatient care. We use exogenous variation in the copayments faced by low-income enrollees in the Massachusetts Commonwealth Care program to study these effects. We estimate separate price elasticities of demand by type of service. Overall, we find price elasticities of about −0.16 for this low-income population – similar to elasticities calculated for higher-income populations in other settings. These elasticities are somewhat smaller for the chronically sick, especially for those with asthma, diabetes, and high cholesterol. These lower elasticities are attributable to lower responsiveness to prices across all categories of service, and to some statistically insignificant increases in inpatient care.

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The recently enacted Patient Protection and Affordable Care Act (PPACA) includes the largest expansion of health insurance coverage to low-income populations in our nation's history. The Federal government will spend over $1 trillion over the next decade to subsidize insurance for those below 400% of the Federal Poverty Line (FPL) (Congressional Budget Office, 2013). Roughly half that total will be through expansions of the Medicaid program, which will provide publicly financed health care for those below 133% of the poverty line at essentially zero patient cost. The other half will be in the form of subsidies to private insurance for those between 133 and 400 percent of the poverty line. These subsidies are of two types: the first type is premium subsidies, which offset the premium cost of insurance by limiting the percentage of income that low-income individuals must pay. The second type is cost-sharing subsidies, which offset to some extent the copayments, coinsurance and deductibles that these low-income populations face.

The motivation for the subsidies is twofold: to make the transfers in PPACA more progressive, and to protect low-income populations from sacrificing necessary medical care because of cost. The optimal level of such subsidies, therefore, depends critically on the way in which the medical care utilization of low-income groups responds to cost sharing, and how any change in utilization impacts their health. On one hand, greater patient cost-sharing could help reduce the fiscal pressures associated with insurance expansion by reducing the scope for moral hazard. But on the other hand, there has been speculation that low-income patients may be more price sensitive than other patients or that low-income patients may be more likely to experience adverse health consequences as a result of cost-sharing (Baicker and Goldman, 2011).

Differential effects on low income patients could arise for a number of reasons. First, low-income patients may simply be more responsive because they face a tighter budget constraint; in this case, we would expect low-income patients to cut back on care with the lowest marginal benefit. Second, it is possible that lower income individuals are less able to evaluate the marginal benefit of their care than higher income individuals and, as a result, may have a higher propensity to cut back on high marginal benefit care. In their study of drug copayments in Medicaid, for example, Reeder and Nelson (1985) argued that, because education is positively correlated with income, low-income individuals may be less able to communicate with their physicians and, consequently, make less

☆ We are grateful to Kaitlyn Kenney and the staff at the Massachusetts Health Connector for making these data available. We thank, without implicating, Dan Fetter, Iryana Kuziemko, Joseph Newhouse, and seminar participants at the Columbia|CUNY|NYU Health Seminar for very helpful suggestions on earlier versions of this paper.

* Corresponding author at: Department of Economics, Wellesley College, 106 Central Street, Wellesley, Massachusetts, 02481, United States.
E-mail address: robin.mcknight@wellesley.edu (R. McKnight).

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http://dx.doi.org/10.1016/j.jhealeco.2013.10.008

Utilization

Higher copayments lead to decreased **utilization**.

Outcomes

Higher copayments **do not result** in a hospital offset.

Cost-Sharing Effects

How Has Cost-Sharing Been Used?

Tiered Formularies

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Cost-Sharing Effects: Tiered Formularies

The NEW ENGLAND JOURNAL of MEDICINE

SPECIAL ARTICLE

The Effect of Incentive-Based Formularies on Prescription-Drug Utilization and Spending

Halden A. Huskamp, Ph.D., Patricia A. Deverka, M.D., Arnold M. Epstein, M.D., Robert S. Epstein, M.D., Kimberly A. McGuigan, Ph.D., and Richard G. Frank, Ph.D.

ABSTRACT

BACKGROUND
Many employers and health plans have adopted incentive-based formularies in an attempt to control prescription-drug costs.

METHODS
We used claims data to compare the utilization of and spending on drugs in two employer-sponsored health plans that implemented changes in formulary administration with those in comparison groups of enrollees covered by the same insurers. One plan simultaneously switched from a one-tier to a three-tier formulary and increased all enrollee copayments for medications. The second switched from a two-tier to a three-tier formulary, changing only the copayments for tier-3 drugs. We examined the utilization of angiotensin-converting–enzyme (ACE) inhibitors, proton-pump inhibitors, and 3-hydroxy-3-methylglutaryl coenzyme A reductase inhibitors (statins).

RESULTS
Enrollees covered by the employer that implemented more dramatic changes experienced slower growth than the comparison group in the probability of the use of a drug and a major shift in spending from the plan to the enrollee. Among the enrollees who were initially taking tier-3 statins, more enrollees in the intervention group than in the comparison group switched to tier-1 or tier-2 medications (49 percent vs. 17 percent, $P<0.001$) or stopped taking statins entirely (21 percent vs. 11 percent, $P=0.04$). Patterns were similar for ACE inhibitors and proton-pump inhibitors. The enrollees covered by the employer that implemented more moderate changes were more likely than the comparison enrollees to switch to tier-1 or tier-2 medications but not to stop taking a given class of medications altogether.

CONCLUSIONS
Different changes in formulary administration may have dramatically different effects on utilization and spending and may in some instances lead enrollees to discontinue therapy. The associated changes in copayments can substantially alter out-of-pocket spending by enrollees, the continuation of the use of medications, and possibly the quality of care.

From the Department of Health Care Policy, Harvard Medical School (H.A.H., R.G.F.); the Department of Health Policy and Management, Harvard School of Public Health (A.M.E.); and the Section on Health Services and Policy Research, Department of Medicine, Brigham and Women's Hospital (A.M.E.) — all in Boston; and Medco Health Solutions, Franklin Lakes, N.J. (P.A.D., R.S.E., K.A.M.). Address reprint requests to Dr. Huskamp at the Department of Health Care Policy, Harvard Medical School, 180 Longwood Ave., Boston, MA 02115, or at huskamp@hcp.med.harvard.edu.

N Engl J Med 2003;349:2224-32.
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Utilization

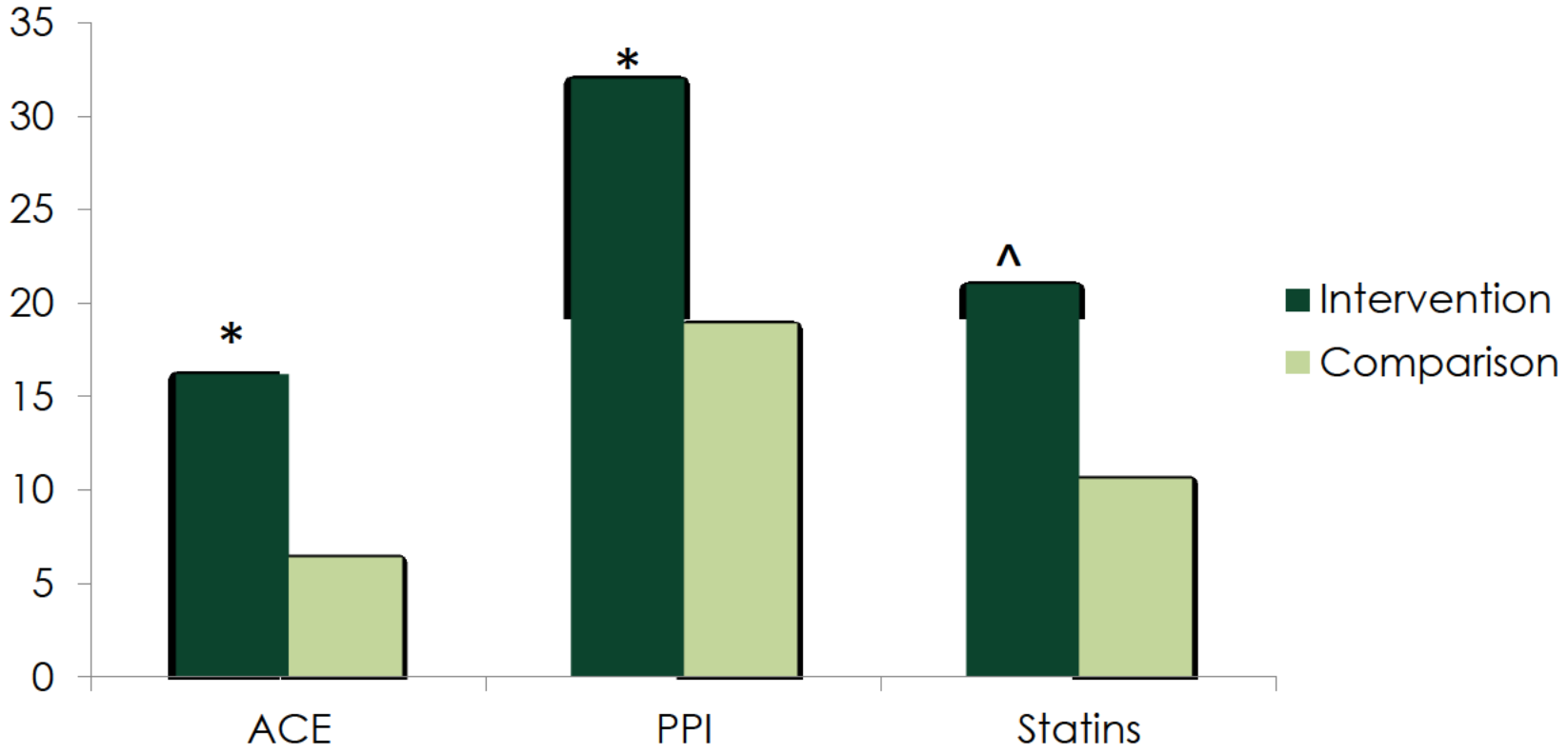
Drug spending **declined**, regardless of drug class.

Outcomes

Some patients **stopped** altogether.

Cost-Sharing Effects: Tiered Formularies

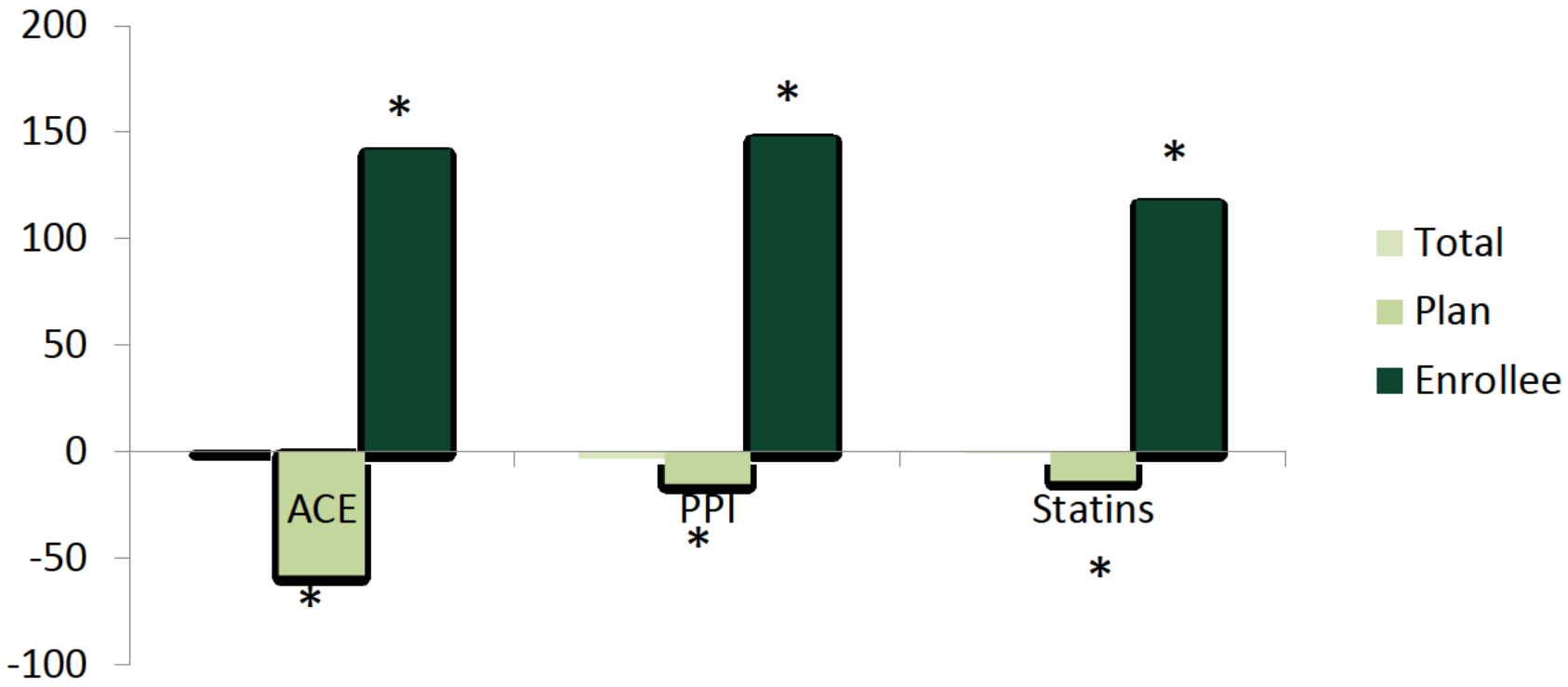
Percent Discontinuing Use in Drug Class



* P <.0001 for difference between intervention & comparison groups
^ P =.04 for difference between intervention & comparison

Cost-Sharing Effects: Tiered Formularies

Percentage Point Change In Spending, Intervention – Control Group



*P <.0001 for difference between intervention & comparison groups

Cost-Sharing Effects

How Has Cost-Sharing Been Used?

Value-Based Insurance Design

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Cost-Sharing Effects: Value-Based Insurance Design

Utilization

10% drop in price leads **to 1-4% rise** in Rx use

Cost-Sharing Effects

How Has Cost-Sharing Been Used?

High Deductibles

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Cost-Sharing Effects: High Deductibles

POLICY

Healthcare Spending and Preventive Care in High-Deductible and Consumer-Directed Health Plans

Melinda Beeuwkes Buntin, PhD; Amelia M. Haviland, PhD; Roland McDevitt, PhD; and Neeraj Sood, PhD

Objective: To investigate the effects of high-deductible health plans (HDHPs) and consumer-directed health plans (CDHPs) on healthcare spending and on the use of recommended preventive care.

Study Design: Retrospective study.

Methods: We analyzed claims and enrollment data for 806,707 households from 53 large US employers, 28 of which offered HDHPs or CDHPs. We estimated the effects of HDHP or CDHP enrollment on healthcare cost growth between 2004 and 2005 using a difference-in-difference method that compared cost growth for families who were enrolled in HDHPs or CDHPs for the first time in 2005 with cost growth for families who were not offered HDHPs or CDHPs. Control families were weighted using propensity score weights to match the treatment families. Using similar methods, we examined the effects of HDHP or CDHP enrollment on the use of preventive care and the effects of HDHP or CDHP offering by employers on the mean cost growth.

Results: Families enrolling in HDHPs or CDHPs for the first time spent 14% less than similar families enrolled in conventional plans. Families in firms offering an HDHP or a CDHP spent less than those in other firms. Significant savings for enrollees were realized only for plans with deductibles of at least $1000, and savings decreased with generous employer contributions to healthcare accounts. Enrollment in HDHPs or CDHPs was also associated with moderate reductions in the use of preventive care.

Conclusions: The HDHPs or CDHPs with at least a $1000 deductible significantly reduced healthcare spending, but they also reduced the use of preventive care in the first year. This merits additional study because of concerns about enrollee health.

(Am J Manag Care. 2011;17(8):222-230)

For author information and disclosures, see end of text.

Curbing increases in healthcare costs is a top priority for policy makers and for employers. Many believe that high-deductible health plans (HDHPs), also known as consumer-directed health plans (CDHPs), when coupled with personal savings accounts, might be one way to hold down costs. These plans, intended to make patients more cost conscious, are becoming increasingly popular, and healthcare reform may foster further growth in enrollment. As of 2009, 20% of Americans with employer coverage were enrolled in a plan with a deductible high enough to be eligible for a health savings account. Among those purchasing coverage directly, 47% had a deductible at least this high.[1] A survey of large employers at the beginning of 2010 found that more than 54% offered at least 1 CDHP option, and another 7% were planning in 2011 to adopt one.[2] Growth is expected from 2 sources, mainly CDHPs with low premiums offered through health insurance exchanges and more CDHP offerings in the employer market because of taxes placed on generous "Cadillac" plans.

Despite growing enrollment, little is known about the effects of HDHPs or CDHPs on healthcare costs and on the use of necessary care. Even less is known about the influence of specific HDHP or CDHP provisions, including deductible levels and account offerings.[3] Both questions are of key importance for those who are selecting plans in the employer or individual market. Part of the problem is the lack of good pre-post data for persons enrolling in diverse HDHP or CDHP and conventional plans. Most evidence is limited to studies with data from a single carrier, a single employer, or a single year; therefore, the findings may not apply outside of those settings. A review of these studies concluded that moving consumers from traditional plans to high-deductible plans could result in significant savings; however, coupling these plans with funded personal accounts could reduce this effect.[4] More recent work suggests that some CDHP plan designs might lead to higher spending over time, to discontinuation of chronic disease medications by patients, and to decreased use of office visits, hospitalizations, and emergency department care.[5-8] Other peer-reviewed studies[9-11] have found instances in which CDHP enrollment has no discernible effect on the use of preventive care. Reviewing a set of industry studies, the American

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eAppendixes 1 to 5

Utilization

Reduction in utilization overall, even for free preventive care

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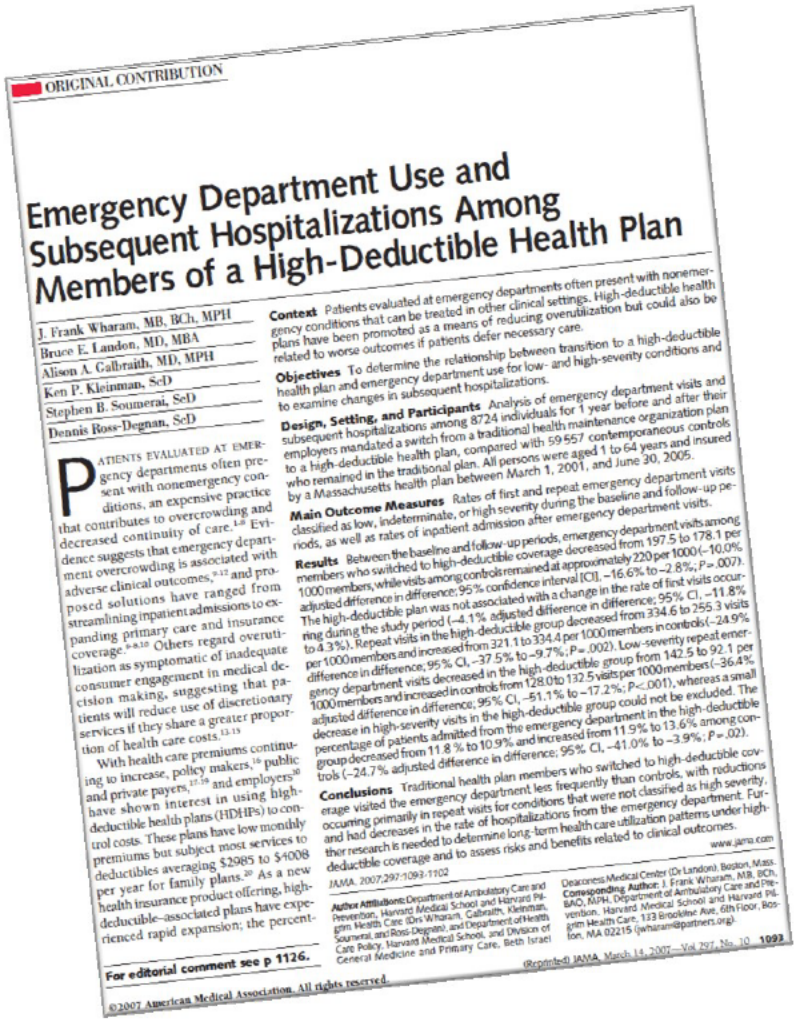
Cost-Sharing Effects: High Deductibles



ORIGINAL CONTRIBUTION

Emergency Department Use and Subsequent Hospitalizations Among Members of a High-Deductible Health Plan

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Context Patients evaluated at emergency departments often present with nonemergency conditions that can be treated in other clinical settings. High-deductible health plans have been promoted as a means of reducing overutilization but could also be related to worse outcomes if patients defer necessary care.

Objectives To determine the relationship between transition to a high-deductible health plan and emergency department use for low- and high-severity conditions and to examine changes in subsequent hospitalizations.

Design, Setting, and Participants Analysis of emergency department visits and subsequent hospitalizations among 8724 individuals for 1 year before and after their employers mandated a switch from a traditional health maintenance organization plan to a high-deductible health plan, compared with 59 557 contemporaneous controls who remained in the traditional plan. All persons were aged 1 to 64 years and insured by a Massachusetts health plan between March 1, 2001, and June 30, 2005.

Main Outcome Measures Rates of first and repeat emergency department visits classified as low, indeterminate, or high severity during the baseline and follow-up periods, as well as rates of inpatient admission after emergency department visits.

Results Between the baseline and follow-up periods, emergency department visits among members who switched to high-deductible coverage decreased from 197.5 to 178.1 per 1000 members, while visits among controls remained at approximately 220 per 1000 (−10.0% adjusted difference in difference; 95% confidence interval [CI], −16.6% to −2.8%; $P=.007$). The high-deductible plan was not associated with a change in the rate of first visits occurring during the study period (−4.1% adjusted difference in difference; 95% CI, −11.8% to 4.3%). Repeat visits in the high-deductible group decreased from 334.6 to 255.3 visits per 1000 members and increased from 321.1 to 334.4 per 1000 members in controls (−24.9% difference in difference; 95% CI, −37.5% to −9.7%; $P=.002$). Low-severity repeat emergency department visits decreased in the high-deductible group from 142.5 to 92.1 per 1000 members and increased in controls from 128.0 to 132.5 visits per 1000 members (−36.4% adjusted difference in difference; 95% CI, −51.1% to −17.2%; $P<.001$), whereas a small decrease in high-severity visits in the high-deductible group could not be excluded. The percentage of patients admitted from the emergency department in the high-deductible group decreased from 11.8 % to 10.9% and increased from 11.9% to 13.6% among controls (−24.7% adjusted difference in difference; 95% CI, −41.0% to −3.9%; $P=.02$).

Conclusions Traditional health plan members who switched to high-deductible coverage visited the emergency department less frequently than controls, with reductions occurring primarily in repeat visits for conditions that were not classified as high severity, and had decreases in the rate of hospitalizations from the emergency department. Further research is needed to determine long-term health care utilization patterns under high-deductible coverage and to assess risks and benefits related to clinical outcomes.

www.jama.com
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For editorial comment see p 1126.

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Utilization

Reduction in Emergency Room use even for severe emergencies

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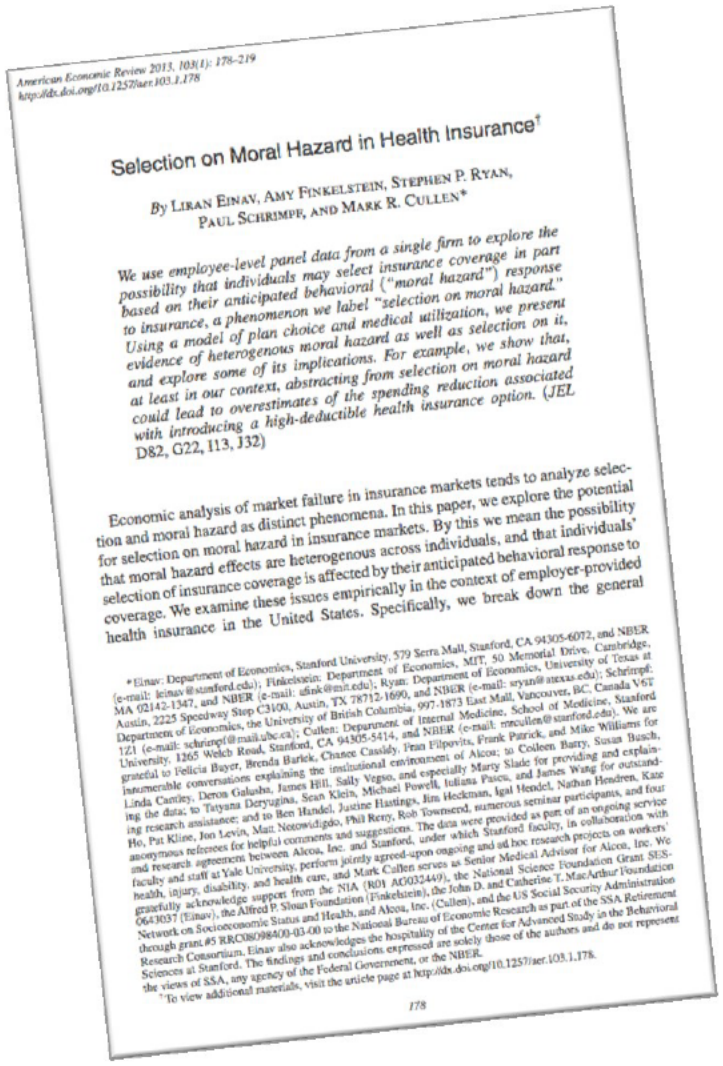
Cost-Sharing Effects: High Deductibles



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Selection on Moral Hazard in Health Insurance†

By Liran Einav, Amy Finkelstein, Stephen P. Ryan, Paul Schrimpf, and Mark R. Cullen*

We use employee-level panel data from a single firm to explore the possibility that individuals may select insurance coverage in part based on their anticipated behavioral ("moral hazard") response to insurance, a phenomenon we label "selection on moral hazard." Using a model of plan choice and medical utilization, we present evidence of heterogenous moral hazard as well as selection on it, and explore some of its implications. For example, we show that, at least in our context, abstracting from selection on moral hazard could lead to overestimates of the spending reduction associated with introducing a high-deductible health insurance option. (JEL D82, G22, I13, J32)

Economic analysis of market failure in insurance markets tends to analyze selection and moral hazard as distinct phenomena. In this paper, we explore the potential for selection on moral hazard in insurance markets. By this we mean the possibility that moral hazard effects are heterogenous across individuals, and that individuals' selection of insurance coverage is affected by their anticipated behavioral response to coverage. We examine these issues empirically in the context of employer-provided health insurance in the United States. Specifically, we break down the general

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†To view additional materials, visit the article page at http://dx.doi.org/10.1257/aer.103.1.178.

Outcomes

Distorts timing of care

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Cost-Sharing Effects

Type of cost sharing	Utilization fell as price rose?	Adverse events vs. better health care?
Deductible Coinsurance Copay	Yes – indiscriminately by service & population	Perhaps for low income, sickest patients
Tiered formularies	Yes – all drugs	Some evidence in asthma patients over age 5
Value-based design	Yes -	Increased medication compliance
High deductibles	Yes – even for "exempt" services	Not studied

Things to keep in mind

Estimated effects of cost-sharing are remarkably consistent across settings:

- Every 10% rise in price causes fall in use/spending that is 4% or less (most are around 2.0%)

Health effects hard to demonstrate

- Average, healthy patient not affected
- Adverse events possible for sicker, poorer patients

Cost-Sharing Effects

Will cost-sharing contain medical spending?

- YES, by about 20% if cost-sharing doubles

Will cost-sharing contribute to Act 48 goals of high-quality care & sustainable costs?

- Not nearly as likely for sickest, most vulnerable Vermonters
- Should be exercised strategically

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Goals

1. There is a tradeoff between insurance and costs
2. Cost-sharing lowers health care spending
3. Cost-sharing has unintended consequences

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Health Economics: Value-Based Benefits & Analytics

Vermont House Health Care Committee
Ellen Meara, PhD

MARCH 26, 2014

Appendix B-8. Department of Human Resources Benefit Summary SELECTCARE 2014

The SelectCare POS Plan

Summary of Benefits for the Employees and Retirees of the State of Vermont

What Does "POS" Mean?

- The "SelectCare POS Plan" is a "Point-of-Service" (POS) plan. In this plan, you decide whether or not to use a network doctor or hospital at the **"point of service"**, meaning, each time you use a medical service. When you use a network provider, the plan is similar to an HMO, with no annual deductible and small copay per visit.

It's Your Choice

- You get access to quality care at the lowest out-of-pocket costs available under your plan by having your care coordinated through your Primary Care Physician and by seeing network providers. You also get the **freedom to choose** providers who aren't part of the network. Your copays are lowest when you see participating providers, but you're still covered for visits to non-network providers at a higher cost share.

Important Medical Plan Features

- You may choose a Primary Care Physician (PCP) – your personal doctor -- to coordinate your care. As your needs change, you may change your Primary Care Physician for any reason.
- **Preventive care services** for every covered family member and paid at 100%.
- See a participating OB/GYN – **no referral** required.
- **Emergency and urgent care are covered** wherever you go, worldwide, **24 hours a day**.

Drug Plan

- The program is administered by Express Scripts, Inc. The annual deductible is $25 per covered person per year. The plan covers 90% of the cost of generic drugs, 80% of the cost of preferred brand drugs and 60% of the cost for non-preferred brand drugs. For the 2014 Plan Year, the maximum out-of-pocket cost per individual per year is $775 (which includes the deductible). **40% copay drugs do not contribute to the maximum out of pocket limit.** At the local pharmacy, you show you drug plan card and pay your copay; the State is automatically billed for the balance of the cost. The drug plan also features a mail order option, with the convenience of direct home delivery for long-term maintenance drugs.

BENEFIT HIGHLIGHTS	IN-NETWORK	OUT-OF-NETWORK
Primary Care Physician (PCP) Office Visit such as:	**YOUR COST IS THE COPAY – WITH NO ANNUAL MEDICAL DEDUCTIBLE.**	**THE PLAN PAYS 70% AFTER THE ANNUAL MEDICAL DEDUCTIBLE.**
Preventive Care/Well Care:		
Periodic Physical Exams (Children and Adults)	Paid at 100%	70%
Routine Immunizations and Injections	Paid at 100%.	70%
Adult/Child Medical Care for Illness or Injury	$20 Copay per office visit	70%
Procedures performed in a Physician's Office	$20 Copay	70%
Routine Mammograms	Paid at 100%	Paid at 100%
Specialist Office Visits such as:		
Consultations and Referral Physician Services	$20 Copay per office visit	70%
Well Care (Includes Pap Test and PSAs)	Paid at 100%	70%
Procedures performed in Physician's office	$20 Copay per office visit	70%
Inpatient Hospital Services:		
Semi-Private Room and Board	$250 Copay per admission	70%
Physician Services		
Diagnostic/Therapeutic Lab and X-ray		***All inpatient hospital admissions require Precertification. Call the toll-free number on your ID Card.***
Drugs and Medication		
Operating and Recovery Room		
Radiation Therapy and Chemotherapy		
Anesthesia and Inhalation Therapy		
Inpatient Surgeon's Charges	Paid at 100%.	70%
Second Surgical Opinion	$20 Copay per office visit.	70%
Outpatient Facility Services including:		
Operating Room, Recovery Room, Procedure Room and Treatment Room including:	Paid at 100%.	70%
Physician Services		
Diagnostic/Therapeutic Lab and X-rays		
Anesthesia and Inhalation Therapy		
Outpatient Preadmission Testing		
Office Visit	Paid at 100%.	70%
Outpatient Facility	Paid at 100%.	70%
Laboratory and Radiology Services such as:		
MRIs, MRAs, CAT Scans and PET Scans	Paid at 100%.	70%
Other Laboratory and Radiology Services		
Short-Term Rehabilitative Therapy including Physical, Speech, Occupational and Chiropractic Therapies.	$20 Copay per office visit – **Maximum of 60 visits per year in aggregate.***	70% **Maximum of 60 visits per year in aggregate.***
Prescription Drugs		
For both Retail and Mail Order Drugs Combined:		
Annual Deductible (Separate from your medical deductible)	$25 per individual/$75 per family	Not Covered
Plan Pays	90% for generic drugs, 80% for preferred brand drugs, and 60% for non-preferred brand drugs	
Your 2013 Annual Maximum Copay, excluding deductible	$750 per person	
2013 Maximum Out-Of-Pocket expense per year	$775 per person ($750 maximum copays plus $25 annual deductible.) , then the plan pays 100% for the rest of the calendar year	
Emergency and Urgent Care Services at:		
Physician's Office	$20 Copay	If true emergency, benefits are the same as the in-network benefits. If not a true emergency, benefits are paid at 70%.
Emergency Room, Urgent Care or Outpatient Facility	$50 Copay per visit, (waived if admitted)	
Ambulance	Paid at 100%.	
Maternity Care Services		
Initial Office Visit to Confirm Pregnancy	$20 Copay	70%
All other office visits	Paid at 100%.	70%
Delivery		
Hospital Charges	$250 Copay per admission	70%
Physician Charges	Paid at 100%.	70%
Inpatient Services at Other Health Care Facilities including: Skilled Nursing, Rehabilitation and Sub-Acute Facilities	Paid at 100%.**60 days maximum per calendar year**	70%. **Precertification applies. 60 days maximum per calendar year**
Home Health Services	Paid at 100%.	70% ; **40 visits per calendar yr.**
Family Planning Services		
Office Visits (tests, counseling)	$20 Copay	70%
X-ray/lab if billed by separate facility	Paid at 100%.	70%
Vasectomy/Tubal Ligation (excludes reversals)		70% **Precertification applies**
Inpatient Facility	$250 per admission	70%
Outpatient Facility	Paid at 100%.	70%
Surgery in Physician's Office	$20 Copay	
Infertility Treatment – Up to $50,000/lifetime		
Office Visits (tests, counseling)	$20 Copay	Covered in-network only
X-ray/lab if billed by separate facility	Paid at 100%.	
Treatment/Surgery (includes In-vitro Fertilization, Artificial Insemination, GIFT and ZIFT) done at an inpatient or outpatient facility or physician's office.	Paid at 100%.	Covered in-network only

BENEFIT HIGHLIGHTS	IN-NETWORK	OUT-OF-NETWORK
Mental Health and Substance Abuse Precertification Required		
Inpatient Mental Health	100%	70%
Inpatient Substance Abuse	100%	70%
Inpatient Substance Abuse Detoxification	100%	70%
Inpatient Substance Abuse Rehab Facility	100%	70%
Outpatient Mental Health	100%	70%
Marital/Family Counseling	100%	Not Covered
Outpatient Substance Abuse	100%	70%
Durable Medical Equipment	Paid at 100%.	70% **$700 Calendar year maximum**
External Prosthetic Appliances	Paid at 100%.	70% **$1,000 Calendar year maximum**
Vision Care	$100 every two calendar years, no deductible or coinsurance, routine exams and lenses.	
OTHER BENEFIT INFORMATION		
Annual Deductible Individual Family	None None	$500 $1,000
Annual Out-of-Pocket (OOP) Maximum Individual Family	None None	$2,000 plus deductible $6,000 plus deductible
Coinsurance	None	The plan pays 70% of eligible charges after the annual deductible is met. You pay 30% of the charges after the annual deductible is met.
Precertification (Inpatient, Outpatient, and MRI's)	Handled by your physician	Member must obtain approval
Lifetime Maximum	Unlimited	Unlimited

* Out-of-network treatment maximums are reduced by in-network services used.

If you use an In-NetworkProvider (In-Network Services):

- All services must be provided by or referred by your Primary Care Physician (PCP) in order to be covered except for: emergency services, routine care provided by a participating OB/GYN, and mental health and substance abuse services..

If you use a Out-of-Network Provider (Out-of-Network Services):

- All out-of-network hospital admissions, outpatient surgeries and MRI's must be precertified by the member. Precertification **is not required** for emergency admissions. To precertify, call the telephone number on the back of your ID card.
- Benefits which are not covered out-of-network are: Organ Transplants, Infertility Treatment and Prescription Drugs.
- Once the out-of-pocket maximum for Out-of-Network services is reached, the plan pays 100% of eligible charges for the remainder of the calendar year.

Appendix B-9. Scenarios Illustrating Benefit Designs

State of Vermont **APPENDIX B-9. SCENARIOS**

Estimated Out of Pocket Costs For illustrative purposes only

Based on Plan Designs as of December 16, 2014

Scenario	Copay 93.5% (State Adj)	Deductible 87.0% (Catamount Adj)	Deductible Subsidy 93.5%	HDHP 80%
Pregnancy	$872	$1,705	$695	$2,100
Mental Health	$620	$900	$520	$1,445
COPD	$1,122	$2,140	$850	$2,100
Multiple Sclerosis	$2,155	$1,713	$850	$2,100
Family of Four	$515	$984	$544	$2,790

Illustrative purposes only. Based on estimated provider payment rates and a set number, type and order of services.

State of Vermont
Estimated Out of Pocket Costs - Pregnancy Scenario
Based on Plan Designs as of December 16, 2014

APPENDIX B-9. SCENARIOS
For illustrative purposes only

Scenario:
27 year old female on Single insurance. Pregnant. ER visit/delivery/surgery due to Ectopic pregnancy.

Pregnancy Services	# Units	Allowed Cost per Service	Allowed Costs	Copay 93.5% (State Adj)	Deductible 87.0% (Catamount Adj)	Deductible Subsidy 93.5%	HDHP 80%
OB/GYN exams	8	$98	$781	$280	$160	$160	$620
Ambulance	1	$1,081	$1,081	$0	$616	$296	$15
Drug - preferred brand	3	$237	$710	$217	$105	$45	$710
ER services	1	$5,220	$5,220	$75	$1,044	$1,044	$75
Surgery	1	$16,820	$16,820	$0	$3,364	$3,364	$1,550
Hospitalization	1	$5,406	$5,406	$300	$1,081	$1,081	$250
Total Potential Member Costs			$30,018	$872	$6,370	$5,990	$3,220
Total Potential Member Costs - Medical			$29,308	$655	$6,265	$5,945	$2,510
Total Potential Member Costs - Drug			$710	$217	$105	$45	$710
Maximum Out of Pocket - Combined			N/A	N/A	N/A	N/A	$2,100
Maximum Out of Pocket - Medical			$5,000	$1,600	$650	N/A	
Maximum Out of Pocket - Drug			$1,300	$1,250	$200	N/A	
Total Paid by Member			**$872**	**$1,705**	**$695**	**$2,100**	

Illustrative purposes only. Based on estimated provider payment rates and a set number, type and order of services.

State of Vermont
Estimated Out of Pocket Costs - Mental Health Scenario
Based on Plan Designs as of December 16, 2014

APPENDIX B-9. SCENARIOS
For illustrative purposes only

Scenario:
35 year old male with bipolar disease. Lithium maintenance meds. PCP visits twice per year for testing. Also sees psychiatrist 18 times per year.

Mental Health Services	# Units	Allowed Cost per Service	Allowed Costs	Copay 93.5% (State Adj)	Deductible 87.0% (Catamount Adj)	Deductible Subsidy 93.5%	HDHP 80%
PCP visit	2	$102	$204	$50	$20	$20	$107
Drugs - maintenance (generic)	12	$46	$557	$120	$120	$60	$101
Lab tests	1	$901	$901	$0	$580	$260	$901
Psychiatrist visits	18	$240	$4,325	$450	$180	$180	$335

Total Potential Member Costs	$5,987	$620	$900	$520	$1,445
Total Potential Member Costs - Medical	$5,430	$500	$780	$460	$1,344
Total Potential Member Costs - Drug	$557	$120	$120	$60	$101

Maximum Out of Pocket - Combined	N/A	N/A	N/A	$2,100
Maximum Out of Pocket - Medical	$5,000	$1,600	$650	N/A
Maximum Out of Pocket - Drug	$1,300	$1,250	$200	N/A

Total Paid by Member	**$620**	**$900**	**$520**	**$1,445**

Illustrative purposes only. Based on estimated provider payment rates and a set number, type and order of services.

State of Vermont
Estimated Out of Pocket Costs - COPD Scenario
Based on Plan Designs as of December 16, 2014

APPENDIX B-9. SCENARIOS
For illustrative purposes only

COPD Services	# Units	Allowed Cost per Service	Allowed Costs	Copay 93.5% (State Adj)	Deductible 87.0% (Catamount Adj)	Deductible Subsidy 93.5%	HDHP 80%
PCP	2	$108	$216	$50	$20	$20	$113
Hospitalized twice	2	$7,208	$14,417	$600	$3,283	$2,963	$1,800
Drugs (generic)	12	$23	$278	$120	$120	$60	$96
Drugs (brand)	12	$122	$1,460	$352	$420	$180	$393
Home oxygen and equipment	1	$3,364	$3,364	$0	$673	$673	$917
Total Potential Member Costs			$19,735	$1,122	$4,516	$3,896	$3,320
Total Potential Member Costs - Medical			$17,997	$650	$3,976	$3,656	$2,830
Total Potential Member Costs - Drug			$1,738	$472	$540	$240	$490
Maximum Out of Pocket - Combined			N/A	N/A	N/A	$2,100	
Maximum Out of Pocket - Medical			$5,000	$1,600	$650	N/A	
Maximum Out of Pocket - Drug			$1,300	$1,250	$200	N/A	
Total Paid by Member			**$1,122**	**$2,140**	**$850**	**$2,100**	

Illustrative purposes only. Based on estimated provider payment rates and a set number, type and order of services.

State of Vermont
Estimated Out of Pocket Costs - Multiple Sclerosis Scenario
Based on Plan Designs as of December 16, 2014

APPENDIX B-9. SCENARIOS
For illustrative purposes only

Multiple Sclerosis Services	# Units	Allowed Cost per Service	Allowed Costs	Copay 93.5% (State Adj)	Deductible 87.0% (Catamount Adj)	Deductible Subsidy 93.5%	HDHP 80%
PCP visits	6	$96	$577	$150	$60	$60	$121
Neurologist	3	$360	$1,081	$105	$60	$60	$390
Rehab visits	24	$60	$1,442	$600	$673	$368	$405
Durable medical equipment	1	$6,007	$6,007	$0	$260	$240	$15
Drugs - Specialty	12	$1,201	$14,417	$5,812	$660	$360	$1,263
Total Potential Member Costs			$23,524	$6,667	$1,713	$1,089	$2,195
Total Potential Member Costs - Medical			$9,107	$855	$1,053	$729	$932
Total Potential Member Costs - Drug			$14,417	$5,812	$660	$360	$1,263
Maximum Out of Pocket - Combined			N/A	N/A	N/A	$2,100	
Maximum Out of Pocket - Medical			$5,000	$1,600	$650	N/A	
Maximum Out of Pocket - Drug			$1,300	$1,250	$200	N/A	
Total Paid by Member			**$2,155**	**$1,713**	**$850**	**$2,100**	

Illustrative purposes only. Based on estimated provider payment rates and a set number, type and order of services.

State of Vermont
Estimated Out of Pocket Costs - Family of Four Scenario
Based on Plan Designs as of December 16, 2014

APPENDIX B-9. SCENARIOS
For illustrative purposes only

Scenario:
Family of four. One child with diabetes. Dad with cholesterol and high blood pressure meds. Mother to receive colonoscopy. Other child breaks arm in ski accident.

Family of Four Services	# Units	Allowed Cost per Service	Allowed Costs	Copay 93.5% (State Adj)	Deductible 87.0% (Catamount Adj)	Deductible Subsidy 93.5%	HDHP 80%
PCP visits	8	$100	$961	$200	$80	$80	$389
Drug - Diabetes (generic)	12	$173	$2,072	$120	$120	$60	$1,066
Drug - Cholesterol, BP (generic)	12	$95	$1,141	$120	$120	$60	$60
ER services	1	$1,322	$1,322	$75	$664	$344	$1,275
Colonoscopy (preventive)	1	$5,166	$5,166	$0	$0	$0	$0
Total Potential Family Costs			$10,662	$515	$984	$544	$2,790
Total Potential Family Costs - Medical			$7,449	$275	$744	$424	$1,664
Total Potential Family Costs - Drug			$3,214	$240	$240	$120	$1,126
Maximum Out of Pocket - Combined			N/A	N/A	N/A	$4,200	
Maximum Out of Pocket - Medical			$10,000	$3,200	$1,300	N/A	
Maximum Out of Pocket - Drug			$2,600	$2,500	$400	N/A	
Total Paid by Family			**$515**	**$984**	**$544**	**$2,790**	

Illustrative purposes only. Based on estimated provider payment rates and a set number, type and order of services.

Appendix B-10. GMC Secondary: Adding an Out of Pocket Limit to Medicare

Appendix B-10

Calculation of Medicare FFS AV at Various MOOP levels

		Catamount Subsidy (93.5%) = $650 (medical only)		Catamount (87%) = $1,600 (medical only)		HDHP 80% = $2,100 (includes Rx)							State 93.5% = $5,000 (medical only)				
MOOP	**$250**	**$500**	**$1,000**	**$1,250**	**$1,800**	**$2,100**	**$2,400**	**$2,500**	**$3,000**	**$3,600**	**$4,000**	**$4,800**	**$5,100**	**$5,750**	**$6,600**	**$6,750**	**$999,999,999**
Results with LDS Dual/Non Dual Mix																	
Allowed PMPM - 2012	$770	$770	$770	$770	$770	$770	$770	$770	$770	$770	$770	$770	$770	$770	$770	$770	$770
Allowed PMPM - 2017	$888	$888	$888	$888	$888	$888	$888	$888	$888	$888	$888	$888	$888	$888	$888	$888	$888
Implied Annual Trend	2.9%	2.9%	2.9%	2.9%	2.9%	2.9%	2.9%	2.9%	2.9%	2.9%	2.9%	2.9%	2.9%	2.9%	2.9%	2.9%	2.9%
Cost Share PMPM	$17	$32	$52	$60	$74	$79	$84	$86	$92	$99	$102	$108	$110	$113	$117	$118	$132
Impact of MOOP	$115	$101	$80	$72	$59	$53	$48	$47	$40	$34	$30	$24	$22	$19	$15	$15	$0
Paid PMPM	$870	$856	$835	$828	$814	$808	$803	$802	$795	$789	$785	$779	$778	$774	$771	$770	$755
Resulting AV w/MOOP	**98.0%**	**96.4%**	**94.1%**	**93.2%**	**91.7%**	**91.1%**	**90.5%**	**90.3%**	**89.6%**	**88.9%**	**88.5%**	**87.8%**	**87.6%**	**87.2%**	**86.8%**	**86.8%**	**85.1%**
Medicare FFS AV (no MOOP)	**85.1%**	**85.1%**	**85.1%**	**85.1%**	**85.1%**	**85.1%**	**85.1%**	**85.1%**	**85.1%**	**85.1%**	**85.1%**	**85.1%**	**85.1%**	**85.1%**	**85.1%**	**85.1%**	**85.1%**

For discussion and illustrative purposes only. Uses Medicare limited data set to estimate the impact of various maximum out of pocket levels on the Medicare FFS population. Parts A and B only.

Appendix C-1: The Gruber Microsimulation Model

Microsimulation is a method of analysis that uses a computer program to model ("simulate") the effects of policy changes on individual ("micro") units such as people, households and businesses. The approach used here is the type of "microsimulation" modeling used by the Treasury Department, CBO, and other government entities. This approach draws on the best evidence available in the health economics literature to model how individuals will respond to the changes in the insurance environment induced by changes in government policy.

The Gruber Microsimulation Model (GMSIM) computes the effects of health insurance policies on the distribution of health care spending and private and public sector health care costs. This model has been used over the past 15 years by a wide variety of state and federal policy makers to analyze the impacts of health insurance reforms. This model was first developed in 1999 for use in estimating the impact of tax credits on health insurance coverage, with funding from the Kaiser Family Foundation. Over the subsequent 15 years, the model's capability has been expanded to consider the full variety of possible health interventions, including public insurance expansions, employer or individual mandates, purchasing pools for insurance, single payer systems, and more.

GMSIM was the basis for the empirical modeling in the well-known February 2011 report by Professor William Hsaio. The 2011 report attempted to provide a comprehensive overview of the factors involved in transitioning to a unified and universal health care system. Central to that report was a careful modeling of the Vermont health care economy, and how it would be affected by that transition. The 2011 report is now somewhat out of date; in particular, recent survey data of Vermont households on their insurance status is now available to update the model. But the basic structure provides an excellent starting point for modeling the incidence of current health care spending.

Microsimulation Model Construction

Structure of GMSIM

The GMSIM is a complex model that has grown over 15 years to address a wide variety of health policy questions. In this section, we provide a brief overview of the model. The assumptions included in the modeled are detailed in Appendix C-2.

The GMSIM builds upon micro-data on individuals, including data available for Vermont residents in the Vermont Household Health Insurance Survey (VHHIS) and in national datasets such as the Current Population Survey (CPS).

This data on individuals is then carefully supplemented by data on employers. GMSIM builds "synthetic firms," assigning each individual worker in the dataset a set of co-workers selected to represent the likely true set of co-workers in that firm. The model uses data from the Vermont Department of Labor and the Vermont Department of Taxes to show, for workers of any given earnings level, the earnings distribution of their co-workers. Using these data, other sample individuals are randomly selected in order to statistically replicate the earnings distribution for that worker's earnings level. These workers then become the co-workers in a worker's synthetic firm.

Assigning Incidence

A starting point for any analysis of financing reform is a rich understanding of the incidence of existing health care spending. "Incidence" refers to entities that are ultimately responsible for certain costs. Only by first understanding who bears the burden of health care costs in Vermont today can we paint a rich picture of how financing alters that burden.

Addressing questions such as the incidence of health care spending requires assigning the incidence of different types of health care spending to different entities. In this section we discuss each element of health care spending and to whom it is assigned for incidence purposes, drawing on economic theory and evidence for making such assignments.

***Medicaid Expenditures*:** The incidence of Medicaid expenditures is allocated between the federal government and the state government, using future projections of the Vermont Federal Matching Assistance Percentages (FMAPs) for the base Medicaid population, the ACA expansion population, and the CHIP program. We applied these percentages to Medicaid expenditure data provided by the Vermont Agency of Human Services.

Other Government Insurance: For those covered by other government insurance (primarily military coverage) the incidence is fully on the Federal government.

***Family Premiums and Out of Pocket Medical Spending*:** The incidence of family spending on health insurance and medical spending is directly on the family, with one important exception: federal tax breaks to insurance spending. The most significant of these federal tax breaks are the deduction from federal income taxation for health insurance premiums for the self-employed and the deduction of employee premiums from state and federal taxable income for the vast majority of employees. We use aggregated data provided by the Vermont Tax Department to estimate each of these items for Vermont residents in order to assign the relative incidence between the family and the state and federal government.

***Private Employer Health Insurance Premiums*:** Employer-sponsored health insurance premiums are the single largest element of health care spending in the state. There is a large literature in economics showing that the incidence of employer premium payments is on employee wages.

We begin with the typical economics assumption that health insurance premiums were fully shifted to workers' wages in a lump sum (constant dollar) fashion across all employees. We then augment that modeling with a minimum wage constraint – wages cannot be reduced below the minimum wage, so any extra costs induced by this constraint are borne by the employer. We assume that wages are "sticky," that is, that employers do not redirect costs or savings from health care coverage immediately to wages, but rather redirect these funds over several years.

***State Health Care Spending*:** The state of Vermont and its localities spend a large share of their budgets on health care, ranging from employee health insurance spending, to the state share of Medicaid spending, to other state public health programs. For state and local health insurance spending, we assume lower incidence on wages relative to private employers.

The share of state taxes that are collected on businesses are assigned to employers as part of their incidence.

The various elements of incidence described above can have multiple impacts on any family, through their own health care spending, health insurance premiums, and state taxes. We integrate of all these changes into one total incidence measure for each family.

Modeling Green Mountain Care

The GMSIM takes as its starting point the situation in Vermont post-ACA. The model incorporates the latest available information on the impacts of the ACA in Vermont in setting the baseline for any analysis. This information includes the most recent available data on exchange enrollment across plans; plan prices and characteristics; enrollment in Medicaid; and other insurance coverage information. The GMSIM fully incorporates all aspects of the ACA.

We then model the transition to Green Mountain Care in 2017. We model the "steady state" situation in Vermont after full transition, and then consider various scenarios for transition paths to that steady state.

Modeling the impact of GMC involves several steps. First, individuals are enrolled in GMC as a default. The impacts of this default enrollment vary by type of individual:

- Uninsured individuals are directly enrolled into GMC.
- Those who currently purchase individual insurance are directly enrolled into GMC.
- Those who are on public insurance will also be directly enrolled. However, for those low income individuals who have benefits packages more generous than GMC, we also model the "wrap-around" benefits to which they are entitled.

The most difficult case is those who have employer-sponsored insurance, since employers can choose to continue to offer ESI. It also is important to differentiate multi-state employers who may be slower to change their benefits offering in response to GMC. As well, existing employers and employees will move to GMC as a function of the generosity of the program relative to their employer sponsored insurance. We use data provided by Wakely Consulting Group to measure the share of large firm employees who are employed in multi-state firms.

We then apply assumptions regarding the percentage of individuals who will remain on ESI under certain conditions. Next, we apply assumptions as to which employers will purchase supplemental insurance above GMC for their employees, and to what actuarial value. Finally, we apply assumptions as to which individuals will purchase supplemental insurance above GMC, and to what actuarial value. These assumptions are detailed in Appendix C-2.

Incorporating Actuarial Analysis

Moving to Green Mountain Care is a major reform to the insurance system which goes well beyond the types of reforms that have been studied in the past. As such, it is critical to have a sophisticated insurance pricing model which accounts for the impact of population flows and insurance design on insurance markets. The microsimulation team worked iteratively with actuaries from Wakely Consulting Group to consider the effect of insurance market change on population movements (the focus of GMSIM) and pricing (the focus of actuarial analysis).

Incorporating actuarial analysis is critical for understanding several aspects of the GMC reform.

The first is changes in health care utilization due to the changes in the nature of the health insurance package. Next, the actuarial analysis models the ultimate cost of care within the GMC pool based on the health mix and utilization decisions of those who enroll in GMC.

In particular, the integration between actuarial and economic modeling worked as follows:

- Initial insurance market prices and conditions were integrated into the model as described above
- Based on these initial conditions, as well as the policy change and form of financing, GMSIM was used to model population and income flows
- The resulting relative morbidity of populations in GMC, relative to the pre-GMC market, was then passed to Wakely.
- These morbidity changes were then incorporated into an actuarial model to capture the impact on pricing. This accounts for the potential changes in GMC population pools arising from the transition to GMC.
- This information is passed back to GMSIM by the actuary

GMSIM incorporates this information in the form of new prices in GMC populations.

Data Sources

Our modeling of the incidence of health care spending in Vermont draws upon a wide variety of rich data sources that are available for the state.

The 2012 Vermont Household Health Insurance Survey (VHHIS)

In 2012, the state of Vermont under took a detailed collection of data on households and their insurance coverage through the VHHIS. This survey gathered data from more than 4,600 Vermont households, with data on almost 11,000 state residents. This is a very large sample for a state of this size; in contrast, the three year pooled sample from the Current Population Survey that was used in the Hsaio report was only about two-thirds as large. The VHHIS data collection was cutting edge, including collection both from landlines and cell phone only households. And there was an oversample of the uninsured which allows for more comprehensive modeling of the behavior of this group.

The data include a rich battery of information for each household member, including but not limited to:

- Type of insurance coverage
- Source of insurance coverage
- Duration of insurance coverage/uninsured
- Medical expenditures
- Medical utilization and location of care
- Health Insurance premiums

- Barriers to health care receipt
- Health status
- Demographics (age, gender, education, etc.)
- Employment
- Job characteristics, including firm size and provision of health insurance
- Family income

As described above, these data provide the ideal basis for the type of microsimulation modeling that is required for a rich incidence analysis in Vermont.

Augmenting the VHHIS

While the VHHIS is the most comprehensive data source available for this analysis, it has three limitations. First, it is two years out of date. Second, there is well known under/misreporting of key measures in survey data, such as coverage by public insurance or medical expenditures. Such measurement problems could lead to important misstatements of the incidence of health care spending and the subsequent effects of reform. Finally, a number of important expenditure items are not collected by the VHHIS but are central to understanding the incidence of health care spending in Vermont.

We therefore carefully augment the VHHIS in a number of ways to produce the best possible estimates:

Medicaid coverage. Underreporting of public insurance coverage is a well-known problem in survey data. We therefore recalibrate to state and federal reports of enrollment by type of enrollee (e.g. child, disabled & blind, elderly, etc).

Public insurance spending**.** The VHHIS has no data on the insured spending of those who are enrolled in public insurance. We use data from state and federal sources to impute per capita spending by type of enrollee. Specifically, we used Medicaid expenditure data provided by the Vermont Agency of Human Services (AHS) and Department of Vermont Health Access (DVHA). These expenditures include both DVHA Medicaid expenditures as well as expenditures for mental health services and long term care services and supports provided through other departments within AHS. Estimates of managed care investments were also included in public insurance spending.

Employer-sponsored insurance premiums**.** The survey includes data on the employee portion of employer-sponsored insurance premiums, but not on the employer portion. Three Vermont insurers, Blue Cross Blue Shield of Vermont, Cigna and MVP, provided data on enrollment and premiums by firm size (both total premiums and the employer/employee shares) for their Vermont book of business.

***Individual market insurance premiums*.** Blue Cross Blue Shield of Vermont, Cigna and MVP provided data on enrollment and premiums for their individual policies.

***Income*.** The VHHIS is not designed to focus on income collection in the same way as Census data sets such as the Current Population Survey or the American Community Survey. We therefore recalibrate the income distribution in the VHHIS to match the distribution from these more precise Census data sets, as well as income data provided by the Vermont Department of Taxes.

Appendix C-2: Microsimulation Assumptions

This Appendix describes the assumptions provided by the State of Vermont to be used for the microsimulation analysis. It also describes the type of output provided to the State as an output from the model. It is important to remember that the numbers presented throughout this report are **estimates** despite the precise dollar amounts. Readers should avoid drawing strong conclusions from small differences, which result due to rounding.

Populations

A. Population counts: Population counts by type of insurance for the 94% AV Best Policies run can be found in Appendix A-1.
   1. *Non-group*: those holding individual insurance policies (no longer exists under GMC)
   2. *Medicaid primary*: those who are Medicaid eligible and have no other insurance (incorporated fully into GMC)
   3. *Employer sponsored insurance*: this is divided into private, state, local and municipal employees
   4. *Federal government insurance*: Federal Employee Health Benefits
   5. *Uninsured*
   6. *Medicare*: overall Medicare enrollment, as well as supplementation by individuals (medi-gap), by Medicaid (duals), and by employers
   7. *Military insurance*
   8. *GMC enrollment*: overall GMC enrollment, and separately present those who are receiving employer supplementation to GMC and those who are purchasing GMC supplements on their own
   9. *Commuters in*: We assume that residents of other states who work in Vermont for a Vermont firm are able to enroll in GMC. These non-residents would pay the public premium in the same manner and amount as a Vermont resident with the same income and family size.

B. Key assumptions relating to these population counts include:
   1. We assume the number of uninsured is zero under GMC due to the operational planning by the State.
   2. We assume all employees of small firms (with fewer than 100 employees) drop ESI and go onto GMC, under the state's Affordable Care Act Section 1332 waiver.
   3. We assume a three year phase down of ESI for large firms. We break down large group ESI down into four groups – those in national firms and those not in national firms, and then within those we distinguish between those who have an ESI AV higher than they are offered on GMC and those that have a lower ESI AV. Our assumptions for the percentage of employees of large firms who remain on ESI are laid out in the following table:

Large Group ESI Assumptions	National firms	Vermont only firms
Firm offers ESI with AV *Greater* than GMC's AV	Year 1: 60% remain on ESI Year 2: 40% remain on ESI Year 3 & thereafter: 12.5% remain on ESI	Year 1: 25% remain on ESI Year 2: 12.5% remain on ESI Year 3 & thereafter: 0% remain on ESI
Firm offers ESI with AV *Lower* than GMC's AV	Year 1: 30% remain on ESI Year 2: 15% remain on ESI Year 3 & thereafter: 0% remain on ESI	0% remain on ESI in any year

4. We assume that all employees of state, local, and municipal employers drop ESI in the first year and go onto GMC.
5. For federal employees, we assume that virtually all federal employees move on to GMC rather than pay for both ESI and GMC. We assume no impact on military.
6. We assume no impact on Medicare.

C. Data sources for populations include the Vermont Household Health Insurance Survey (VHHIS), enrollment in public insurance programs provided by the Vermont Agency of Human Services and Department of Vermont Health Access, and data reported by Vermont health insurers for this project.

Private Insurance Coverage and Spending

Spending is in millions, while enrollment is in thousands of persons.

A. Key assumptions relating to private coverage and spending include:

1. *Trend*: We assume private insurance spending increases based on the trends projected in Table 17 of the National Health Expenditure accounts.[1]

2. *Non-group* premium spending is spending on individual insurance without GMC

3. *Individual supplementation of GMC*: We measure spending on individual supplementation of GMC by allowing individuals to supplement in either of two cases:

[1] See Table 17 of the National Health Expenditure Data, found at http://www.cms.gov/Research-Statistics-Data-and-Systems/Statistics-Trends-and-Reports/NationalHealthExpendData/NationalHealthAccountsProjected.html

a. If the individual's ex-ante AV is above their GMC AV, and their ex-ante premium is above their individual contribution to GMC, then they buy-up to their ex-ante AV, and
b. If the individual's ex-ante AV is above their GMC AV, but their ex-ante premium is below their individual contribution to GMC, then they buy-up 50% of the difference between their ex-ante AV and GMC AV.

4. *Individual supplementation of Medicare*: We assume no change due to GMC.

5. *Private employer spending:* We show base coverage for active workers (those remaining on ESI), as well as supplementation of active workers who move to GMC. We also show supplemental spending for retirees.
   a. *Supplemental coverage*: To model private employer supplementation of GMC, we consider the firm's spending on the employees' ex-ante premium before GMC, and the ex-ante AV of the plan the employer provided before GMC. Our assumptions are summarized as follows:
      (1) If the firm spent *more* on the employee's ex-ante premium than GMC AND the ex-ante AV of the plan the employer provided is higher than the employee is receiving on GMC, then the employer supplements the employee up to the ex-ante AV, with similar cost sharing arrangements (e.g. 80/20 cost sharing).
      (2) If the firm spent *less* on the employee's ex-ante premium than before GMC, but the ex-ante AV of the plan the employer provided is higher than the employee is receiving on GMC, then the employer supplements up to 50% of the AV difference.

   b. *Employer savings re-directed to employee wages*: To the extent that an employer's spending on health insurance without GMC exceeds the employer's spending under GMC on the GMC payroll tax, plus any supplemental coverage for its employees to maintain previous coverage levels, we assume that the employer will re-direct some of its savings to employee wages.
      1. *Total amount shifted to wages*: We assume that private employers redirect 60% of savings to wages the first year, 80% the second year, and 100% each year after that.
      2. *Total remaining un-shifted*: This represents extra costs to wages that employers are unable to shift to due minimum and nominal wage restrictions.
      3. *Total withheld:* This represents savings to wages that firms choose not to shift (this is a wage stickiness assumption). We assume that employers re-direct any remaining savings to uses other than wages, for example, investing in capital equipment, paying down debt, or new hiring.

6. *Federal Employee Spending:* We assume no change in insurance coverage for federal employees. We assume no federal supplementation.

7. *Military Spending*: We assume no change in military health insurance coverage. We assume no supplementation.

8. *State/local/municipal employees:*
   a. *Coverage for active workers*: We assume all public employees move to GMC
   b. *Supplemental coverage*: This category includes active employees and retirees; samples are too small to split them out. We make the same assumptions regarding public employer supplementation of GMC as we made for private employer supplementation in paragraph 5.a.
   c. *Employer savings re-directed to employee wages*: We assume that state, local and municipal employers savings after paying the GMC payroll tax and any supplemental coverage as follows. State, local and municipal employers redirect 50% of savings to wages in the first year, 60% in the second year, 80% in the third year, 90% in the fourth year, and 100% in all remaining years.

B. Data Sources: Private coverage and spending projections were based on data reported by Vermont health insurers for this project.

GMC Enrollment & Spending

GMC spending per member per month by category of enrollee was calculated by actuaries at Wakely Consulting Group. (See methodology in Appendix D.) This includes:

1. GMC spending, and enrollment on GMC, for each type of employer
2. GMC spending for Medicaid primary
3. We are assuming no GMC effect on Medicare
4. GMC spending for individuals not in the labor force

GMC enrollment and spending was modeled based on the behavior of synthetic firms and individuals created for this model.

Data sources for GMC enrollment and spending include data reported by Vermont health insurers for this project, the Vermont Household Health Insurance Survey (VHHIS), the Vermont Health Care Uniform Reporting and Evaluation System (VHCURES), data provided by the Vermont Department of Labor, data provided by the Vermont Tax Department, and public program enrollment and spending reports.

State and Local Budget Implications

We looked at state and local budget implications by breaking down GMC spending across categories and adding in state spending on Medicaid & GMC supplementation of Medicare.

This shows revenues to the state, under both ACA & GMC scenarios, from traditional taxes, as well as the new GMC payroll tax, the GMC individual contributions, and the dollar transfer from the federal government to cover Medicaid costs and 1332 waiver pass-through funding.

A. Key assumptions

1. *Wage effects on taxes:* As noted above, we assume that employers that experience savings under GMC will re-direct some savings to employee wages. Employees who receive higher wages will pay a portion of those wages in higher state income tax. We assume that these employees will spend some of their higher wages on goods and services, resulting in small increases to revenues from the state's sales tax, meals tax, gas tax, etc.

2. *State spending*:
   a. *Provider payment rates:* GMC and Medicaid spending assumes GMC pays standard payment rates to health care providers for all GMC enrollees. These standard provider payment rates are a blend of commercial and Medicaid rates.
   b. *Medicaid fixed costs:* Medicaid spending assumes some spending will not vary with enrollment, utilization and GMC payment rates (e.g. graduate medical education costs, investment in Managed Care Organizations, Long-Term Care costs).

3. *State Revenue:*
   a. *GMC payroll tax:* The employer payroll tax would be levied at a rate of 11.5% on all Vermont businesses on their qualifying Vermont payroll. Qualifying payroll is all payroll except wages for any individual employee in excess of $200,000 with that amount adjusted annually for inflation.
   b. *GMC individual contributions:* we use a percent of income contribution in the same format as the ACA. 0% of income up to 138% FPL, 2.5% of income from 138-150% FPL, 2.5% - 9.5% of income from 150-400% FPL, and 9.5% of income at 400% + FPL, capped at $27,500.
   c. *Federal funding for Medicaid:* Federal Financial Participation (FFP) on Medicaid expenditures assumes that Vermont's base and CHIP Federal Matching Assistance Percentages (FMAPs) continue to decrease by 2% per year until the base FMAP reaches the federal minimum of 50.00% in 2020. The FMAP for the federal expansion population (childless adults <138% FPL) is calculated according to the ACA formula. The FMAP projections are displayed in the following table.

Projections of the Federal Matching Assistance Percentage (FMAP) for Vermont Medicaid

FMAP by Calendar Year	SCHIP: Children 237% - 312% FPL	Expansion population: Childless Adults <138% FPL	Base FMAP: All other Medicaid-eligible populations, including Dual eligibles
2014	69.93%	78.52%	57.04%
2015	74.95%	82.47%	56.18%
2016	90.18%	86.09%	53.64%

Projections of the Federal Matching Assistance Percentage (FMAP) for Vermont Medicaid			
2017	89.45%	86.52%	52.58%
2018	88.73%	89.76%	51.55%
2019	88.14%	93.00%	50.59%
2020+	88.00%	90.00%	50.00%

d. *Federal ACA Pass-Through Funding:* uses conservative assumptions and assumes that the federal government will forward to Vermont the funds that it would otherwise provide to individuals in Advance Premium Tax Credits (APTCs) and Cost Sharing Reductions (CSRs) under the ACA, less funds it would collect from the Cadillac Tax, individual mandate, and equity assessment (large employer penalty). Federal ACA pass-through funding decreases from 2018 forward because it is offset by federal Cadillac tax revenue. The state uses a slightly less conservative assumption in its balance sheet and does not reduce the pass-through funding by the Cadillac Tax, individual mandate, and equity assessment (large employer penalty). The calculation methodology that will be used by the federal government for pass-through funding has not yet been published by the federal government and thus is uncertain.
e. *Provider taxes*: We assume that under GMC the existing provider taxes will be repealed, including the taxes on nursing home beds and acute hospital, psychiatric hospital, ICF/MR, home health and outpatient pharmacy revenues.
f. *Other state revenue sources*: We assume the employer assessment will be repealed and that revenue from the claims tax and premium tax will be substantially reduced under GMC.

Federal Budget Implications

Federal spending includes the Federal Medicaid payments to Vermont, as well as spending on ACA individual and firm tax credits.

<u>Key assumptions:</u>

1. *Federal spending*:
   a. *Federal transfer to Vermont for Medicaid primary:* Federal Financial Participation (FFP) for Medicaid Primary increases under GMC because total state Medicaid expenditures increase.
   b. *Federal ACA Tax Credit Spending* is the same without GMC and with GMC. We assume that the federal government will pass-through funding for APTCs and CSRs on behalf of individuals who, without GMC, would have received these subsidies through the Exchange in the relevant year between 2017-2021. Under the ACA, the federal government pays these funds to individuals in the form of tax credits. Under GMC, the federal government pays the funds to the state and the state directs the funds to pay for GMC.

2. *Federal revenue:*
    a. *ACA revenues* (Cadillac tax, mandate & equity assessment) are the same with and without GMC. While Vermont firms and individuals would not be paying these taxes and assessment after the State receives an ACA waiver of these requirements, it is important to include the calculation in the event the federal government determines these projections must be subtracted in the pass-through calculation.
    b. *Federal income tax revenue:* Federal income tax revenue is expected to *increase* as a result of higher wages and not paying health care premiums pre-tax. Federal income tax revenue is expected to *decrease* as a result of deducting the GMC tax on Schedule A. The net result of these three effects is a small *decrease* in federal income tax revenue.
    c. *Payroll tax revenue* is expected to increase as a result of higher wages.

Family Spending

Spending at the family level is in actual dollars (rounded to nearest $10) and includes both earned and unearned income.

We also looked at family spending, *on average* across all families in the state. A family that spends $0 on a particular category, for example a family that pays $0 in property tax, is included as a $0 in the average.

Family spending includes:

1. *Out of pocket medical expenditures:* this line does not include premium contributions
2. *Non-group*: Individual market premium spending
3. *ESI premium spending:* Employee contribution to employer sponsored insurance premium
4. *ESI supplementation to GMC*: Employee contribution to employer sponsored supplemental insurance. We assume cost-sharing between employer and employee for supplemental insurance is similar to cost-sharing for ESI premiums (e.g. 80/20).
5. *Individual contributions for GMC*
6. *Individual supplementation of GMC*
7. *Tax payments:* Federal payroll tax includes only the individual portion of payroll taxes, not the employer portion.

Appendix D-1: Actuarial Cost Analysis and Assumptions

This Appendix describes the assumptions and analyses provided by Wakely Consulting Group (Wakely). Wakely's key analyses include 2017 cost projections, plan designs, and additional benefit modeling. The cost projections and analyses used information from multiple sources, including but not limited to health plans, micro-simulation results and the State of Vermont. For complementary information on data sources and assumptions, see Appendix C-2 on micro-simulation assumptions.

2017 Cost Projections

A. Data Sources: Many different sources of data were considered as the basis for the cost projections. The Expenditure Analysis and VHCUREs data were used as reasonability checks for the data but were not otherwise used. The data used was total cost of care (or allowed claims), including member cost sharing.

   1. *Commercial*: To project the 2017 commercial costs, Wakely relied on data provided by the health plans that included 2013 premium, allowed and paid claim costs for each of the individual, small and large group markets. This data represented a large portion of the commercial market but did not include all of the large group market. Based on reasonability checks with other data sources, the Per Member Per Month (PMPM) costs appeared reasonable to use for the entire large group market.

   2. *Medicaid*: Given the significant changes in Medicaid due to the Affordable Care Act (ACA), it was preferable to use 2014 data. The State of Vermont provided all Medicaid costs for the 2015 State Fiscal Year, split but primary, secondary, and other/fixed costs (which included items such as GME, DSH, long term supports and services and administrative costs).

B. Key assumptions relating to the projection of costs to 2017 include:

   1. *Benefit changes (Commercial only):* Under GMC, pediatric dental and vision are required to be covered benefits. Since the starting data for commercial was pre-ACA, these costs would not yet be included in the base data. An adjustment for these benefits was estimated using publicly available rate filings in Vermont, prior benefit analyses specific to Vermont, and information provided from the micro-simulation on the percent of covered lives who would receive these benefits.

   2. *Trend:* As discussed in other sections of the report, trends were developed for both the commercial and Medicaid markets. The first set of trends was to bring the base data to 2017 without GMC. These trends were developed in conjunction with Rand. The following information was used to estimate the trends (the list is not all inclusive):
      - Publicly available rate filings in Vermont
      - Emerging commercial experience in VHCUREs
      - Green Mountain Care Board hospital budgets

- Any expected SIM savings, if applicable
- Medicaid historical trends, based on data supplied by the State of Vermont
- CMS/NHE national trends

The following table shows the final allowed PMPM claim cost trends by year that were mutually agreed upon by Wakely and Rand. Given the base data was 2013 for commercial and state fiscal year 2015 for Medicaid, some of the earlier trend years were not ultimately used. Based on guidance from the State, some Medicaid "Other" costs were not trended (for example, GME payments are a fixed amount per year). Additionally, LTSS costs were trended at an annual rate of 3 percent based on information provided by the State.

Year of Trend	Medicaid	Commercial
2012-2013	3.8%	6.5%
2013-2014	4.9%	6.5%
2014-2015	1.1%	6.2%
2015-2016	2.9%	6.1%
2016-2017	3.9%	7.7%

3. *Morbidity (Commercial only):* Under GMC the covered population will be different compared to the base data. The health status difference of the population, or the morbidity change, was an output from the micro-simulation and varied based on the scenario and number of people estimated to be covered under GMC. For commercial, the two key population differences under GMC were employees who will not have coverage under GMC but are in the base data and the uninsured who will be eligible for GMC but are not in the base data. The impact of the population differences results in a significant decrease to PMPM costs, driven by the assumption that the uninsured are significantly healthier than the current population. For the commercial 94 percent actuarial value plan, including commuters and federal employees, the morbidity adjustment was estimated to be -6.4 percent based on the micro-simulation results. For Medicaid it was assumed that the uninsured who are eligible for Medicaid enrolled as part of the ACA in 2014. Thus, no additional morbidity adjustment was made for Medicaid.

4. *Provider Payments:* Under GMC, the state provided the assumption that provider payment rates would be based on the current Medicaid and commercial reimbursement rate, combined to alleviate any cost shift due to today's Medicaid rates, and then trended forward to the applicable year. These payments are expected to be neutral in total due to the elimination of the cost shift, but the changes have implications on the separate commercial and Medicaid markets. The University of Massachusetts provided provider payment rates for each market by inpatient, outpatient and professional, split by providers that will be impacted by GMC and those that will not. In general, it was

assumed any provider in Vermont as well as select providers in neighboring states, would be impacted by GMC provider payment changes. Wakely also estimated the portion of commercial and Medicaid costs that would be impacted. Many costs were excluded, including but not limited to, prescription drugs, dental, and long term services and supports (Medicaid). It was also assumed that Medicare secondary covered costs under Medicaid would not be impacted. Based on the current payment rates, the percent of costs impacted, and projected membership in each market, an estimate was made to the impact of both markets on having the same, but overall neutral, provider payment rates. This results in a large increase to the overall Medicaid costs and a notable decrease to the overall commercial costs once combined within GMC.

5. *Induced Demand (Commercial only):* Based on the current data from the health plans as well as VHCUREs, the average actuarial value (or percent of costs that are paid for through health care coverage) is around 86%. If more generous coverage is offered, it is expected that the utilization of services will increase, all else equal. Similarly, if less generous coverage is provided, utilization would be expected to decrease, all else equal. As part of the ACA, HHS released proposed induced utilization factors[1]. These factors were used to estimate the change in utilization based on the various actuarial values, interpolating where necessary. Since one GMC scenario is an actuarial value of 100%, an induced utilization assumption was developed for this scenario.

6. *Actuarial Value (Commercial only):* The actuarial value of a plan is based on the expected average claim costs covered under GMC. Various plan designs were considered with the target actuarial value used to reduce the allowed claims. For plan designs with less than a 94 percent actuarial value, a weighted average of actuarial values was completed to account for the population eligible for 94 and 87 percent cost sharing subsidies, as applicable. The distribution of the population eligible for subsidies, based on FPL, was an output of the micro-simulation and varied by scenario.

7. *Payer Administrative Expenses:* Administrative expenses for the commercial market were assumed to be 7% under GMC. This is less than the current non-benefit expense loads in health plan premiums, resulting in some savings under GMC. For Medicaid, the current administrative costs were assumed to continue under GMC.

C. Methodology: To arrive at the 2017 cost projections, the base data was used in conjunction with the above assumptions, all of which are multiplicative except administrative expenses. The result was a "premium equivalent" for both commercial and Medicaid under GMC. These premium equivalents were incorporated into the micro-simulation. If the output using the premium equivalents changed the above assumptions (e.g. morbidity), the process was re-iterated to achieve a steady state.

[1] https://www.federalregister.gov/articles/2013/03/11/2013-04902/patient-protection-and-affordable-care-act-hhs-notice-of-benefit-and-payment-parameters-for-2014#h-42

D. Results: The following tables show the premium equivalents developed for both commercial and Medicaid using the above data, assumptions and methodology. The "Other Costs" are shown in total dollars since these costs are mostly unaffected by enrollment changes. The other values are PMPM amounts.

	Commercial
2013 Allowed PMPM	$419.07
Benefit Change Factor	1.012
Trend Factor (4 years of Trend)	1.292
Morbidity	0.936
Provider Payment Change	0.880
Induced Demand	1.056
2017 GMC Allowed PMPM	$476.60
Actuarial Value	0.935
2017 GMC Paid PMPM	$445.62
Administrative Load	7%
2017 GMC Premium Equivalent	$479.16

	Medicaid		
	Primary	Secondary	Other Costs
SFY15 Allowed PMPM	$466.99	$545.13	$648,418,583
Benefit Change Factor	1.000	1.000	1.000
Trend Factor (2.5 years of Trend)	1.075	1.075	1.049
Morbidity	1.000	1.000	1.000
Provider Payment Change	1.338	1.000	1.000
Induced Demand	1.000	1.000	1.000
2017 GMC Allowed PMPM	$671.76	$586.01	$679,979,377
Actuarial Value	1.000	1.000	1.000
2017 GMC Paid PMPM	$671.76	$586.01	$679,979,377
Administrative Load			Included in Other Costs
2017 GMC Premium Equivalent	$671.76	$586.01	$679,979,377

Plan Designs

As part of GMC, several plan design options were considered at various actuarial value levels. These plan designs are described and provided in Appendix B and incorporate three actuarial value levels: 80, 87, and 94 percent. The development of these plan designs was based on the following process.

A. Gather input:

1. *Current Plan Designs* for key plans, such as state employee plan, VEHI plans, and Catamount Health were provided as the starting point for plans at the 94 and 87 percent actuarial value levels.

2. *Input* from the State of Vermont, consultants and other key stakeholders were provided that shaped some of the plan design options. This input was iterative as Wakely developed and refined various plan options.

B. Development of plan designs:

1. *The Truven Health Benefit Modeler,* developed in conjunction with Wakely, was used to develop the plan designs that would meet the target actuarial value levels. Underlying the modeler is detailed claim and enrollment data for over 42 million commercially-insured lives. Since allowed costs can have a significant impact on the actuarial value of a plan, the model was first normalized to the estimated 2017 allowed costs, which varied depending on the targeted actuarial value of the plan, largely due to induced demand but also because of differences such as morbidity. Once the model was normalized for the estimated 2017 allowed costs, the cost sharing was adjusted until the targeted actuarial value was achieved. While the model has many cost sharing inputs for various service categories, only a subset have a significant impact on the resulting actuarial value.

2. *The Federal Actuarial Value Calculator (AVC)* was used as a check of the Truven Health Benefit Modeler. This was only a high level reasonability check and the Federal AVC is expected to be less precise for several reasons. First the model is not normalized to 2017 GMC estimated allowed costs. Second, the model has less inputs which results in less precision. Lastly, the primary goal of the Federal AVC is to bucket similarly generous plans rather than be an accurate pricing tool. However, since it is critical that the plan design be reasonably accurate and pricing models will all produce different results, the Federal AVC was used to ensure the reasonability of the plan design results. In order to produce the most relevant comparison, the Draft 2016 AVC was used. Additionally, the metal level chosen in the AVC was based on the allowed costs in the Federal AVC continuance table compared to the GMC plan rather than matching the metal tier to the approximate actuarial value of the GMC plan.

3. *The 80 percent high deductible health plan* required additional modeling. This plan design has two separate deductibles, one that applies to inpatient services and another that applies to all other categories of services (the deductibles do not apply to preventive services). Neither the Truven Health Benefit Modeler nor the Federal AVC can accommodate this plan design. To approximate the actuarial value and resulting cost sharing levels for this plan, Wakely developed a combined deductible that would be similar in actuarial value to the two separate deductibles. However, this is a less precise method and the cost sharing for this plan should be considered illustrative only. If this plan is considered in the future, Wakely recommends using separate inpatient and "all other" continuance tables to model this plan design. Another alternative would be to use a claim re-adjudication process on the VHCUREs commercial data to more accurately reflect the actuarial value of this plan design. In both cases, the underlying data would need to be adjusted to reflect the expected GMC population and expected costs.

   In addition to the cost sharing, the 80 percent high deductible plans also included an account feature for the subsidy eligible population. The subsidies were more generous than the current federal ACA cost sharing subsidies with additional, higher FPLs receiving some subsidies. Wakely used the Federal AVC to estimate the impact of these accounts. No rollover of accounts was assumed although the State may consider partial rollovers in the future, particularly to encourage certain behaviors, such as receiving annual preventive care. A few federal AVC results for the accounts were not intuitive. If this plan is considered in the future, the impact of these accounts should be re-evaluated using the same proposed methods to evaluate the actuarial value and cost sharing of the plans (separate continuance tables or claim re-adjudication).
4. *Results* are based on the various scenarios and assumptions used to produce the allowed cost estimates. To the extent any of these assumptions are updated or allowed costs are refined, the plan designs would need to be updated as well. Additionally and as noted, neither the Truven Benefit Modeler nor the Federal AVC could accommodate the cost sharing structure for some of the plans (particularly select 80 percent plans). These plan designs would require further refinement and scrutiny should there be future interest in these plan options.

Additional Benefit Modeling

As required under Act 48, the estimated cost of covering hearing, adult dental, adult vision and long term care were calculated. The following is a high level summary of the assumptions that went into each of these cost estimates. The cost estimates are shown in Appendix B-1. Wakely also estimated the impact of Medicare secondary coverage where the commercial MOOP was applied to the Medicare fee for service benefits.

A. Hearing: Vermont's current Essential Health Benefits (EHB) do not cover annual hearing exams or hearing aids so would not automatically be covered services under GMC. Medicaid currently covers this benefit.

   1. *Data*: VHCUREs data was used as a basis for the cost projections. It was assumed that if an individual had a hearing aid covered that their entire employer group

had hearing coverage. Using this methodology, data for only those assumed to cover hearing benefits were used as the base data. Both utilization and cost per service or device were calculated for these members.

2. *Assumptions:*
    i. Trend: The trends used for medical costs (and listed in the above table) from 2012 to 2017 were also used for hearing.
    ii. Benefits and Cost Sharing: The benefits were set to closely align with the Medicaid benefits. One annual exam per year is covered with a $20 copay and hearing aids were covered with no member cost sharing every three years. If the State of Vermont decides in the future to pursue a deductible plan, the cost sharing should be reviewed to ensure it is appropriate considering the medical coverage.
    iii. Administrative Expenses: An assumption of 7% was used which is likely reasonable since this benefit would be incorporated into the medical coverage.
    iv. Enrollment: The scenario used in the cost estimation excluded commuters and federal employees as well as wrap coverage for employees who remain on employer sponsored coverage. If the hearing benefit is considered in the future the cost estimates should be updated to reflect the current enrollment estimates.

B. Adult Vision: Vermont's current Essential Health Benefits do not cover annual vision exams or hardware except for pediatric coverage and would therefore not be automatically covered for adults under GMC. Medicaid currently covers an exam but does not cover hardware.

1. *Data*: VHCUREs data was used as a basis for the cost projections. It was assumed that if an individual had vision hardware covered that their entire employer group had vision coverage. Using this methodology, data for only those assumed to cover vision benefits were used as the base data. Both utilization and cost per service were calculated for these members although the utilization results did not appear reasonable. The Federal vision premiums were also used to check for reasonability of the resulting cost estimates.

2. *Assumptions:*
    i. Trend: The trends used were 3 percent annual. This considers that vision typically trends lower and also that the benefit maximum would limit the impact of trend unless adjusted for inflation.
    ii. Benefits and Cost Sharing: The benefits were set to closely align with the Federal vision benefits, since these benefits are the basis for the pediatric vision benefits under Vermont's EHB. One annual exam and hardware per year are covered (frames and contacts have annual benefits maximums although the pediatric benefit does not). Since Medicaid already covers

an exam, only the cost of hardware is included as an additional cost under GMC.

iii. Administrative Expenses: An assumption of 7% was used to match the commercial medical assumption but this is likely aggressive since this benefit historically has administrative costs that are a higher percent of overall costs.

iv. Enrollment: The scenario used in the cost estimation excluded commuters and federal employees as well as wrap coverage for employees who remain on employer sponsored coverage. If the adult vision benefit is considered in the future the cost estimates should be updated to reflect the current enrollment estimates.

v. Percent of Adults: The percent of GMC enrollees that this benefit would apply based on age was an output of the micro-simulation. Adults are expected to be approximately 84% of the commercial population and 58% of the Medicaid population.

C. Adult Dental: Vermont's current Essential Health Benefits do not cover dental except for pediatric coverage and would therefore not be automatically covered for adults under GMC. Medicaid currently covers dental up to an annual maximum of $510.

1. *Data:* The primary source of dental data was 2010-2012 Vermont specific data from Truven's MarketScan Dental Data, including data only for those aged 19 and older. Given most current dental benefits include annual benefit maximums, dental data is typically missing claims once the member reaches the maximum. As a result, dental data needs to be used with caution. As a result, we also used several other sources of data or premiums to check for reasonability. These include the State employee dental premiums, Delta Dental rate filings and Delta Dental adult only Vermont Health Connect premiums.

2. *Assumptions:*

i. Trend: The trends used were 6% annual. Dental trends have been lower recently but given the longer trending period, a more conservative trend assumption was used.

ii. Benefits and Cost Sharing: Cost estimates were calculated for three different benefit and cost sharing scenarios. These are shown in Appendix B-1.

iii. An adjustment was made to estimate the impact of missing claims due to current plans having an annual benefit maximum. This adjustment was made primarily to Restorative and Major services since these services are most likely to be impacted by the benefit maximum.

iv. Administrative Expenses: An assumption of 7% was used to match the commercial medical assumption but this is likely aggressive since this benefit historically has administrative costs that are a higher percent of overall costs.

v. Enrollment: The scenario used in the cost estimation excluded commuters and federal employees as well as wrap coverage for employees who remain on employer sponsored coverage. If the adult dental benefit is considered in the future the cost estimates should be updated to reflect the current enrollment estimates.
vi. Percent of Adults: The percent of GMC enrollees that this benefit would apply based on age was an output of the micro-simulation. Adults are expected to be approximately 84% of the commercial population and 58% of the Medicaid population.

3. *Results*: Based on our analysis and the various data points reviewed, if adult dental is considered under GMC, refining these estimates and underlying data is critical to more accurately estimating the cost of adult dental. There is also likely to be increased utilization in the early years of coverage as those without prior coverage have pent up demand.

D. Long Term Services and Supports: Currently, Long Term Services and Supports (LTSS) is provided to the Vermont Medicaid population. A cost estimate was developed assuming full LTSS coverage would be extended to the non-Medicaid population in 2017.

1. *Data:* The cost estimate was based on the 2012 Vermont Health Care Expenditure data. The 2012 non-Medicaid and non-Medicare covered costs associated with home health and nursing home care were used as a starting point for the projection.

2. *Assumptions:*
   i. Trend: Costs were trended from 2012 to 2017 based on the historical LTSS 2009-2012 trend, adjusted for enrollment increases, from the Expenditure Analysis. An additional trend adjustment was made to account for the aging population in Vermont. The total average trend used varied from 4.0 to 5.0 percent annually.
   ii. Induced Demand: Based on several LTSS studies, a significant amount of LTSS is either provided by unpaid caregivers or the need goes unmet. Cost estimates for the unpaid cost ranges vary significantly. The studies we reviewed included the following:
      • A November 2010 study produced by UMass Medical School's Center for Health Law and Economics and Office of Long-Term Support Studies on behalf of the Massachusetts Long-Term Care Financing Advisory Committee. This study indicated that $8.6 billion was paid for LTSS costs in Massachusetts and that an additional $9.6 billion in cost was either unpaid or came from needs that went unmet. Applying this additional cost to the

relative non-Medicaid and non-Medicare costs results in an induced utilization factor of about 5.0.[2]

• An AARP study titled "Valuing the Invaluable: 2011 Update" estimated that in 2009, $203 billion was paid for LTSS costs nationally and an additional $405 billion was provided by unpaid care givers. Applying this additional cost to the relative non-Medicaid and non-Medicare costs results in an induced utilization factor of about 8.0.[3]

• An additional AARP study from September 2011 indicated that in 2004, 72% of older people living in the community received assistance exclusively from unpaid caregivers. This study further supports the above indication that the cost of unpaid care-giving is about two to three times the amount of total paid caregiving.[4]

iii. Cost Sharing: The analysis assumes there would be no cost sharing by the member. Costs would be significantly reduced if there were cost sharing. Additionally, implementing a waiting period of 30 to 90 days could reduce the total cost estimate by 10% to 20%.

E. Medicare Secondary Coverage: Medicare remains primary after implementation of GMC. GMC could provide secondary coverage for those with Medicare as their primary insurance. When considering the 80% AV plan, which included an income sensitive out of pocket maximum, an analysis was done of applying these maximums as secondary coverage for those on Medicare. The results of this analysis are in Appendix B-10.

1. *Data:* CMS 2012 Limited Data Set (LDS) was used as the base data for the analysis. Vermont specific data, including both dual and non-dual members, was used. Allowed PMPMs and continuance tables were developed using this data. Only Part A and B data was included. Part D (prescription drug) was not included as part of the analysis since secondary coverage with the drug benefit would be complicated.

2. *Assumptions:*
   i. Trend: The allowed costs were trended at an average of 2.9 percent annually from 2012 to 2017 based on projected Medicare fee for service costs.
   ii. Cost Sharing: The secondary coverage would apply only to Medicare fee for service (FFS) members since the Medicare Advantage population already incorporates a MOOP. The FFS cost sharing was applied to the

[2] http://www.mass.gov/eohhs/docs/eohhs/ltc/ma-ltcf-full.pdf
[3] http://assets.aarp.org/rgcenter/ppi/ltc/i51-caregiving.pdf
[4] http://www.longtermscorecard.org/~/media/Microsite/Files/Reinhard_raising_expectations_LTSS_scorecard_REPORT_WEB_v5.pdf

2017 estimated data, with a resulting 85 percent actuarial value for Parts A and B (the actuarial value varies by duals and non-duals).

3. *Results:* The impact to the actuarial value was estimated for each of the plan designs considered for the current commercial market under GMC. Wakely's Medicare bid model was used with the data and assumptions above for each MOOP amount. Given the higher expected costs of Medicare beneficiaries, the resulting actuarial value increases significantly for the lower MOOP levels. There is a more modest increase in actuarial value for MOOPs that align with the maximum allowable under the ACA for the commercial market.

Reliances and Caveats

1. Wakely relied on data and projections that were provided by the health plans, the State, Rand and Jonathan Gruber. We performed reasonability checks, but did not audit the data we received. If the underlying data or information is inaccurate or incomplete, the results of our analysis may need to be modified accordingly.

2. It is impossible to project costs several years into the future with accuracy, and it is particularly difficult to project the effects of untested reforms. We made assumptions and estimates in order to develop these projections. To the extent that actual results differ from these assumptions, our results could be materially affected.

3. This document is intended for use by the State of Vermont for discussion purposes only. The report may not be appropriate for other purposes. Wakely does not intend to benefit and assumes no duty or liability to other parties who receive this work. The report should only be reviewed in its entirety and then only by qualified individuals.

Michael Costa
Deputy Director of Health Care Reform - Finance
Agency of Administration
State of Vermont

December 26, 2014

Subject: Risk Mitigation for Green Mountain Care

Dear Michael,

Wakely was retained by the State of Vermont (State) to develop considerations in two specific approaches towards risk mitigation for Green Mountain Care (GMC): reinsurance with specific stop loss and reserve for adverse deviation of claim costs. We do not recommend the State purchase stop loss reinsurance given the anticipated size of GMC. We also estimated that an insurance company with the size and risk characteristics similar to those of GMC would need to hold between 4.4% and 13.0% of annual claims.

Specific Stop Loss to Mitigate High Cost Claimants

Specific stop loss insurance is typically purchased from reinsurers and protects a self-funded employer group or insurer from the financial impact of high cost individuals. It does not provide much protection against overall adverse experience. The cost of specific stop loss insurance is typically high relative to the coverage afforded. On average, reinsurers expect to pay out about 60% of the premiums they collect for the coverage meaning the cost of the coverage is approximately 40% of the premiums. Self-funded employers with a couple of hundred to thousands of covered employees typically purchase reinsurance to protect against catastrophic costs for a single individual or multiple high cost claimants in a given year – outside of what would be expected based on historic experience. For these employers, a single million dollar claim could represent a large proportion of their overall medical expenditures and cash reserves. For Green Mountain Care, with roughly $3.6 billion in estimated annual claim costs (excludes long term support and services and other Medicaid fixed costs), individual large claims are very unlikely to materially affect overall expenditures. In addition, such a large block of business is very stable and past experience is credible for predicting future large claims incidence. The most significant risk to the financial health of a large cohort like the proposed Vermont system include inappropriate provider contracts, mispricing, pandemic type events and fraud. While the impact of some of these may be partially mitigated by the presence of stop loss insurance, it is an inefficient and expensive way of addressing these risks.

Capital to Support GMC Program

GMC is considering retaining capital for purposes of addressing potential adverse deviations in medical expenditures and tax revenue underlying a potential change to a state run healthcare program. One approach to considering appropriate capital levels to address such adverse deviations is the NAIC's Risk-Based Capital (RBC) formula.

From http://www naic.org/cipr_topics/topic_risk_based_capital htm:

Risk-Based Capital (RBC) is a method of measuring the minimum amount of capital appropriate for a reporting entity to support its overall business operations in consideration of its size and risk profile. RBC limits the amount of risk a company can take. It requires a company with a higher amount of risk to hold a higher amount of capital. Capital provides a cushion to a company against insolvency. RBC is intended to be a minimum regulatory capital standard called the Authorized Control Level (ACL) and not necessarily the full amount of capital that an insurer would want to hold to meet its safety and competitive objectives. In addition, RBC is not designed to be used as

a stand-alone tool in determining financial solvency of an insurance company; rather it is one of the tools that give regulators legal authority to take control of an insurance company if reserves fall below the ACL.

Insurance companies must hold at least 200% of the ACL to avoid any actions and typically hold 250% to 350%. Therefore, an insurance company with the size and characteristics of the Vermont system would have to hold somewhere between 4.4% and 13% of annual claims to meet typical insurance company RBC targets under the assumptions modeled.

We would recommend that a full Enterprise Risk Management (ERM) analysis be performed as key options for funding, provider payment, benefits and administration are selected and refined. This type of analysis may consider RBC fundamentals rather than applying the NAIC's formula from the RBC Calculator.

Wakely used the NAIC's 2014 RBC model and entered key values into the model. The inputs included "premium equivalents" and claims for enrollees currently in commercial and Medicaid lines. Medicare members were not considered in this analysis. The claims and premiums were developed in a separate analysis and any assumptions/limitations described in that analysis apply but may not be described here.

We assumed that GMC would offer coverage at the 94% actuarial value to all members. The scenario incorporates the higher enrollment estimate, including but not limited to coverage for commuters and federal employees.

We did not consider that many government programs operate on a "pay as you go" basis. This means that liabilities are not considered when determining if there is sufficient cash to cover operations. We assume funding would take place in advance of claims being incurred each month and that payments to providers would follow typical insurance company payment patterns, meaning there would be approximately one to three months' worth of incurred claims in cash available over and above any capital retained to address adverse experience. Our RBC modeling estimates RBC levels required over and above this cash, on the assumption that this cash could not or should not be used to address adverse deviations.

We assumed some portion of the claims are capitated to reflect the fact that the Green Mountain Care Board sets hospital budgets and that Vermont is moving away from fee for service toward capitation. For RBC calculations, hospital budgets may effectively be modeled as capitations. Under a scenario of all providers being paid under capitated arrangements, we estimate the ACL of the program at approximately 2.2% of annual incurred claims (approximately $81M assuming $3.6B in annual incurred claims). Under a scenario of 30% of provider payments being capitated and 70% being contractual arrangements or fee for service, we estimate the Authorized Control Level at approximately 3.8% of annual incurred claims (approximately $136M).

The RBC formula was not developed to specifically inform state capital levels under a system such as that being considered in Vermont. However, it does provide one useful, industry-accepted construct for considering capital levels to support insurance operations.

The RBC formula was not set up to handle certain unique characteristics of potential state run health programs, including the following proposed, high level mechanisms:

1. Premiums are actually comprised of tax revenue and amounts paid by covered state residents.
2. Provider reimbursement rates in Vermont are partially set using state budgeting mechanisms.
3. Provider reimbursement rates can be adjusted prospectively if tax revenues are insufficient.

Many details were not available nor could be reflected in the model, including but not limited to covered and excluded populations, taxing mechanisms and timing, the political environment, economic environment, required administrative functions and costs, specific provider contracting levels and mechanisms, and medical management programs.

A state run healthcare insurance system, with unilateral taxing and provider contracting authority is a very different entity than the typical health insurance company. Therefore, the modeling discussed above should be considered only as one viewpoint related to this question, rather than the only viewpoint. In addition, emerging details up for debate may materially affect estimates produced as part of this modeling.

Caveats

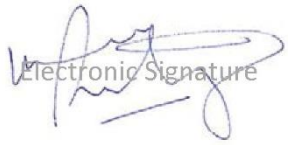
Wakely relied on data and projections that were developed jointly by Wakely, the State, and Jonathan Gruber. We performed reasonability checks, but did not audit the data we received from non-Wakely entities. If the underlying data or information is inaccurate or incomplete, the results of our analysis may need to be modified accordingly.

It is impossible to project costs and capital needs several years into the future with accuracy, and it is particularly difficult to project the effects of untested reforms. We made assumptions and estimates in order to develop these projections. To the extent that actual results differ from these assumptions, our results could be materially affected.

This document is intended for use by the State of Vermont for discussion purposes only. The report may not be appropriate for other purposes. Wakely does not intend to benefit and assumes no duty or liability to other parties who receive this work. The report should only be reviewed in its entirety and then only by qualified individuals.

Guidelines issued by the American Academy of Actuaries require actuaries to include their professional qualifications in all actuarial communications. I am a member of the American Academy of Actuaries, and meet the qualification standards for performing the analyses in this report.

Julie Peper, FSA, MAAA
Director and Senior Consulting Actuary
Wakely Consulting Group



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Appendix E-1: All-Payer Health Care Payment System Background

The purpose of this concept paper is to describe the general approach Vermont is proposing for all-payer health care payment reform. This paper can serve as a starting point for discussion among internal and external stakeholders, including the federal Centers for Medicare and Medicaid Services (CMS), about the proposed approach.

Vermont is developing a payment reform strategy that is consistent with federal policy and builds on the public/private partnership that has been established in the state. Our proposed approach allows for appropriate provider autonomy and consumer protection under the umbrella of a transparent, effective regulatory system.

Vermont has undertaken a multi-year effort to implement universal, comprehensive health care coverage for all of the state's residents that is equitably financed and made affordable well into the future. The state plans to seek a federal all-payer waiver that would permit Medicare and Medicaid participation in payment and delivery system reforms that are central to the plan. These reforms build on the innovative models supported by CMS and on the progress made within Vermont to implement those models. Specific Vermont achievements in payment and delivery system reform, made with CMS support, include:

- Vermont has used its long-standing section 1115 waivers (the Global Commitment and Choices for Care) to fund Medicaid managed care investments and to shift services away from institutional care to community-based services;
- More than 80 percent of Vermonters are served by an Advanced Primary Care Medical Home that is part of the MACPAC all-payer demonstration;
- The vast majority of Vermont providers, including all of our hospitals and New Hampshire-based Dartmouth Hitchcock Medical Center (DHMC, a major provider of health care to Vermonters) are in one of three Vermont ACOs participating in the Medicare Shared Savings Program;
- DHMC also is in the Pioneer ACO program for New Hampshire;
- The majority of Vermont's federally-qualified health centers have formed a primary care-based ACO;
- Vermont received a State Innovation Model (SIM) grant, which has supported expansion of the shared savings program to Medicaid and commercial insurers. Three of our ACOs are participating in the commercial ACO program, while two are participating in the Medicaid program;
- The SIM grant also is supporting development of all-payer bundled payments and full build-out of Vermont's health information exchange infrastructure.

Building on this active participation in CMS initiatives, and CMS support of Vermont's innovation efforts, Vermont is proposing a statewide, all-payer system of provider payment. Governor Shumlin has proposed covering the bulk of Vermonters through one payer under a system of public financing. We believe this proposal could work

equally well with that model or with our existing, limited multi-payer private insurance market (two carriers do business in Vermont's merged individual and small group market and only three sell in the large group market).

Vermont's proposal has two strengths, in addition to the strong foundation described above:

1. An explicit commitment from the Governor, backed by Vermont law passed in 2011, to constrain health care cost growth to a level that is affordable, relative to the state's overall economic growth, and to move away from volume-based provider payment;
2. A mature regulatory system under the authority of the Green Mountain Care Board (GMCB). The GMCB was created in 2011 as an independent, full-time, professional board that reviews and approves health insurer rates, annual hospital budgets and major capital expenditures by health care providers.
    - The GMCB also is the overseer of payments to ACOs and other key aspects of the commercial and Medicaid shared savings programs, including calculation of shared savings, risk adjustment, risk corridors and quality measurement.
    - The GMCB has broad (as yet unused) statutory authority to implement broader provider rate-setting, beyond the hospital sector.
    - The GMCB set a limit of 3 percent growth in hospital budgets for current year. Actual budgets approved by the board are slated to grow at 2.7 percent, year-over-year. These budgets include not only expenditures for hospital services, but also the majority of physician payments, as a high and growing percentage of physicians in the state are employed by hospitals.
    - In setting the limit on hospital budget growth, the board looked to indicators of economic growth in the state and made clear that their goal was to link health care cost growth and economic growth over the long term.

Building on these strengths, Vermont proposes a system of health care provider payment oversight with three central elements:

1. Continued regulatory oversight of the parameters of ACO/payer relationships, including payment levels, rates of increase in payment year-to-year and quality measurement;
2. Oversight of insurer payments to non-ACO providers, and a requirement for a fair, transparent and standardized fee schedule for those providers;
3. Continued oversight of health insurance premiums and premium growth.

The state is currently assessing the interface between these regulatory schemes and regulation of hospital budgets (which has existed since the 1980s), and the extent to which the hospital budget review process is necessary, and/or whether it should be redesigned, under a fully-developed system of broader provider payment regulation.

With these three elements in place (at a minimum), Vermont would propose that we commit to:

- Control of the rate of growth in total health care costs at a rate that is consistent with growth in the economy;
- Deliberate movement further away from fee-for-service provider payment by transitioning ACO payments from shared savings to a model involving two sided risk and increased provider accountability for total costs and quality;
- Obtaining a commitment from all commercial payers in the individual and small group market, plus Medicaid, to participate in the models of payment to both ACOs and non-ACO providers;
- Adoption by the GMCB of parameters for all-payer payments to ACOs;
- Adoption by the GMCB of rules for all-payer payments to providers outside of ACOs;
- Continued payments by Medicaid and commercial payers to Blueprint Advanced Primary Care Medical Homes and Community Health Teams.

We would be asking CMS for:

- Approval for Medicare participation in the Vermont provider payment model – for both ACO payments and non-ACO payments;
- Necessary approval from CMS for Medicaid participation in this model;
- Continued participation in payments to Advanced Primary Care Medical Homes and Community Health Teams.

Medicare participation in this model is critical, as will make our policies universal, consistent and substantially more efficient and effective. This approach has the potential to reduce administrative costs for payers, providers and government and maximize positive delivery system change through consistent payment rules and monitoring. The end result will be lower costs for all payers.

Further details of the ACO and non-ACO provider payment models will be developed by GMCB board members, staff and contractors over the next 12 months, with input from the Governor's Office, key stakeholders, the Agency of Human Services and the Department of Vermont Health Access. Elements of the proposal that require further development include:

- The specific methodology for the ACO payment system;
- The specific methodology for the non-ACO payment system;
- Whether and how to incorporate in payment models services beyond the normal scope of ACOs, including long term services and supports;
- The extent to which per capita payments or payment levels for specific services from payers to providers will vary across payers;
- The extent to which, across all payers, per capita payments or payment levels for specific services will vary by provider;
- The specific levels of the limits to be applied to health care cost growth;
- The specific methodology for attributing Vermont's population to providers;
- Membership rules and roles for participating providers;
- Appropriate consumer protections in a statewide, all-payer system of health care cost and quality regulation.

Vermont is a relatively low-cost state for the Medicare program, but per-capita Medicare growth rates exceeded the national average in recent years (see data below). We believe this program would offer CMS a compelling example of how a low-cost, rural state, through a deliberate commitment to low rates of cost growth, could reduce expected Medicare expenditures, reduce pressure on Medicaid and private premiums and improve outcomes for all residents of the state.

VT total (all payers) per capita health care costs, 2009	$7,635 (above national average)
VT total rate of growth 1991–2009	6.7% (above national average)
National per capita all payers, 2009	$6,815
National all-payer trend, 1991–2009	5.3%
VT Medicare per capita	$8,719 (below national average)
VT Medicare rate of growth 1991–2009	6.8% (above national average)
National Medicare per capita, 2009	$10,365
National Medicare rate of growth, 1991–2009	6.3%

Appendix E-2: Affordable Care Act Waiver Background

Before Vermont can fully implement Green Mountain Care, it needs the federal government to waive certain parts of the Affordable Care Act. The Affordable Care Act is a federal law that requires states to have Health Benefit Exchanges offering health insurance plans[1] and administering federal subsidies to individuals to make the plans more affordable.[2] Individuals pay a penalty if they do not have health care coverage.[3] Large employers pay a penalty if they do not offer affordable and adequate health care coverage.[4] Starting in 2017, the federal government can waive a state's obligation to any or all of the above provisions and allow the state to implement its own innovative health care coverage programs as long as its program maintains the following parameters:

- Coverage of the same amount or more people than under the ACA[5]
    - Green Mountain Care will cover more people than the ACA because it will cover all Vermont residents.
- Coverage that is as comprehensive or more comprehensive than coverage under the ACA[6]
    - Green Mountain Care will offer the same covered services as ACA plans.
- Coverage that is as affordable or more affordable than coverage under the ACA[7]
    - At a minimum, Green Mountain Care will apply the ACA's premium tax credit and cost-sharing reduction sliding scale to a gold-level plan.
- A health care system that is deficit neutral for the federal government[8]
    - Green Mountain Care will maintain reciprocal deficit neutrality for the federal government and the State of Vermont.

To reach universal coverage, Vermont would request waivers of the Health Benefits Exchange, the individual mandate, and the large employer penalty through Section 1332 of the Affordable Care Act.

The ACA expanded health care coverage, but was never designed to provide universal coverage. Green Mountain Care will achieve universal coverage by having residency as its only eligibility requirement and eliminating barriers such as premium due dates and enrollment deadlines. In order to achieve this, Vermont would request a waiver from the Affordable Care Act's requirements around:

- Health Benefits Exchange
- Individual mandate
- Large employer penalty

[1] ACA, Subtitle D, Parts I & II.
[2] I.R.C. § 36B.
[3] I.R.C. § 5000A.
[4] I.R.C. § 4980.
[5] ACA, Section 1332(b)(1)(C); 42 U.S.C. 18052(b)(1)(C).
[6] ACA, Section 1332(b)(1)(A); 42 U.S.C. 18052(b)(1)(A).
[7] ACA, Section 1332(b)(1)(B); 42 U.S.C. 18052(b)(1)(B).
[8] ACA, Section 1332(b)(1)(D); 42 U.S.C. 18052(b)(1)(D).

Waiver of Health Benefits Exchange

The Affordable Care Act requires each state to have at least one Health Benefit Exchange through which individuals and small businesses can purchase qualified health plans from insurance companies or can access public coverage through Medicaid. Vermont, in compliance with the Affordable Care Act, started operating its Health Benefits Exchange, called Vermont Health Connect, on October 1, 2014. Vermont, like all other state-based exchanges, has had operational challenges in its start-up phase, but continues to work towards full and better operations for both individuals and small businesses.

Although Vermont's Health Benefit Exchange, once fully operational, will afford greater access to health care coverage and financial help to make coverage more affordable, it does not prevent loss of coverage. In a 2012 statewide survey, Vermonters most commonly cited the following reasons for losing coverage: affordability, job loss, waiting periods for coverage, eligibility issues, and problems with paperwork or late payments.[9] Many of these barriers continue to exist for Vermonters despite implementation of a Health Benefits Exchange. In order to provide coverage to all Vermonters, Vermont must move away from a complicated system of insurance-based health care and public coverage to a system based solely on residency. Accordingly, Vermont would ask CCIIO to waive the Affordable Care Act's requirement to have a state or federal Health Benefit Exchange.[10]

Waiver of Large Employer Penalty

The Affordable Care Act furthers the traditional employer-sponsored health insurance model by instituting a penalty on large employers who do not offer health care coverage or who offer health care coverage that is unaffordable or inadequate. In Vermont, the traditional employer-based health insurance model has not led to universal coverage, with job loss being the most cited reason for loss of coverage.[11] Although health insurance is available under the Health Benefit Exchange, individuals may experience gaps in coverage due to a misalignment of the qualified health plan start date or failure to sign up within the special enrollment period. As a result, the current employer-based health insurance model will not lead to universal coverage in Vermont.

By basing eligibility for Green Mountain Care solely on residency rather than the complicated mix of eligibility criteria based on income and employment, Vermont would ensure that its entire population receives continuous coverage. Because all Vermont residents would have Green Mountain Care, an employer penalty will be superfluous. Accordingly, Vermont would request that the Affordable Care Act's large employer penalty be waived.

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[9] Vermont Department of Financial Regulation Insurance Division, 2012 Vermont Household Health Insurance Survey, Pg. 77, http://www.dfr.vermont.gov/sites/default/files/VHHIS_2012_Final_Report.pdf.

[10] Parts I & II of subtitle D in Title I of the Affordable Care Act.

[11] Vermont Department of Financial Regulation Insurance Division, 2012 Vermont Household Health Insurance Survey, Pg. 77, http://www.dfr.vermont.gov/sites/default/files/VHHIS_2012_Final_Report.pdf.

Waiver of Individual Mandate

As with the large employer penalty provision, Vermont would also request that the individual mandate be waived. All residents of Vermont would have Green Mountain Care, so all residents of Vermont will meet the Affordable Care Act's requirement of minimum essential coverage, making the individual penalty unnecessary.

The Health Benefits Exchange, large employer penalty, and individual mandate requirements under the Affordable Care Act bind individuals and small businesses to insurance-based coverage. Waiving these provisions would provide Vermont with the flexibility to achieve universal health care coverage through providing Green Mountain Care to all residents.

To achieve comprehensive coverage, Vermont would request a waiver of the qualified health insurance plan.

Vermont would ask CCIIO to waive the Affordable Care Act's requirements for qualified health benefits plans. The Affordable Care Act requires that qualified health insurance plans be offered at the bronze, silver, gold, and platinum levels.[12] This leaves some individuals at the silver or bronze level with higher out of pocket costs. Green Mountain Care would provide individuals with one plan that compares to a gold level or better, ensuring greater coverage for all Vermonters than is provided today.

In addition to better out of pocket coverage, Green Mountain Care would provide the same or more covered services than what is offered today. Green Mountain Care would have all of the Essential Health Benefits under the Affordable Care Act.[13] Additionally, Act 48 requires Vermont to design Green Mountain Care to address chronic care in the most effective way possible. Other benefits such as adult dental or adult vision must also be considered in designing Green Mountain Care's benefit plan. Vermonters who qualify for Medicaid coverage will continue to receive coverage through Green Mountain Care, including Medicaid benefits. Vermont would seek to integrate its current Section 1115 Global Commitment to Health waiver with the new permissions through Section 1332 of the ACA to ensure that Green Mountain Care operates as a seamless, single system.

Waiving the Affordable Care Act's requirements around qualified health insurance plans would allow Green Mountain Care to provide the same or more covered services as well as greater coverage of out of pocket costs than many current qualified health insurance plans.

[12] Sec. 1332(c) of the Affordable Care Act.

[13] Sec. 1332(b) of the Affordable Care Act. Vermont's Essential Health Benefits are listed at https://www.cms.gov/CCIIO/Resources/Data-Resources/Downloads/vermont-ehb-benchmark-plan.pdf.

To achieve greater affordability, Vermont would request a waiver of the premium tax credit and cost sharing reductions.

In order to increase access to private insurance plans, the Affordable Care Act provides premium tax credits and cost-sharing reductions to eligible individuals.[14] The cost sharing reductions and the advance payment of the premium tax credits are paid directly to the insurers. The premium tax credits and the cost sharing reductions are not available to individuals with other sources of affordable, adequate coverage, such as employer-sponsored insurance or Medicare.

Before the Affordable Care Act was passed, Vermont had affordable health care programs for individuals up to 300% FPL. These programs had premiums and coverage that were more affordable to many Vermonters than subsidized insurance under the ACA. Vermont is trying to maintain the affordability standard it had before the ACA,[15] but despite these efforts, one of the most-cited barriers to individuals maintaining health care coverage is cost.[16] Green Mountain Care would eliminate cost as a barrier by breaking the direct link between monthly payment and health care coverage. The coverage under Green Mountain Care would be publicly financed in an income-sensitized manner that maintains or improves upon Vermont's current subsidized structure for plans at an 80% actuarial value (AV) or greater, which equates to a gold level plan, ensuring that all Vermonters contribute in a way that maintains or surpasses the ACA's affordability standards.

To achieve public financing of Green Mountain Care, Vermont would request that CCIIO waive the Affordable Care Act's premium tax credit and cost sharing reductions as they are currently administered. Instead of going to health insurance companies, these funds will go directly to the state for purposes of equitably financing and administering Green Mountain Care.

ACA Waiver Federal Funding Calculation

Under the ACA waiver, Vermont may receive the premium tax credit, cost sharing reductions, and small business tax credit payments that would have been paid had the ACA's requirement to have an Exchange selling health insurance not been waived.[17]

Premium Tax Credits and Cost Sharing Reductions

Currently, the federal government provides advanced payment of the premium tax credit and cost sharing reduction payments directly to insurers on behalf of eligible individuals. Under the ACA waiver, Vermont would waive this requirement because residents would move from paying premiums for insurance plans through Vermont Health Connect to having publicly-

[14] Parts I of subtitle E in Title I of the Affordable Care Act; Section 36B of the Internal Revenue Code of 1986.
[15] Vermont currently reduces premiums through subsidies that reduce the federal advanced premium tax credit's applicable percentage by 1.5% for Vermonters up to 300% FPL and subsidizes cost sharing reductions from 73% AV to 77% AV for Vermonters from 200-250% FPL and from 70% to 73% AV for Vermonters from 250-300% FPL.
[16] Vermont Department of Financial Regulation Insurance Division, 2012 Vermont Household Health Insurance Survey, Pg. 77, http://www.dfr.vermont.gov/sites/default/files/VHHIS_2012_Final_Report.pdf.
[17] ACA § 1332(a)(3); 42 U.S.C. § 18052(a)(3).

financed health care coverage under Green Mountain Care.[18] Under the ACA waiver, the federal government would pay Vermont the aggregate amount of the premium tax credits and cost sharing reduction payments that would have otherwise been paid under the ACA.[19]

The ACA does not define how the premium tax credits and cost sharing reductions payments will be calculated. After analyzing various options, Vermont proposed that the federal government calculate the aggregate amount of the premium tax credits and cost sharing reduction payments by using a modified formula that the federal government is already using with the Basic Health Program (BHP).

With the BHP, the ACA gives states the flexibility to establish health coverage for low-income individuals not eligible for Medicaid.[20] Like the ACA waiver, a state's BHP must maintain the affordability and coverage requirements set out in the ACA.[21] In return, the federal government will transfer to the state 95% of the amount in premium tax credit and cost sharing reduction payments that would have otherwise been available under the ACA. The ACA and its attendant rules set out several requirements around these calculations, including the fact that the calculation must be made on a per enrollee basis where age, income, coverage tier, geographic area, and health status are taken into account.[22]

Because the principles behind the BHP program and the ACA waiver are similar, Vermont proposed using the BHP formulas modified by Vermont-specific factors to calculate the federal share for the premium tax credits and cost sharing reduction payments under the ACA waiver. For instance, Vermont uses community rating, so any factors based on age or tobacco rating would be omitted from the formula. Vermont is also comprised of one geographic area for insurance rates, so that factor may be omitted as well. Also, the ACA requires BHP funding to be 95% of the total estimated funding, whereas the ACA waiver has no such factor. After taking these adjustments into account, Vermont created formulas to calculate the premium tax credit and cost sharing payment amounts.

Premium Tax Credit Formula

Vermont created the following formula to calculate the premium tax credit:

$$PTC_{c,h,i} = [ARP_c - (\Sigma_j I_{h,i,j} \times PTCF_{h,i,j})/n] \times IRF \times E_{c,h,i}$$

$PTC_{c,h,i}$= Premium tax credit portion of ACA waiver payment rate
c= Coverage status (self-only or applicable category of family coverage)
h= Household size
i= Income range (as percentage of FPL)

[18] ACA § 1332(a)(2); 42 U.S.C. § 18052(a)(2).
[19] ACA § 1332(a)(3); 42 U.S.C. § 18052(a)(3).
[20] ACA § 1331; 42 U.S.C. § 18051.
[21] ACA § 1331(a)(2); 42 U.S.C. § 18051(a)(2) (with the exception of the cost sharing reduction standard where individuals from 150% FPL to 200% FPL may be covered by an 80% AV plan rather than an 87% AV plan).
[22] ACA § 1331(d)(3); 42 U.S.C. § 18051(d)(3); 79 FR 14111 (March 12, 2014).

ARP_c= Adjusted reference premium
$I_{h,i,j}$= Income (in dollars per month) at each 1 percentage-point increment of FPL
j= j^{th} percentage-point increment FPL
n= Number of income increments used to calculate the mean PTC
$PTCF_{h,i,j}$= Premium Tax Credit Formula percentage
IRF= Income reconciliation factor
$E_{c,h,I}$ = Number of individuals enrolled

Premium tax credit portion of ACA waiver payment rate
Like the BHP, the premium tax credit estimate would be calculated by rate cells in which coverage status, such as single, couple, or family, is taken into account along with household size and income range. Vermont would use income ranges up to 400% FPL because income eligibility for the premium tax credit goes up to 400% FPL. Within each rate cell, the formula would estimate the average premium tax credit, which is the difference between the second lowest cost silver plan premium available and the amount of income that a household would be required to pay if the members of the household were enrolled in the second lowest cost silver plan in Vermont Health Connect.

Adjusted reference premium
Vermont would take the current second lowest cost silver plan premium and trend it out to 2017. For its trend going forward, Vermont proposes using the regional average change in the second lowest cost silver plan premium or the National Health Expenditures projection if the regional trend has large variations that would normally not apply to Vermont. Vermont does not use age rating, but proposes applying an age adjustment to the reference premium in order to reflect Vermont's rapidly aging population.[23] Without an age adjustment, Vermont's reference premium would be based on the health of a population that no longer exists. Vermont also suggests employing a population health factor to the reference premium similar to the BHP's population health factor. The BHP population health factor takes into account that the cost of providing care to individuals with income below 200% FPL is often greater than other individuals with health insurance.[24] Similarly, to the extent that Vermont's large insurance market has a different rate than the small and individual market, that difference would be reflected in the adjusted reference premium.

Calculation of the average premium tax credit
Once the adjusted reference premium is determined, the average premium tax credit for the rate cell would be calculated by subtracting from the adjusted reference premium the average amount that would have been paid for a second lowest cost silver plan after applying the premium tax credit.

[23] Vermont was one of three states with the largest increases in median age between 2000 and 2010. 2010 Census Briefs, *Age and Sex Composition: 2010,* May 2011, http://www.census.gov/prod/cen2010/briefs/c2010br-03.pdf.

[24] The BHP population health factor for 2015 and 2016 was 1.0. 79 FR 63363 (Oct. 23, 2014).

Income reconciliation factor
Next, Vermont suggests multiplying the average premium tax credit calculation with an income reconciliation factor. Like the BHP, Vermont proposes that individuals do not have to reconcile their premium tax credits at the end of the year. Accordingly, Vermont applies an income reconciliation factor based on previous experience with reconciliation of tax credits in order to take reconciliation into account without Vermonters having to do the calculation on their tax forms.

Number of individuals enrolled
For the number of individuals enrolled, Vermont estimated all of the individuals that would have been eligible for the premium tax credit under the ACA, absent the waiver.

Vermont Premium Subsidy
Under Act 50 of 2013 and in its 1115 Global Commitment waiver, Vermont further subsidizes the premium tax credits by decreasing the percentage of income applied to the second lowest silver plan by 1.5%. Vermont received federal match for this program and would request retention of the match going forward through its Section 1115 waiver renewal. The request would be based on the total number of eligible Vermonters in Green Mountain Care who are ineligible for Medicaid, Medicare, TRICARE, federal employees and a small number of individuals estimated to take up employer sponsored insurance, whose incomes are between 138-300% of federal poverty.

Cost sharing reduction formula
Vermont created the following formula to calculate the cost sharing reduction payments:

$$CSR_{c,h,i} = ARP_c \times FRAC / AV \times IUF_{h,i} \times \Delta AV_{h,i} \times E_{c,h,I}$$

$CSR_{c,h,i}$= Cost-sharing reduction subsidy portion of BHP payment rate
c= Coverage status (self-only or applicable category of family coverage) obtained through BHP
h= Household size
i= Income range (as percentage of FPL)
ARP_c= Adjusted reference premium
FRAC= Factor removing administrative costs
AV= Actuarial value of plan (as percentage of allowed benefits covered by the applicable QHP without a cost-sharing reduction subsidy)
$IUF_{h,i}$= Induced utilization factor
$\Delta AV_{h,i}$= Change in actuarial value (as percentage of allowed benefits)

Cost sharing reduction portion of ACA waiver payment rate
As with the BHP and the premium tax credit calculations, the cost sharing reduction estimate would be calculated by rate cells in which coverage status, such as single, couple, or family, is taken into account along with household size and income range. Vermont uses income ranges up to 250% FPL because income eligibility for the cost sharing reduction goes up to 250% FPL. Within each rate cell, the formula estimated the average advance cost-sharing reductions

payment that would have been provided to individuals had they enrolled through Vermont Health Connect.

Adjusted reference premium
Vermont would take the current second lowest cost silver plan premium and trend it out to 2017. For its trend going forward, Vermont used the regional average change in the second lowest cost silver plan premium or the National Health Expenditures projection if the regional trend has large variations that would normally not apply to Vermont. As with the premium tax credit calculation, Vermont would apply an age adjustment and a population health factor to ensure an accurate reference premium in the future.

Factor removing administrative costs
The BHP formula includes a factor removing administrative costs (FRAC) to ensure that the federal government is funding essential health benefits rather than taxes and other administrative costs. Under the EHB rules, the suggested FRAC is 80% because that is the factor currently used to calculate cost sharing reduction payments. Vermont would use 88.3% because that number reflected the administrative costs of the largest insurer in Vermont and Vermont Medicaid, and to the extent that Green Mountain Care would reduce administrative costs, that reduction should be reflected in the cost sharing reduction calculation.

Actuarial value of plan, induced utilization factor, and change in actuarial value
As with the BHP formula, the actuarial value of the plan is 70% AV because the reference premium is the second lowest cost silver plan.

Vermont would also incorporate the BHP's induced utilization factor, which is also used to calculate the cost sharing reductions. The induced utilization factor takes into account that individuals with lower out of pocket costs are more likely to use health care services. The induced utilization factor used by the federal government is 1.12 for individuals up to 200% FPL and 1.00 for individuals up to 250% FPL.

The change in actuarial value is the difference between the second lowest costs silver plan's AV of 70% and the subsidized cost sharing actuarial values of 94% AV for those up to 150% FPL, 87% AV for those up to 200% FPL and 73% AV for those up to 250% FPL.

Number of individuals enrolled
For the number of individuals enrolled, Vermont estimated all of the individuals who would have been eligible for cost sharing reductions under the ACA, absent the waiver.

<u>Vermont Cost Sharing Subsidy</u>
Although Vermont further subsidizes the federal government's cost sharing reductions up to 300% FPL, the funding is purely state funds, so there is no need to calculate a federal contribution.

The ACA Waiver Application

In order to comply with federal law,[25] Vermont's ACA waiver application would include actuarial analyses and actuarial certifications to support Vermont's estimates that Green Mountain Care would cover the same or more people as the ACA with health care coverage that is equally or more comprehensive and affordable than ACA coverage. Vermont would also submit:

- A comprehensive description of the Vermont legislation and program to implement waiver
- A copy of the enacted state legislation that provides the state with authority to implement the proposed waiver
- A list of the provisions the state is seeking to waive
- Actuarial analysis and actuarial certifications showing that Vermont has met:
    - Comprehensive coverage requirement
    - Affordability requirement
    - Scope of coverage requirement
- Economic analyses showing that Vermont has met:
    - Comprehensive coverage requirement
    - Affordability requirement
    - Scope of coverage requirement
    - Federal deficit requirement, including:
        - 10 year budget plan that is deficit neutral, including administrative costs
        - Analysis regarding the estimated impact of the waiver on health insurance coverage in Vermont
- Data and assumptions on comprehensive coverage requirement, affordability requirement, scope of coverage requirement and federal deficit requirement, including
    - Information on the age, income, health expenses and current health insurance status of the relevant population; the number of employers by number of employees and whether the employer offers insurance; cross- tabulations of these variables; and an explanation of data sources and quality;
    - An explanation of the key assumptions used to develop the estimates of the effect of the waiver on coverage and the federal budget, such as individual and employer participation rates, behavioral changes, premium and price effects, and other relevant factors.
- Implementation timeline
- Whether the waiver increases or decreases administrative burden on individuals, insurers and employers
- Explanation of how the waiver will affect the implementation of the provisions of the ACA that are not waived
- Explanation of how the waiver will affect residents seeking care outside of Vermont

[25] 31 CFR Part 33; 45 CFR Part 155.

- Explanation of how Vermont will provide federal agencies with the necessary information to administer waiver at federal level
- Explanation of how the proposal will address individual, employer, insurer, or provider compliance, waste, fraud, and abuse
- Reporting targets: quarterly, annual, and cumulative targets for:
    - Comprehensive coverage requirement
    - Affordability requirement
    - Scope of coverage requirement
    - Federal deficit requirement
- Written evidence that Vermont held at least two public hearings
- Any other information consistent with guidance provided by the Secretary of Health and Human Services (HHS) or the Secretary of the Treasury.

Public Notice and Timelines for the ACA Waiver Process

Under federal law, Vermont must ensure appropriate public comment on its ACA waiver application and follow the following timelines:

- Prior to submitting the application, the state would give public notice and provide a public comment period, including public hearings. The public notice would include:
    - A comprehensive description of the application for the waiver
    - Information on where copies of the application for the waiver are available for public review and comment
    - Information on where and how public comments may be submitted
    - The location, date, and time of state public hearings
- Vermont would then submit the application to HHS
- 45 days after submission, the HHS Secretary and Treasury Secretary would complete preliminary review of application
    - Federal agencies would then provide public notice of completed application
- No later than 180 days after preliminary review complete, HHS would provide a decision-making period and follow federal public notice process

Submissions to HHS

Vermont submitted a white paper to CCIIO and to the general assembly on November 1, 2014. This paper can be found here:
http://hcr.vermont.gov/sites/hcr/files/2014/1332%20Concept%20Paper%20FINAL.pdf

Meetings with Federal Partners

Collaboration with federal partners is critical for Vermont to implement a universal health care program. Vermont has been working closely with the federal government since the passage of Act 48 to ensure the state is in position to be granted a waiver at the earliest possible opportunity as required by Act 48.

Vermont was expected to be the first state to apply for the waiver and thus our collaboration with the U.S. Department of Health and Human Services (HHS) has included contributing to the

development of the waiver application process itself, as well as discussing Vermont's specific proposals for meeting the waiver requirements, including evidence and analysis showing that Vermont can meet those requirements.

Vermont's health care reform team has been engaging in ongoing conversations with multiple federal agencies and offices to further our analysis of the coverage, tax, and subsidy implications of our waiver proposal and to strengthen our application. The cross-cutting policy issues intrinsic in Vermont's waiver proposals requires collaboration with the White House Executive Offices, the Department of Health and Human Services (HHS), which has regulatory authority over the consolidated waiver process, and about a dozen other offices and departments including Centers for Medicaid and Medicare Services (CMS), Center for Consumer Information and Insurance Oversight (CCIIO), Center for Medicaid and CHIP Services (CMCS), Center for Medicare and Medicaid Innovation (CMMI), CMS Office of the Actuary, the U.S. Department of Labor, U.S. Treasury, and the Office of Management and Budget.

Meetings with federal partners began in earnest in January of 2014. Vermont's Director of Health Care Reform, Deputy Director, and Special Counsel began regular teleconferences with CCIIO staff to discuss the waiver requirements and Vermont's proposals. Further analysis of the components of Vermont's proposals led to a meeting in April with Assistant Secretary Phyllis C. Borzi of the U.S. Department of Labor's Employee Benefits Security Administration (EBSA). In June Director Lunge traveled to Washington, D.C. to meet with the White House office of health reform policy director Jeanne Lambrew, who is Deputy Assistant to the President for Health Policy, and Christen Linke-Young, Senior Policy Advisor for Health. Director Lunge and Deputy Director Michael Costa also met with CMS staff in Bethesda in July.

The meetings in the first half of the year laid the groundwork for Governor Shumlin and his health policy advisors to travel to D.C. on September 24, 2014 to meet with HHS Secretary Sylvia Mathews Burwell, Assistant Secretary of the Treasury Mark Mazur, and the head of the health division for the Office of Budget and Management, Julian Harris. The objective of those meetings was to facilitate inter-agency collaboration from the top down and to establish the necessary lines of communication for Vermont to accomplish its goal of submitting a successful waiver application.

Following the Governor's meetings in September, Vermont's health care reform team organized a series of three interagency teleconferences/webinars. The teleconferences were held on October 24th, October 31st, and November 6th. Over 60 staffers from about a dozen offices, including the White House and the Vermont congressional delegation, were invited to participate in the calls. 20-30 people were on the line for each call. Vermont's health care reform team presented the information and our consultants from Wakely and UMass were on the line to provide back-up support.

During the October 24th teleconference Vermont presented an overview of Green Mountain Care for those who were new to Vermont's plan. We also presented proposed federal premium tax credit and cost-sharing reduction pass-through funding formulas. On October 31st Vermont

presented background information on the coverage and financing plan for Green Mountain Care including the approach to eligibility, benefit design, financing, operations, and delivery system reform. On November 6th Vermont walked through the assumptions the state was proposing to meet the remaining criteria for the ACA waiver. These include how we propose to show that we will cover at least as many people as under the ACA, with benefits that are at least as generous without increasing costs of coverage.

The federal staffers raised detailed questions during the multi-agency calls. The health care reform team engaged smaller groups from individual offices to drill down on issues within their areas of expertise. Multiple meetings were held with Treasury on tax implications for the financing plan. November 24th we held a call with Treasury, OMB, CMS and the Office of the Actuary to take a closer look at the issue of pass-through funding. November 25th we held a call with CMCS for a deeper dive on the interactions between Medicaid and Vermont's ACA waiver.

Governor Shumlin spoke with with HHS Secretary Burwell again on December 15, 2014.

In conclusion, we found that our partners in the federal agencies were excited about Vermont's plans and eager to help however they can. Staffers expressed enthusiasm for Vermont's strides toward obtaining the ACA waiver, which was included in the Affordable Care Act for the express purpose of allowing states to come up with innovative ways to cover more of their population and provide better benefits. Participating in Vermont's process toward applying for the waiver gave those federal agencies a first look at what may come to life under the ACA waiver provision.

The Table below provides a summary of meetings with the federal government.

Table E-2.1 Summary of Meetings with Vermont's Health Care Reform Team and Federal Partners

January 17, 2014	Initial teleconference with CCIIO staff responsible for the 1332 waiver process. Continued meeting most months through 2014.
April 7, 2014	Teleconference with Assistant Secretary Phyllis Borzi of U.S. DOL EBSA.
June 19, 2014	White House meeting with Deputy Director Jeanne Lambrew.
July 28-30, 2014	Director Lunge and Deputy Director Costa in D.C., met with CMS and the congressional delegation.
September 4, 2014	Teleconference with HHS staff to prep for Gov. Shumlin's meeting with Secretary Burwell.
September 24, 2014	Governor Shumlin in D.C. to meet with HHS Secretary Burwell, Treasury Assistant Secretary Mazur, and Julian Harris of OMB.

October 24, 2014	First interagency teleconference/webinar on Green Mountain Care and proposed federal PTC and CSR pass-through funding formulas.
October 31, 2014	Second interagency teleconference/webinar on background for the GMC coverage and financing plan.
October 27, 2014	Teleconference with Treasury.
November 6, 2014	Third interagency teleconference/webinar on the 1332 waiver criteria.
November 24, 2014	Teleconference on pass-through funding with OMB, Treasury, CMS, and OACT.
November 25, 2014	CMCS deep-dive on Vermont 1332 waiver and Medicaid interactions.
December 15, 2014	Conference call with Governor Shumlin and HHS Secretary Burwell.
Ongoing	Monthly calls with the Vermont congressional delegation.
Ongoing	Monthly calls with CCIIO on the 1332 waiver process.
Ongoing	Follow-up calls with all federal partners.

Appendix F-1: Medicaid

Federal Financial Participation in Medicaid

The federal government pays each state a certain share of its Medicaid program. The share that the federal government pays, called the Federal Matching Assistance Percentage (FMAP), is determined annually pursuant to a statutory formula based on each state's per capita income. In calendar year 2015, the base FMAP for Vermont is 56.18%.[1] Vermont's FMAP rate has declined annually since 2009, and we estimate that it will continue to do so in future years. Likewise, the federal government pays a share of the Children's Health Insurance Program (CHIP). This amount is higher than the FMAP rate used for the Medicaid population, and is called the Enhanced FMAP rate. In calendar year 2015, the enhanced FMAP rate for Vermont's CHIP program is 74.95%.[2]

Furthermore, the ACA significantly expanded Medicaid, making individuals with income up to 138% of the federal poverty level (FPL) eligible for Medicaid. For most states, this will be a substantial expansion in their Medicaid population. In calendar year 2015, the enhanced FMAP rate for Vermont's "expansion population" is 82.47%. The federal government will pay a higher FMAP for this expansion population, leveling off at 90% in 2019.

Vermont, under its 1115 Demonstration Waiver, had previously expanded its Medicaid eligibility to income levels greater than the ACA. For states like Vermont that had previously expanded Medicaid eligibility, the federal government will phase-in a higher FMAP rate for some populations in their state.

The FMAPs used in this analysis are contained in Appendix C-2 with the other microsimulation analysis assumptions. Note that the base and enhanced FMAP rates are subject to change annually. For the purposes of this analysis, we used the 2015 rates as a starting point and then used the economic model to estimate future FMAP rates.

Impacts on Existing Medicaid Funding Sources

Lost or reduced state Medicaid revenue add dollars to the required public financing. Lost Medicaid dollars would be replaced by fungible dollars within the Green Mountain Care Fund for the purposes of drawing down federal Medicaid match, as we would propose that the Green Mountain Care Fund absorb the State Health Care Resources Fund. The 2013 report estimated that the State would be able to apply $637 million in existing State Medicaid revenue to GMC in 2017. We estimate the actual number to be $341 million, a figure that increases the total amount to be publicly financed in 2017 by $296 million.

[1] See JFO website: www.leg.state.vt.us/jfo/healthcare/
[2] *Ibid.*

The reduction in Medicaid revenue from the original projection is due to two factors. First, the State has not increased Medicaid rates annually as assumed in the 2013 report due to economic headwinds and budget pressures. Second, some revenue sources used to support Medicaid today would not be viable under GMC. Specifically, GMC would feature repeal of provider taxes, the Claims Tax, and Employer Assessment once the State implemented GMC. Medicaid premiums would no longer be charged. Also, tobacco settlement funds are set to decline prior to 2017.

Table F-1.1 sets forth current state revenue streams that support Medicaid in FY 15 post rescission and estimate the availability of these revenue sources for Green Mountain Care for 2017 through 2021. Table F-1.2 sets forth the current state revenues that support the State Health Care Resources Fund in FY 15 post rescission and estimate the availability of these revenue sources for Green Mountain Care from 2017 through 2021.

Medicaid revenue estimates are typically done on a state fiscal year (SFY) basis. They are set forth by SFY here to ensure continuity with existing estimates. GMC would operate on a calendar year basis. Accordingly, state Medicaid revenue estimates would need to be converted to a calendar year basis once an implementation year is determined.

Table F-1.1: State Medicaid Funding Sources FY 2015 as Passed through 2021 under GMC[3]

State Medicaid Funding	FY 15 Post Rescission	FY 16	FY 17	FY 18	FY 19	FY 20	FY 21
General Fund	185,233,145	190,790,139	196,513,844	202,409,259	208,481,537	214,735,983	221,178,062
Tobacco Funds	33,031,032	28,547,443	27,310,469	16,310,469	16,310,469	16,310,469	16,310,469
State Health Care Resources Fund	268,592,899	268,984,365	96,173,000	99,173,000	101,173,000	103,173,000	105,173,000
IDT	40,000	40,000	40,000	40,000	40,000	40,000	40,000
Insurance Fund	883,847	883,847	883,847	883,847	883,847	883,847	883,847
HIT	2,080,754	3,000,000	0	0	0	0	0
Agriculture Mosquito Control	56,272	56,272	56,272	56,272	56,272	56,272	56,272
Success Beyond Six	21,037,211	21,743,125	22,300,000	22,300,000	22,300,000	22,300,000	22,300,000
Next Generation	300,000	300,000	300,000	300,000	300,000	300,000	300,000
Exchange Funding	-5,340,670	-8,400,000	0	0	0	0	0
Carry Forward	50,000	0	0	0	0	0	0
Fund Balance used	4,074,531	0	0	0	0	0	0
TOTAL STATE MEDICAID REVENUE	510,039,021	505,945,191	343,577,432	341,472,847	349,545,125	357,799,571	366,241,650

Source: Vermont Dept. of Finance and Management Prior to Completion of the FY 2016 Budget Recommendation

Assumptions and Notes

We assume three percent annual growth in General Fund support for Medicaid. Tobacco settlement funds are projected to decrease $11 million in SFY 18. State Health Care Resource Fund revenue would be diminished substantially due to repeal of provider taxes,

[3] This table includes revenue sources for Managed Care Entity Investments, as well as Medicaid coverage.

claims taxes, and various premiums. The Medicaid allocable cost of the Exchange is included in the general GMC Medicaid cost estimates. The non-Medicaid allocable Exchange cost is included in the non-payer operations cost estimate.

Table F-1.2: State Health Care Resources Fund FY 15 as Passed through 2021 under GMC

State Health Care Resources Fund	FY 15	FY 16	FY 17	FY 18	FY 19	FY 20	FY 21
Cig Tax[4]	64,900,000	61,900,000	76,000,000	79,000,000	81,000,000	83,000,000	85,000,000
Tobacco Products	7,700,000	6,800,000	6,800,000	6,800,000	6,800,000	6,800,000	6,800,000
Claims Assessment	14,000,000	14,280,000	0	0	0	0	0
Employer Assessment	15,738,631	16,800,000	0	0	0	0	0
GME	12,873,000	12,873,000	12,873,000	12,873,000	12,873,000	12,873,000	12,873,000
Provider Tax – Hospitals	127,639,915	131,150,013	0	0	0	0	0
Provider Tax NH	15,801,530	15,801,530	0	0	0	0	0
Provider Tax Home Health	4,233,302	4,233,302	0	0	0	0	0
Provider Tax ICF-MR	73,759	73,759	0	0	0	0	0
Pharmacy $0.10 Script	800,000	800,000	0	0	0	0	0
Premium Dr. D	50,607	50,607	0	0	0	0	0
Premiums SCHIP	623,382	623,382	0	0	0	0	0
Premiums Rx Programs	3,045,450	3,045,450	0	0	0	0	0
Recoveries	500,000	500,000	500,000	500,000	500,000	500,000	500,000
Other	13,323	53,323	0	0	0	0	0
TOTAL SHCRF REVENUE	267,992,899	268,984,365	96,173,000	99,173,000	101,173,000	103,173,000	105,173,000

[4] Further analysis of the cigarette tax estimate is needed given the large variance between the current law and GMC estimates.

Assumptions and Notes

Several SHCRF revenue streams would be repealed or substantially reduced after GMC implementation: The claims assessment would be repealed. The employer assessment would be repealed as all Vermont residents would have insurance. Current Medicaid premiums would be repealed. Provider Taxes would be repealed. Estimated cigarette tax revenue would increase due to increased wage growth and consumer spending change. GME would likely change as FMAP changes; however, any additional dollars needed to draw down federal match would likely be paid by the University of Vermont.

Appendix F-2: Detailed Information on Financing

This appendix provides additional information on issues related to the development of financing concepts and the results of the economic modeling. First, the appendix provides some additional perspective on the difficult task of transitioning businesses into GMC. Second, the appendix provides additional data on the wage effects of GMC. Third, the appendix provides additional data on changes in federal and state tax liability and collections due to GMC.

Payroll Tax Phase-In

Governor Shumlin asked for a plan that would provide a transition for small employers. Accordingly, we focused on providing a way for businesses with less than $1M in total payroll to transition into the plan over 3 years. We considered several approaches to phase in Vermont businesses, thereby providing transition relief to small businesses. The first approach was a three year phase in with a non-refundable credit.

Step Up Approach

A temporary non-refundable tax credit could be granted for the first three years of the tax, allowing businesses with smaller payrolls, those least likely to pay for insurance now, to phase into the system. The credit would work in the following way, using 8% as an example payroll tax rate.

- All businesses would determine their payroll tax liability at 8% of qualifying payroll.
- Businesses could apply the annual credit to their tax liability.
- The credit amount would be $40,000 in year 1, $25,000 in year 2, and $12,000 in year 3.
- The credit would be phased out on a dollar for dollar basis for every dollar of tax incurred beyond the credit limit.
- The credit would be reduced annually until all businesses are phased into the full 8% tax in year four, 2020.

The result of the credit system would be that in each year of the phase-in the smallest employers are excluded from the tax, others pay a reduced rate, and the largest businesses by payroll pay the full tax. The credits phase out so that the largest employers do not receive the credit and unnecessarily drive up the needed payroll tax rate. The specific payroll thresholds for each category of business (excluded from the tax, reduced tax, and pay full tax) are set forth in Table F-2.1.

Table F-2.1: Payroll Thresholds for Utilization of Phase-In Credit

Tax Year	2017	2018	2019	2020
Excluded from Tax Due to Credit	Qualifying Payroll < $500,000	Qualifying Payroll < $312,500	Qualifying Payroll < $150,000	Businesses Pay Full Tax
Reduced Tax Due to Credit	Qualifying Payroll between $500,000 and $1,000,000	Qualifying Payroll between $312,500 and $625,000	Qualifying Payroll between $150,000 and $300,000	
Pay Full Tax	Qualifying Payroll > $1,000,000	Qualifying Payroll > $625,000	Qualifying Payroll > $300,000	

Examples of credit utilization are set forth below in the Tables using examples with $1 million, $575,000, and $150,000 of qualifying payroll.

Table F-2.2: 8% Payroll Tax with Phase-In for Business with $1,000,000 in Qualifying Vermont Payroll

Tax Year	2017	2018	2019	2020
Qualifying Vermont Payroll	$1,000,000	$1,000,000	$1,000,000	$1,000,000
GMC Payroll Tax Liability @ 8%	$80,000	$80,000	$80,000	$80,000
Credit Value	$40,000	$25,000	$12,000	$0
Credit Phase Out	$40,000	$25,000	$12,000	N/A
Value of Credit	$0	$0	$0	N/A
Tax Due	$80,000	$80,000	$80,000	$80,000

In this scenario, the business would be ineligible for the credit and would pay the full tax liability in year 1.

Table F-2.3: 8% Payroll Tax with Phase-In for Business with $575,000 in Qualifying Vermont Payroll

Tax Year	2017	2018	2019	2020
Qualifying Vermont Payroll	$575,000	$575,000	$575,000	$575,000
GMC Payroll Tax Liability @ 8%	$46,000	$46,000	$46,000	$46,000
Annual Credit Value	$40,000	$25,000	$12,000	$0
Credit Phase Out	$6,000	$21,000	$12,000	N/A
Value of Credit	$34,000	$4,000	$0	N/A
Tax Due	$12,000	$42,000	$46,000	$46,000

In this scenario, the business would be eligible for a tax reduction via the credit in the first two years of the tax and would pay the full tax in year 3 and thereafter.

Table F-2.4: 8% Payroll Tax with Phase-In for Business with $150,000 in Vermont Payroll

Tax Year	2017	2018	2019	2020
Qualifying Vermont Payroll	$150,000	$150,000	$150,000	$150,000
GMC Payroll Tax Liability @ 8%	$12,000	$12,000	$12,000	$12,000
Annual Credit Value	$40,000	$25,000	$12,000	$0
Credit Phase Out	$0	$0	$0	N/A
Value of Credit	$12,000	$12,000	$12,000	N/A
Tax Due	$0	$0	$0	$12,000

In this scenario, the business would be able to use the full value of the credit annually. They would be excluded from the tax during the phase-in and would pay the full tax in year 4 and thereafter.

The economic modeling revealed that these credits were expensive, creating a funding problem for the payroll tax and Green Mountain Care. This is due to the large number of small businesses in Vermont. Table F-2.5 sets forth the cost of the payroll tax phase in compared to the revenue generation potential of the payroll tax levied at eight percent.

Table F-2.5: 8% Payroll Tax with Phase-In Credit Value in Millions

Tax Year	2017	2018	2019	2020	2021
Revenue Potential at 8%	1,051	1,073	1,095	1,117	1,140
Credit Value	525	496	441	0	0
Tax Collected	526	577	654	1,117	1,140

A major issue with the credit described above is that it would bring large employers down in their spending while not bringing smaller employers up in spending. Fixing the credit would be expensive, requiring a high transitional payroll tax rate or an additional major revenue source. We constructed an option that could potentially have addressed this issue of losing revenue from employers that pay more today than the target rate while transitioning smaller businesses or those that pay an amount lower than the target GMC payroll tax. This was the step up/step down phase in.

<u>Step Up/Step Down Phase In</u>

The step up/step down would try to transition each business from where they are currently to the target payroll tax rate. It would require four steps.

- Select a base measurement year.
- Determine the current amount the firm spends on health care.
- The firm determines whether they pay more or less than the new tax at the target rate.
- Each firm moves 20% toward the goal each year.

Table F-2.6 illustrates how the phase-in works.

Table F-2.6: Notional Example of Step Up/Step Down Payroll Tax Phase-In

Company A		Company B	
2016 Health Care Spending	$100,000	2016 Health Care Spending	$0
Target GMC Tax at 8% Payroll	$50,000	Target GMC Tax at 8% Payroll	$50,000
Firm A Pays (Step Down)		Firm B Pays (Step Up)	
2017	$90,000	2017	$10,000
2018	$80,000	2018	$20,000
2019	$70,000	2019	$30,000
2020	$60,000	2020	$40,000
2021 (Target Tax)	$50,000	2021 (Target Tax)	$50,000

This solution to the phase-in issue prompted several concerns. First, it would create a complicated set of firm specific tax rates. Also, it would create uncertainty about what behavior firms may engage in during the base measurement year. The finance plan would need substantial modification if many firms dropped or reduced health care coverage prior to the base measurement year to enjoy preferential tax treatment during the first five years. This could be remedied by selecting a base year in the past; however, we rejected this idea as arbitrary and not reflecting a business's current cash position. Also, this concept prompted some concern over legal risk.

Ramp Up

Another alternative was to ramp employers up to the target payroll tax rate over time prior to implementation of GMC. The major concern with this approach was that businesses would be paying prior to receiving benefits, and they would be paying twice if they continued to offer insurance.

Large Employer Credit

We designed a credit for large employers to use in Green Mountain Care if the legislature so chose to exempt large businesses. The credit would work in the following way.

- All businesses would be assessed GMC payroll tax
- Large employers over a certain number of employees would be eligible for a credit against payroll tax.
- A dollar for dollar credit would be granted for all health spending, including, but not limited to, employer sponsored insurance.
- The credit would be taken against the Green Mountain Care payroll tax.

Our legal analysis determined that such a credit likely would pass legal muster.

Overall, the credit proved too costly to be deployed within a sustainable finance plan. The credit would have cost $394 million if applied to all firms with more than 1,000 employees at a payroll tax of 11.5%, more than 25% of the payroll tax base. The credit would cost $468 million if applied to all firms with more than 500 employees at a payroll tax rate of 11.5%, more than 30% of the payroll base. Here, the proportion of the base is more important than the dollar amount. We drew the tentative conclusion that it does not seem possible to construct a publicly financed system that excludes Vermont's largest employers.

Tiered Brackets

We considered and rejected tiered payroll tax brackets due to three main concerns. First, a tiered structure would likely require high and seemingly uncompetitive payroll tax rates. Second, a tiered system would not create a level playing field for Vermont's businesses. Third, we wanted to ensure tax neutrality, meaning that we did not want a tax system that created an incentive to avoid adding the next dollar of payroll.

Wage Effects of GMC

Each firm would determine whether they pay more or less under GMC than the status quo given a firm's current level of health care spending and their prospective payroll tax due. The economic model made certain assumptions about firm behavior regarding employee wages depending on whether the firm would pay more or less under GMC and whether the firm chose to purchase supplemental GMC coverage or continue to offer its own coverage. (See Appendix C.) Generally, the model measured three types of firm behavior in regards to wages.

- Firms that would pay less under GMC shift some of the savings to workers in the form of higher wages.
- Firms that would pay more under GMC would likely shift this cost onto workers except that they generally cannot due to nominal and minimum wage restrictions. This amount would be the "remaining unshifted" amount.
- Given our assumptions about wage stickiness, some firms would retain dollars that they would otherwise shift to wages. These would be called "wages withheld."

Figure F-2.7 breaks down wage shifting in each of the above categories by employer type. How firms would act with dollars in the unshifted and shifting withheld categories would be a major focus of any future macroeconomic analysis.

Table F-2.7: GMC Wage Effects, 2017 – 2021. (Value in Millions)

	2017	2018	2019	2020	2021
Private Business					
Payroll Tax	1,163	1,186	1,216	1,236	1,257
Total Amount Shifted to Wages	78	68	129	67	22
Total Remaining Unshifted	518	367	249	163	102
Total Shifting Withheld	189	103	-	-	-
State					
State Employee Spending	111	114	117	121	124
Payroll Tax	111	114	117	121	124
Total Amount Shifted to Wages	44	43	60	68	80
Total Remaining Unshifted	30	23	15	8	3
Total Shifting Withheld	57	43	22	12	-
Local Government					
Payroll Tax	62	63	64	66	67
Total Amount Shifted to Wages	9	6	9	10	12
Total Remaining Unshifted	22	16	11	7	4
Total Shifting Withheld	18	14	8	4	-
Schools					
Payroll Tax	145	149	153	158	162
Total Amount Shifted to Wages	43	43	60	69	83
Total Remaining Unshifted	45	32	21	11	5
Total Shifting Withheld	62	50	26	14	-

GMC Tax Effects

Green Mountain Care would change the total tax collected by the State and Federal government. We estimate that State revenues would improve modestly due to increased wages and a resulting increase in consumption. We estimate that the federal government would collect less in tax revenue as a result of GMC, due primarily to the use if Schedule A to deduct the public premium.

State Tax Effects

We estimate state tax collections would increase $34 million in 2017, increasing annually thereafter, and grow to $99 million over the status quo by 2021. The increase would be driven mostly by property tax collections. Income tax collections would be down. We believe that this estimate is due to increased utilization of the EITC and some additional utilization of itemized deductions, as Vermont allows taxpayers to deduct up to $5,000 of state taxes paid for income tax purposes.

Table F-2.8: GMC State Tax Effects, 2017 – 2021 (Value in Millions)

Tax Type	2017	2018	2019	2020	2021
State Income Taxes	-2	-7	-4	-7	-8
Property Tax	22	33	48	58	67
Sales Tax	6	10	15	18	19
Meals/Alcohol/Hotel Tax	2	2	3	3	4
Gas Tax	1	2	3	3	3
Cars Tax	3	5	7	8	9
Cigarette Tax	1	3	3	4	4
Corporate Tax	0	0	0	0	0
Other Tax	1	1	1	1	1
TOTAL	**34**	**49**	**76**	**88**	**99**

Federal Tax Effects

We estimate that Vermont residents would pay less in federal taxes under GMC. The main driver of this estimate is the ability to deduct the public premium from federal income taxes on Schedule A. The table below compares the change in federal tax liability between federal income taxes and federal payroll taxes (FICA and Medicare Taxes) under GMC.

Table F-2.9: GMC Federal Tax Effects, 2017 – 2021 (Value in Millions)

	2017	2018	2019	2020	2021
Federal Income Taxes	-191	-222	-223	-236	-242
Payroll Taxes	56	57	75	70	70

It is important to note that some Vermonters would pay more in federal income tax due to higher wages; however, the Schedule A impact offsets in the aggregate the taxes owed due to wage gains. Increased payroll taxes would be due solely to wage gains. GMC would change the value of other federal tax calculations. For more information see the modeling output, which can be viewed online at http://hcr.vermont.gov/library.

Appendix F-3: Alternative Financing Concepts and Balance Sheets

We considered and tested myriad finance concepts during the project. Some concepts were tested using State of Vermont data prior to the microsimulation modeling project. We tested other concepts during the development of microsimulation model but prior to its completion. We ran a variety of concepts through the completed microsimulation model, defining completion as a point at which we had a high degree of confidence that the model was forecasting health care coverage costs correctly. This appendix describes alternative financing concepts that were run through the microsimulation model after its completion.

Population Scenarios

Ultimately, we tested finance concepts against two distinct population scenarios. The first is described in the body of the report. The alternative makes the following changes to the underlying assumptions.

Alternative Population Scenario

The alternative scenario changes the population assumptions in the following ways:

- GMC would not cover non residents working for Vermont firms.
- GMC would not cover federal employees.
- GMC would not provide wrap coverage for employer sponsored insurance.

This reduces the population receiving GMC and the cost. Also, it more closely matches the assumptions of the 2013 report, being the same population except for wrap coverage of employer sponsored insurance. Multiple finance concepts were tested against both population scenarios.

Key Notes

Each alternative concept contains a description of the coverage assumptions. The two key pieces of coverage information are the actuarial value of the plan and the population covered. The concepts include three separate AV levels (80, 87, and 94) and two separate population concepts. Also, the 80AV concepts include concepts with the recommended focused deductible plan designed described in the coverage chapter and appendices and a standard deductible design.

Each alternative concept contains a description of finance assumptions. These include a payroll tax and Public Premium set at varying levels. Alternative financing concepts 1-7 mirror the standard report assumptions, including commuters and federal employees in the coverage and taxes. Also, these concepts assume repeal of provider taxes. Alternative financing concepts 8 - 14 contain different population assumptions, excluding commuters and federal employees from the coverage and tax. Also, these scenarios assume that Vermont retains provider taxes.

Alternative Finance Concept 1

- Coverage Assumptions
  - 94 AV Plan
  - Population assumptions consistent with main body of report, including:
    - Vermont residents
    - Commuters
    - Federal employees
    - Wrap of employer sponsored insurance
    - Population excludes TRICARE and Non-Medicare retirees, excluding state and teacher retirees
- Finance Assumptions
  - Phased-In Payroll Tax with credit designed to transition businesses with up to $1 million in qualifying payroll.
  - The credit is phased out on a dollar for dollar basis for every dollar of tax incurred beyond the credit limit.
  - Payroll Tax is 21% in year 1 and 20% in years 2 and 3.
  - The credit is reduced annually until all businesses are phased into the full 12.5% tax in year four.
  - The credit amount is $105,000 in year 1, $50,000 in year 2, and $25,000 in year 3.
  - Sliding scale Public Premium from 0% - 9.5% up to 400% FPL.
  - Requires all Vermonters at or above 400% FPL to pay 9.5% of income, capped at $27,500.
  - Repeals Provider Taxes

Alternative Financing Concept 1 Continued

	2017	2018	2019	2020	2021
Spending (All Values in Millions)					
GMC Coverage and Operations	-4,340	-4,579	-4,820	-5,001	-5,177
Current Law Revenue Estimates					
Federal Medicaid Match	1,310	1,364	1,413	1,445	1,505
Federal ACA Waiver Funding	106	118	122	125	132
State Medicaid Dollars	344	341	350	358	366
New Revenue Needed	**-2,580**	**-2,756**	**-2,935**	**-3,073**	**-3,174**
Payroll Tax Starting at 21% and Phasing in to 12.5%	1,511	1,631	1,754	1,746	1,781
Public Premium up to 9.5% at 400% FPL Capped at $27,500	1,247	1,306	1,359	1,373	1,382
GMC Fund Fiscal Position	**178**	**181**	**178**	**46**	**-11**

Alternative Finance Concept 2

- Coverage Assumptions
  - 94 AV Plan
  - Population assumptions consistent with main body of report, including:
    - Vermont residents
    - Commuters
    - Federal employees
    - Wrap of employer sponsored insurance
    - Population excludes TRICARE and Non-Medicare retirees, excluding state and teacher retirees
- Finance Assumptions
  - Phased-In Payroll Tax with credit designed to transition businesses with up to $1 million in qualifying payroll.
  - The credit is phased out on a dollar for dollar basis for every dollar of tax incurred beyond the credit limit.
  - Payroll Tax is 8% annually.
  - The credit is reduced annually until all businesses are phased into the full 8% tax in year four.
  - The credit amount is $40,000 in year 1, $25,000 in year 2, and $12,000 in year 3.
  - Sliding scale Public Premium from 0% - 8.0% up to 624% FPL.
  - Requires all Vermonters over 624% FPL to pay 9.5% of income, capped at $27,500.
  - Repeals Provider Taxes

Alternative Financing Concept 2 Continued

	2017	2018	2019	2020	2021
Spending (All Values in Millions)					
GMC Coverage and Operations	-4,340	-4,579	-4,820	-5,001	-5,177
Current Law Revenue Estimates					
Federal Medicaid Match	1,310	1,364	1,413	1,445	1,505
Federal ACA Waiver Funding	106	118	122	125	132
State Medicaid Dollars	344	341	350	358	366
New Revenue Needed	**-2,580**	**-2,756**	**-2,935**	**-3,073**	**-3,174**
Payroll Tax of 8% with Three Year Phase In	526	577	654	1,117	1,140
Public Premium up to 8% at 624% FPL Capped at $27,500	949	995	1,037	1,047	1,055
GMC Fund Fiscal Position	**-1,105**	**-1,184**	**-1,244**	**-909**	**-979**

Alternative Finance Concept 3

- Coverage Assumptions
  - 94 AV Plan
  - Population assumptions consistent with main body of report, including:
    - Vermont residents
    - Commuters
    - Federal employees
    - Wrap of employer sponsored insurance
    - Population excludes TRICARE and Non-Medicare retirees, excluding state and teacher retirees
- Finance Assumptions
  - 12% payroll tax on all Vermont businesses on their qualifying Vermont payroll, no exceptions and no transitions.
  - Sliding scale Public Premium from 0% - 9% up to 400% FPL.
  - Requires all Vermonters at or above 400% FPL to pay 9% of income, capped at $27,500.
  - Repeals Provider Taxes

Alternative Financing Concept 3 Continued

	2017	2018	2019	2020	2021
Spending (All Values in Millions)					
GMC Coverage and Operations	-4,340	-4,579	-4,820	-5,001	-5,177
Current Law Revenue Estimates					
Federal Medicaid Match	1,310	1,364	1,413	1,445	1,505
Federal ACA Waiver Funding	106	118	122	125	132
State Medicaid Dollars	344	341	350	358	366
New Revenue Needed	**-2,580**	**-2,756**	**-2,935**	**-3,073**	**-3,174**
Payroll Tax of 12%	1,576	1,609	1,642	1,676	1,710
Public Premium up to 9% above 400% FPL capped at $27,500	1,191	1,247	1,298	1,311	1,320
GMC Fund Fiscal Position	**187**	**100**	**5**	**-86**	**-144**

Alternative Finance Concept 4

- Coverage Assumptions
  - 80 AV Plan
  - Population assumptions consistent with main body of report, including:
    - Vermont residents
    - Commuters
    - Federal employees
    - Wrap of employer sponsored insurance
    - Population excludes TRICARE and Non-Medicare retirees, excluding state and teacher retirees
- Finance Assumptions
  - Phased-In Payroll Tax with credit designed to transition businesses with up to $1 million in qualifying payroll.
  - The credit is phased out on a dollar for dollar basis for every dollar of tax incurred beyond the credit limit.
  - Payroll Tax is 13% in years one through three and 9.5% in years four and five.
  - The credit is reduced annually until all businesses are phased into the full 9.5% tax in year four.
  - The credit amount is $65,000 in year 1, $32,500 in year 2, and $16,250 in year 3.
  - Sliding scale Public Premium from 0% - 9.5% up to 400% FPL.
  - Requires all Vermonters at or above 400% FPL to pay 9.5% of income, capped at $27,500.
  - Repeals Provider Taxes

Alternative Finance Concept 4 Continued

	2017	2018	2019	2020	2021
Spending (All Values in Millions)					
GMC Coverage and Operations	-3,751	-4,000	-4,291	-4,452	-4,613
Current Law Revenue Estimates					
Federal Medicaid Match	1,294	1,344	1,400	1,432	1,491
Federal ACA Waiver Funding	106	118	122	125	132
State Medicaid Dollars	344	341	350	358	366
New Revenue Needed	**-2,007**	**-2,197**	**-2,419**	**-2,537**	**-2,624**
Payroll Tax Starting at 13% and Phasing in to 9.5%	886	983	1,102	1,327	1,354
Public Premium up to 9.5% above 400% FPL capped at $27,500	1,153	1,237	1,340	1,354	1,365
GMC Fund Fiscal Position	**32**	**23**	**23**	**144**	**95**

Alternative Finance Concept 5

- Coverage Assumptions
  - 80 AV Plan
  - Population assumptions consistent with main body of report, including:
    - Vermont residents
    - Commuters
    - Federal employees
    - Wrap of employer sponsored insurance
    - Population excludes TRICARE and Non-Medicare retirees, excluding state and teacher retirees
- Finance Assumptions
  - 9.5% payroll tax on all Vermont businesses on their qualifying Vermont payroll, no exceptions and no transitions.
  - Sliding scale Public Premium from 0% - 8.0% up to 400% FPL.
  - Requires all Vermonters at or above 400% FPL to pay 8.0% of income, capped at $27,500.
  - Repeals Provider Taxes

Alternative Finance Concept 5 Continued

	2017	2018	2019	2020	2021
Spending (All Values in Millions)					
GMC Coverage and Operations	-3,751	-4,000	-4,291	-4,452	-4,613
Current Law Revenue Estimates					
Federal Medicaid Match	1,294	1,344	1,400	1,432	1,491
Federal ACA Waiver Funding	106	118	122	125	132
State Medicaid Dollars	344	341	350	358	366
New Revenue Needed	**-2,007**	**-2,197**	**-2,419**	**-2,537**	**-2,624**
Payroll Tax at 9.5%	1,248	1,274	1,300	1,327	1,354
Public Premium up to 8.0% above 400% FPL capped at $27,500	994	1,068	1,158	1,170	1,181
GMC Fund Fiscal Position	**235**	**145**	**39**	**-40**	**-89**

Alternative Finance Concept 6

- Coverage Assumptions
  - 80 AV Plan
  - Population assumptions consistent with main body of report, including:
    - Vermont residents
    - Commuters
    - Federal employees
    - Wrap of employer sponsored insurance
    - Population excludes TRICARE and Non-Medicare retirees, excluding state and teacher retirees
- Finance Assumptions
  - 11.5% payroll tax on all Vermont businesses on their qualifying Vermont payroll, no exceptions and no transitions.
  - Sliding scale Public Premium from 0% - 9.5% up to 400% FPL.
  - Requires all Vermonters at or above 400% FPL to pay 9.5% of income, capped at $27,500.
  - Repeals Provider Taxes

Alternative Finance Concept 6 Continued

	2017	2018	2019	2020	2021
Spending (All Values in Millions)					
GMC Coverage and Operations	-3,751	-4,000	-4,291	-4,452	-4,613
Current Law Revenue Estimates					
Federal Medicaid Match	1,294	1,344	1,400	1,432	1,491
Federal ACA Waiver Funding	106	118	122	125	132
State Medicaid Dollars	344	341	350	358	366
New Revenue Needed	**-2,007**	**-2,197**	**-2,419**	**-2,537**	**-2,624**
Payroll Tax at 9.5%	1,510	1,542	1,574	1,606	1,639
Public Premium up to 9.5% above 400% FPL capped at $27,500	1,153	1,237	1,340	1,354	1,365
GMC Fund Fiscal Position	**656**	**582**	**495**	**423**	**380**

Alternative Finance Concept 7

- Coverage Assumptions
    - 80 AV Plan with standard deductible plan design
    - Population assumptions consistent with main body of report, including:
        - Vermont residents
        - Commuters
        - Federal employees
        - Wrap of employer sponsored insurance
        - Population excludes TRICARE and Non-Medicare retirees, excluding state and teacher retirees
- Finance Assumptions
    - 9.5% payroll tax on all Vermont businesses on their qualifying Vermont payroll, no exceptions and no transitions.
    - Sliding scale Public Premium from 0% - 8.0% up to 400% FPL.
    - Requires all Vermonters at or above 400% FPL to pay 8.0% of income, capped at $27,500.
    - Repeals Provider Taxes

Alternative Finance Concept 7 Continued

	2017	2018	2019	2020	2021
Spending (All Values in Millions)					
GMC Coverage and Operations	-3,773	-4,027	-4,320	-4,482	-4,643
Current Law Revenue Estimates					
Federal Medicaid Match	1,293	1,344	1,400	1,432	1,491
Federal ACA Waiver Funding	106	118	122	125	132
State Medicaid Dollars	344	341	350	358	366
New Revenue Needed	**-2,030**	**-2,224**	**-2,448**	**-2,567**	**-2,654**
Payroll Tax at 9.5%	1,248	1,274	1,300	1,327	1,354
Public Premium up to 9.5% above 400% FPL capped at $27,500	992	1,067	1,158	1,170	1,181
GMC Fund Fiscal Position	**210**	**117**	**10**	**-70**	**-119**

Alternative Finance Concept 8

- Coverage Assumptions
  - 94 AV Plan
  - Alternative coverage population
    - No commuters
    - No federal employees
    - No wrap of employer sponsored insurance
- Finance Assumptions
  - 8.0 % payroll tax on all Vermont businesses on their qualifying Vermont payroll, no exceptions and no transitions.
  - Sliding scale Public Premium from 0% - 8% of income, depending on income and family size. Sliding scale covers 90% of Vermont households.
  - Requires all Vermonters at or above 624% FPL to pay 8.0% of income, capped at $27,500.
  - Retains Provider Taxes

Alternative Finance Concept 8 Continued

	2017	2018	2019	2020	2021
Spending (All Values in Millions)					
GMC Coverage and Operations	-3,792	-4,008	-4,225	-4,381	-4,543
Current Law Revenue Estimates					
Federal Medicaid Match	1,291	1,344	1,392	1,424	1,483
Federal ACA Waiver Funding	106	118	122	125	132
State Medicaid Dollars	502	509	529	549	570
New Revenue Needed	**-1,893**	**-2,037**	**-2,182**	**-2,283**	**-2,358**
Payroll Tax of 8%	1,051	1,073	1,095	1,117	1,140
Public Premium up to 8% at 624% FPL Capped at $27,500	803	847	885	896	906
GMC Fund Fiscal Position	**-39**	**-117**	**-202**	**-270**	**-312**

Alternative Finance Concept 9

- Coverage Assumptions
  - 94 AV Plan
  - Alternative coverage population
    - No commuters
    - No federal employees
    - No wrap of employer sponsored insurance
- Finance Assumptions
  - 9.5 % payroll tax on all Vermont businesses on their qualifying Vermont payroll, no exceptions and no transitions.
  - Sliding scale Public Premium from 0% - 8% of income, depending on income and family size.
  - Requires all Vermonters at or above 400% FPL to pay 8.0% of income, capped at $27,500.
  - Retains Provider Taxes

Alternative Finance Concept 9 Continued

	2017	2018	2019	2020	2021
Spending (All Values in Millions)					
GMC Coverage and Operations	-3,792	-4,008	-4,225	-4,381	-4,543
Current Law Revenue Estimates					
Federal Medicaid Match	1,291	1,344	1,392	1,424	1,483
Federal ACA Waiver Funding	106	118	122	125	132
State Medicaid Dollars	502	509	529	549	570
New Revenue Needed	**-1,893**	**-2,037**	**-2,182**	**-2,283**	**-2,358**
Payroll Tax of 9.5%	1,248	1,274	1,300	1,327	1,354
Public Premium up to 8% at 400% FPL Capped at $27,500	911	960	1,002	1,015	1,026
GMC Fund Fiscal Position	**266**	**197**	**120**	**59**	**22**

Alternative Finance Concept 10

- Coverage Assumptions
  - 94 AV Plan
  - Alternative coverage population
    - No commuters
    - No federal employees
    - No wrap of employer sponsored insurance
- Finance Assumptions
  - 9.5 % payroll tax on all Vermont businesses on their qualifying Vermont payroll, no exceptions and no transitions.
  - Sliding scale Public Premium from 0% - 8% of income, depending on income and family size.
  - Requires all Vermonters at or above 500% FPL to pay 8.0% of income, capped at $27,500.
  - Retains Provider Taxes

Alternative Finance Concept 10 Continued

	2017	2018	2019	2020	2021
Spending (All Values in Millions)					
GMC Coverage and Operations	-3,792	-4,008	-4,225	-4,381	-4,543
Current Law Revenue Estimates					
Federal Medicaid Match	1,291	1,344	1,392	1,424	1,483
Federal ACA Waiver Funding	106	118	122	125	132
State Medicaid Dollars	502	509	529	549	570
New Revenue Needed	**-1,893**	**-2,037**	**-2,182**	**-2,284**	**-2,359**
Payroll Tax of 9.5%	1,248	1,274	1,300	1,327	1,354
Public Premium up to 8% at 500% FPL Capped at $27,500	861	908	947	960	971
GMC Fund Fiscal Position	**216**	**145**	**65**	**3**	**-11**

Alternative Finance Concept 11

- Coverage Assumptions
  - 94 AV Plan
  - Alternative coverage population
    - No commuters
    - No federal employees
    - No wrap of employer sponsored insurance
- Finance Assumptions
  - 8.95 % payroll tax on all Vermont businesses on their qualifying Vermont payroll, no exceptions and no transitions.
  - Sliding scale Public Premium from 0% - 8% of income, depending on income and family size.
  - Requires all Vermonters at or above 624% FPL to pay 8.0% of income capped at $27,500. Sliding scale covers 90% of Vermont households.
  - Retains Provider Taxes

Alternative Finance Concept 11 Continued

	2017	2018	2019	2020	2021
Spending (All Values in Millions)					
GMC Coverage and Operations	-3,792	-4,008	-4,225	-4,381	-4,543
Current Law Revenue Estimates					
Federal Medicaid Match	1,291	1,344	1,392	1,424	1,483
Federal ACA Waiver Funding	106	118	122	125	132
State Medicaid Dollars	502	509	529	549	570
New Revenue Needed	**-1,893**	**-2,037**	**-2,182**	**-2,284**	**-2,359**
Payroll Tax of 8.95%	1,175	1,200	1,225	1,250	1,275
Public Premium up to 8% at 624% FPL Capped at $27,500	803	847	885	896	906
GMC Fund Fiscal Position	**85**	**10**	**-72**	**-138**	**-178**

Alternative Finance Concept 12

- Coverage Assumptions
  - 87 AV Plan
  - Alternative coverage population
    - No commuters
    - No federal employees
    - No wrap of employer sponsored insurance
- Finance Assumptions
  - 8 % payroll tax on all Vermont businesses on their qualifying Vermont payroll, no exceptions and no transitions.
  - Sliding scale Public Premium from 0% - 8% of income, depending on income and family size.
  - Requires all Vermonters at or above 624% FPL to pay 8.0% of income, capped at $27,500. Sliding scale covers 90% of Vermont households.
  - Retains Provider Taxes

Alternative Finance Concept 12 Continued

	2017	2018	2019	2020	2021
Spending (All Values in Millions)					
GMC Coverage and Operations	-3,563	-3,785	-4,018	-4,168	-4,322
Current Law Revenue Estimates					
Federal Medicaid Match	1,284	1,335	1,386	1,418	1,476
Federal ACA Waiver Funding	106	118	122	125	132
State Medicaid Dollars	502	509	529	549	570
New Revenue Needed	**-1,671**	**-1,823**	**-1,981**	**-2,076**	**-2,144**
Payroll Tax of 8%	1,051	1,073	1,095	1,117	1,140
Public Premium up to 8% at 624% FPL Capped at $27,500	771	825	875	888	897
GMC Fund Fiscal Position	**151**	**75**	**-11**	**-71**	**-107**

Alternative Finance Concept 13

- Coverage Assumptions
  - 80 AV Plan with standard deductible plan design
  - Alternative coverage population
    - No commuters
    - No federal employees
    - No wrap of employer sponsored insurance
- Finance Assumptions
  - 8% payroll tax on all Vermont businesses on their qualifying Vermont payroll, no exceptions and no transitions.
  - Sliding scale Public Premium from 0% - 8% of income, depending on income and family size.
  - Requires all Vermonters at or above 624% FPL to pay 8.0% of income, capped at $27,500. Sliding scale covers 90% of Vermont households.
  - Retains Provider Taxes

Alternative Finance Concept 13 Continued

	2017	2018	2019	2020	2021
Spending (All Values in Millions)					
GMC Coverage and Operations	-3,354	-3,559	-3,806	-3,949	-4,097
Current Law Revenue Estimates					
Federal Medicaid Match	1,274	1,324	1,379	1,411	1,469
Federal ACA Waiver Funding	106	118	122	125	132
State Medicaid Dollars	502	509	529	549	570
New Revenue Needed	**-1,472**	**-1,608**	**-1,776**	**-1,864**	**-1,926**
Payroll Tax of 9.5%	1,051	1,073	1,095	1,117	1,140
Public Premium up to 8% at or above 624% FPL Capped at $27,500	754	807	874	886	897
GMC Fund Fiscal Position	**333**	**272**	**193**	**139**	**111**

Alternative Finance Concept 14

- Coverage Assumptions
  - 80 AV Plan
  - Alternative coverage population
    - No commuters
    - No federal employees
    - No wrap of employer sponsored insurance
- Finance Assumptions
  - 8% payroll tax on all Vermont businesses on their qualifying Vermont payroll, no exceptions and no transitions.
  - Sliding scale Public Premium from 0% - 8% of income, depending on income and family size.
  - Requires all Vermonters at or above 624% FPL to pay 8.0% of income, capped at $27,500.
  - Retains Provider Taxes

Alternative Finance Concept 14 Continued

	2017	2018	2019	2020	2021
Spending (All Values in Millions)					
GMC Coverage and Operations	-3,343	-3,550	-3,796	-3,938	-4,085
Current Law Revenue Estimates					
Federal Medicaid Match	1,275	1,324	1,379	1,411	1,469
Federal ACA Waiver Funding	106	118	122	125	132
State Medicaid Dollars	502	509	529	549	570
New Revenue Needed	**-1,460**	**-1,599**	**-1,766**	**-1,853**	**-1,914**
Payroll Tax of 9.5%	1,051	1,073	1,095	1,117	1,140
Public Premium up to 8% at or above 624% FPL Capped at $27,500	754	807	873	886	897
GMC Fund Fiscal Position	**345**	**281**	**202**	**150**	**123**

Appendix F-4: GMC Public Premium Tax Exclusions and Credits

Medicare

Medicare enrollees would be exempt from the public premium. Joint filers where one member of a household is a Medicare enrollee and others are not (split households) would pay a reduced tax, one half of the normal tax liability. The Medicare exclusion could be revisited during a subsequent phase of GMC where Medicare enrollees may receive wrap around coverage from GMC.

Table F-4.1: Medicare, Split Household, and Non-Medicare Public Premium Tax Liability

Taxpayer	Medicare Household	Split Household	Non-Medicare Household
Income	$68,848	$68,848	$68,848
Family Size	2	2	2
FPL	400%	400%	400%
Public Premium	$0	$3,147	$6,294

An additional policy question is how to treat Medicare and Medicare split households the year they enroll in Medicare. The legislature could devise a credit system, make taxpayers pay a pro rata share of the tax based on time in the system, or treat Medicare recipients as enrolled for the full year during the year of Medicare enrollment.

TRICARE

Active duty and retired military service members with active TRICARE coverage would be enrolled in GMC but have their enrollment suspended for any period of time where they have TRICARE coverage. TRICARE recipients would be allowed a non-refundable tax credit for each month where they are enrolled in TRICARE coverage. The tax calculation would work in the following way for TRICARE recipients.

- Determine public premium tax liability
- Divide liability by 12 to determine credit amount per month of TRICARE coverage.
- Determine number of months covered by TRICARE
- Multiply credit amount and months enrolled in TRICARE to determine full credit value
- Subtract credit amount from public premium
- Pay remaining tax liability.

Table F-4.2: Example of TRICARE Recipient Public Premium Tax Liability

Taxpayer	TRICARE Household #1	TRICARE Household #2
Income	$55,462	$55,462
Family Size	4	4
FPL	200%	200%
Public Premium	$1,973	$1,973
Monthly Credit Amount (public premium/12)	$164.42	$164.42
Months Enrolled in TRICARE	6	12
Credit Value	$987	$1,973
Public Premium Tax Liability	$986	$0

As shown above, someone with TRICARE coverage for an entire year would be exempt from the tax.

Non-Medicare Retirees, Excluding State and Teacher Retirees

There would be a limited credit for Non-Medicare retirees, excluding state and teacher retirees. Eligible retirees, generally under age 65, would be enrolled in GMC but have their enrollment suspended for any period of time where they have employer-sponsored retiree health care coverage. These taxpayers would be allowed a non-refundable tax credit for each month where they have employer coverage. The tax calculation would work in the following way, mirroring the TRICARE credit.

- Determine public premium tax liability
- Divide liability by 12 to determine credit amount per month of employer retiree coverage.
- Determine number of months covered by employer retiree coverage
- Multiply credit amount and months enrolled in employer retiree coverage
- Subtract credit amount from public premium
- Pay remaining tax liability.

The credit would be aimed primarily at existing federal retirees and those with existing private sector employer-sponsored retiree coverage. In a sense, the credit would be an attempt to grandfather these employees who are close to Medicare eligibility and already relying on their retiree coverage. This credit should sunset by January 1st, 2027 to reflect the fact that Vermont residents would have time to plan for retirement considering the impact of GMC coverage and taxes. State and teacher retirees would be ineligible for the credit, as the State retiree system would be readjusted to account for the transition to Green Mountain Care.

Table F-4.3: Limited Non-Medicare Retiree Credit Recipient Public Premium Tax Liability

Taxpayer	Retiree Household #1	Retiree Household #2
Income	$55,462	$55,462
Family Size	1	1
FPL	200%	200%
Public Premium	$1,973	$1,973
Monthly Credit Amount (public premium/12)	$164.42	$164.42
Months Enrolled in TRICARE	6	12
Credit Value	$987	$1,973
Public Premium Tax Liability	$986	$0

As shown above, retirees with coverage for an entire year would be exempt from the tax.

Diane Post
[redacted]

Jul 19, 2019

Green Mountain Care Board

Subject: Proposed BCBS and MVP Premium Increases

To Green Mountain Care Board,

I am writing to comment on the proposed premium increases for Vermont Health Connect plans from Blue Cross Blue Shield and MVP Health Care.

I urge the Board to cut these increases so health insurance coverage does not become less affordable for Vermonters.

Premiums continue to grow far faster than wages. Increasing these costs even more will put affordable health care out of reach for too many Vermonters.

Please cut these proposed rate increases so Vermonters can afford the coverage we need.

Sincerely,
Diane Post

UNOFFICIAL COMMENT (Received post-decision)

Susan Mills
[redacted]

Jul 19, 2019

Green Mountain Care Board

Subject: Proposed BCBS and MVP Premium Increases

To Green Mountain Care Board,

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Sincerely,
Susan Mills

UNOFFICIAL COMMENT (Received post-decision)

Robert Larrabee
[redacted]

Jul 19, 2019

Green Mountain Care Board

Subject: Proposed BCBS and MVP Premium Increases

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Sincerely,
Robert Larrabee

UNOFFICIAL COMMENT (Received post-decision)

Thomas Pryzby
[redacted]

Jul 19, 2019

Green Mountain Care Board

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Sincerely,
Thomas Pryzby

UNOFFICIAL COMMENT (Received post-decision)

Charlotte McGray
[redacted]

Jul 19, 2019

Green Mountain Care Board

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Please cut these proposed rate increases so Vermonters can afford the coverage we need.

Sincerely,
Charlotte McGray

UNOFFICIAL COMMENT (Received post-decision)

Lauren Skaskiw
[redacted]

Jul 19, 2019

Green Mountain Care Board

Subject: Proposed BCBS and MVP Premium Increases

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Please cut these proposed rate increases so Vermonters can afford the coverage we need.

Sincerely,
Lauren Skaskiw

UNOFFICIAL COMMENT (Received post-decision)

Margo Whitcomb
[redacted]

Jul 19, 2019

Green Mountain Care Board

Subject: Proposed BCBS and MVP Premium Increases

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Please cut these proposed rate increases so Vermonters can afford the coverage we need.

Sincerely,
Margo Whitcomb

UNOFFICIAL COMMENT (Received post-decision)

Anne Emerson
[redacted]

Jul 19, 2019

Green Mountain Care Board

Subject: Proposed BCBS and MVP Premium Increases

To Green Mountain Care Board,

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Please cut these proposed rate increases so Vermonters can afford the coverage we need.

Sincerely,
Anne Emerson

UNOFFICIAL COMMENT (Received post-decision)

Marni Adhikari
[redacted]

Jul 19, 2019

Green Mountain Care Board

Subject: Proposed BCBS and MVP Premium Increases

To Green Mountain Care Board,

I am writing to comment on the proposed premium increases for Vermont Health Connect plans from Blue Cross Blue Shield and MVP Health Care.

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Please cut these proposed rate increases so Vermonters can afford the coverage we need.

Sincerely,
Marni Adhikari

UNOFFICIAL COMMENT (Received post-decision)

Joe Berry
[redacted]

Jul 19, 2019

Green Mountain Care Board

Subject: Proposed BCBS and MVP Premium Increases

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Sincerely,
Joe Berry

UNOFFICIAL COMMENT (Received post-decision)

Kelli Lee-Allen
[redacted]

Jul 19, 2019

Green Mountain Care Board

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Please cut these proposed rate increases so Vermonters can afford the coverage we need.

Sincerely,
Kelli Lee-Allen

UNOFFICIAL COMMENT (Received post-decision)

Roberta Overson
[redacted]

Jul 19, 2019

Green Mountain Care Board

Subject: Proposed BCBS and MVP Premium Increases

To Green Mountain Care Board,

I am writing to comment on the proposed premium increases for Vermont Health Connect plans from Blue Cross Blue Shield and MVP Health Care.

I urge the Board to cut these increases so health insurance coverage does not become less affordable for Vermonters.

Premiums continue to grow far faster than wages. Increasing these costs even more will put affordable health care out of reach for too many Vermonters.

Vermont has an aging population and most of us require medication and increased health care. We will require even more in years to come. Please cut these proposed rate increases so Vermonters can afford the coverage we need.
Sincerely,
Roberta Overson

Sincerely,
Roberta Overson

UNOFFICIAL COMMENT (Received post-decision)

ralph corbo
[redacted]

Jul 19, 2019

Green Mountain Care Board

Subject: Proposed BCBS and MVP Premium Increases

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Sincerely,
ralph corbo

UNOFFICIAL COMMENT (Received post-decision)

Tracie Harris
[redacted]

Jul 19, 2019

Green Mountain Care Board

Subject: Proposed BCBS and MVP Premium Increases

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Please cut these proposed rate increases so Vermonters can afford the coverage we need.

Sincerely,
Tracie Harris

UNOFFICIAL COMMENT (Received post-decision)

Lucia Perez
[redacted]

Jul 19, 2019

Green Mountain Care Board

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Please cut these proposed rate increases so Vermonters can afford the coverage we need.

Sincerely,
Lucia Perez

UNOFFICIAL COMMENT (Received post-decision)

Charles Murphy
[redacted]

Jul 19, 2019

Green Mountain Care Board

Subject: Proposed BCBS and MVP Premium Increases

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I am writing to comment on the proposed premium increases for Vermont Health Connect plans from Blue Cross Blue Shield and MVP Health Care.

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Sincerely,
Charles Murphy

UNOFFICIAL COMMENT (Received post-decision)

John Todd
[redacted]

Jul 19, 2019

Green Mountain Care Board

Subject: Proposed BCBS and MVP Premium Increases

To Green Mountain Care Board,

I am writing to comment on the proposed premium increases for Vermont Health Connect plans from Blue Cross Blue Shield and MVP Health Care.

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Please cut these proposed rate increases so Vermonters can afford the coverage we need.

Sincerely,
John Todd

UNOFFICIAL COMMENT (Received post-decision)

Karen Lavoie
[redacted]

Jul 19, 2019

Green Mountain Care Board

Subject: Proposed BCBS and MVP Premium Increases

To Green Mountain Care Board,

I am writing to comment on the proposed premium increases for Vermont Health Connect plans from Blue Cross Blue Shield and MVP Health Care.

I urge the Board to cut these increases so health insurance coverage does not become less affordable for Vermonters.

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Please cut these proposed rate increases so Vermonters can afford the coverage we need.

Sincerely,
Karen Lavoie

UNOFFICIAL COMMENT (Received post-decision)

Carrie Walker
[redacted]

Jul 19, 2019

Green Mountain Care Board

Subject: Proposed BCBS and MVP Premium Increases

To Green Mountain Care Board,

I am writing to comment on the proposed premium increases for Vermont Health Connect plans from Blue Cross Blue Shield and MVP Health Care.

I urge the Board to cut these increases so health insurance coverage does not become less affordable for Vermonters.

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Please cut these proposed rate increases so Vermonters can afford the coverage we need.

Sincerely,
Carrie Walker

UNOFFICIAL COMMENT (Received post-decision)

Beatrice Welch
[redacted]

Jul 19, 2019

Green Mountain Care Board

Subject: Proposed BCBS and MVP Premium Increases

To Green Mountain Care Board,

I am writing to comment on the proposed premium increases for Vermont Health Connect plans from Blue Cross Blue Shield and MVP Health Care.

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Please cut these proposed rate increases so Vermonters can afford the coverage we need.

Sincerely,
Beatrice Welch

UNOFFICIAL COMMENT (Received post-decision)

Janet Eller
[redacted]
[redacted]

Jul 19, 2019

Green Mountain Care Board

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To Green Mountain Care Board,

I am writing to comment on the proposed premium increases for Vermont Health Connect plans from Blue Cross Blue Shield and MVP Health Care.

I urge the Board to cut these increases so health insurance coverage does not become less affordable for Vermonters.

Premiums continue to grow far faster than wages. Increasing these costs even more will put affordable health care out of reach for too many Vermonters.

Please cut these proposed rate increases so Vermonters can afford the coverage we need.

Sincerely,
Janet Eller

UNOFFICIAL COMMENT (Received post-decision)

Nancy Osborne
[redacted]

Jul 19, 2019

Green Mountain Care Board

Subject: Proposed BCBS and MVP Premium Increases

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I am writing to comment on the proposed premium increases for Vermont Health Connect plans from Blue Cross Blue Shield and MVP Health Care.

I urge the Board to cut these increases so health insurance coverage does not become less affordable for Vermonters.

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Please cut these proposed rate increases so Vermonters can afford the coverage we need.

Sincerely,
Nancy Osborne

UNOFFICIAL COMMENT (Received post-decision)

Rejeanne Jalbert
[redacted]

Jul 19, 2019

Green Mountain Care Board

Subject: Proposed BCBS and MVP Premium Increases

To Green Mountain Care Board,

I am writing to comment on the proposed premium increases for Vermont Health Connect plans from Blue Cross Blue Shield and MVP Health Care.

I urge the Board to cut these increases so health insurance coverage does not become less affordable for Vermonters.

Premiums continue to grow far faster than wages. Increasing these costs even more will put affordable health care out of reach for too many Vermonters.

Please cut these proposed rate increases so Vermonters can afford the coverage we need.

I've been getting [redacted] or less for salary increases every year [redacted] and have taken on more and more demanding work loads without reflecting a proportionate increase in pay for doing the work of 2-3 people...Even though I'm an excellent worker due [redacted] and now BC BS wants this outrageous increase! At this rate, many of us will have to work longer than ever to not even keep up with the medical expenses!!

Please reign in the runaway "gravy train".....

Sincerely,
Rejeanne Jalbert

UNOFFICIAL COMMENT (Received post-decision)

Charles Andrews
[redacted]

Jul 19, 2019

Green Mountain Care Board

Subject: Proposed BCBS and MVP Premium Increases

To Green Mountain Care Board,

I am writing to comment on the proposed premium increases for Vermont Health Connect plans from Blue Cross Blue Shield and MVP Health Care.

I urge the Board to cut these increases so health insurance coverage does not become less affordable for Vermonters.

Premiums continue to grow far faster than wages. Increasing these costs even more will put affordable health care out of reach for too many Vermonters.

Please cut these proposed rate increases so Vermonters can afford the coverage we need.

Sincerely,
Charles Andrews

UNOFFICIAL COMMENT (Received post-decision)

Lawrence O'Neill
[redacted]

Jul 19, 2019

Green Mountain Care Board

Subject: Proposed BCBS and MVP Premium Increases

To Green Mountain Care Board,

I am writing to comment on the proposed premium increases for Vermont Health Connect plans from Blue Cross Blue Shield and MVP Health Care.

As a Blue Cross Blue Shield rate payer I have watched as rates have escalated, coverages are trimmed and out of pocket costs rise - the affordability of insurance is a value proposition and it is becoming more and more unbalanced each year.

I urge the Board to cut these increases so health insurance coverage does not become less affordable for Vermonters.

Premiums continue to grow far faster than wages and pensions. Increasing these costs even more will put affordable health care out of reach for too many Vermonters.

Please cut these proposed rate increases so Vermonters can afford the coverage we need.

Sincerely,
Lawrence O'Neill

UNOFFICIAL COMMENT (Received post-decision)

First Last
123 Main Street
Anytown, VT 05401

Jul 19, 2019

Green Mountain Care Board

Subject: Proposed BCBS and MVP Premium Increases

To Green Mountain Care Board,

VPIRG:

This is important to me because healthcare in its current form is unaffordable. My son is a mid-level manager and has a BCBS policy. During an average year, he'll reach his deductible by October. I am a retired civil engineer, and have to postpone a necessary colonoscopy because even in July, it would still be all out-of-pocket. Your message that a 15% increase would make healthcare unaffordable implies the current cost is affordable. It is not.

The only solution to making healthcare affordable, and not "having access to," is Medicare for All. Hundreds of thousands of Veromonters need you to fight for it.

Sincerely,
First Last

UNOFFICIAL COMMENT (Received post-decision)

Eesha Williams
[redacted]

Jul 19, 2019

Green Mountain Care Board

Subject: Proposed BCBS and MVP Premium Increases

To Green Mountain Care Board,

I am writing to comment on the proposed premium increases for Vermont Health Connect plans from Blue Cross Blue Shield and MVP Health Care.

I urge the Board to cut these increases so health insurance coverage does not become less affordable for Vermonters.

Premiums continue to grow far faster than wages. Increasing these costs even more will put affordable health care out of reach for too many Vermonters.

Please cut these proposed rate increases so Vermonters can afford the coverage we need.

Sincerely,
Eesha Williams

UNOFFICIAL COMMENT (Received post-decision)

Jeremy Pere,
[redacted]

Jul 19, 2019

Green Mountain Care Board

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To Green Mountain Care Board,

I am writing to comment on the proposed premium increases for Vermont Health Connect plans from Blue Cross Blue Shield and MVP Health Care.

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Sincerely,
Jeremy Pere,

UNOFFICIAL COMMENT (Received post-decision)

Ken Lesem
[redacted]

Jul 19, 2019

Green Mountain Care Board

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I am writing to comment on the proposed premium increases for Vermont Health Connect plans from Blue Cross Blue Shield and MVP Health Care.

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Please cut these proposed rate increases so Vermonters can afford the coverage we need.

Sincerely,
Ken Lesem

UNOFFICIAL COMMENT (Received post-decision)

Sara Burghoff
[redacted]

Jul 19, 2019

Green Mountain Care Board

Subject: Proposed BCBS and MVP Premium Increases

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Please cut these proposed rate increases so Vermonters can afford the coverage we need.

Sincerely,
Sara Burghoff

UNOFFICIAL COMMENT (Received post-decision)

Sylvie HENNING
[redacted]

Jul 19, 2019

Green Mountain Care Board

Subject: Proposed BCBS and MVP Premium Increases

To Green Mountain Care Board,

I am writing to comment on the proposed premium increases for Vermont Health Connect plans from Blue Cross Blue Shield and MVP Health Care.

I urge the Board to cut these increases so health insurance coverage does not become less affordable for Vermonters.

Premiums continue to grow far faster than wages. Increasing these costs even more will put affordable health care out of reach for too many Vermonters.Vermonters should not have to go into debt to cover medical expenses or put off care because of the cost.

Please cut these proposed rate increases so Vermonters can afford the coverage we need.

Sincerely,
Sylvie HENNING

UNOFFICIAL COMMENT (Received post-decision)

Cristina Witte
[redacted]

Jul 19, 2019

Green Mountain Care Board

Subject: Proposed BCBS and MVP Premium Increases

To Green Mountain Care Board,

To whom it may concern:

I am writing to share my thoughts on the proposed premium increases for Vermont Health Connect plans from Blue Cross Blue Shield and MVP Health Care.

Vermont's commerce and economy story is based largely in part by many smaller companies, with fewer staff sizes overall when compared to the average employer size of our neighboring states.

I am a Vermont citizen working for one of these smaller employers. That being said, due to our size, (as well as the average size of other Vermont based organizations), these proposed cost increases are felt more immensely, as we don't have the larger staff to help absorb or share in the cost of your proposed increases. Over the years, many of us have felt the impact at the point of care, with higher copays and more cost responsibility being shifted to us, in order to have access to an affordable plan altogether.

In urging the board to cut these increases such as to ensure affordability, bear in mind that premiums continue to grow far faster than livable wages for many of us. Additional increases and increased cost burdens to us may often put citizens in a position where healthcare affordability may be out of reach. I hate to think that as Vermonters that any of us would ever be put in the middle of these uncomfortable choices.

Please cut these proposed rate increases so Vermonters can afford the coverage we need.

Best,
Tina Witte

Sincerely,
Cristina Witte

UNOFFICIAL COMMENT (Received post-decision)

Mark Damico
[redacted]

Jul 19, 2019

Green Mountain Care Board

Subject: Proposed BCBS and MVP Premium Increases

To Green Mountain Care Board,

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I urge the Board to cut these increases so health insurance coverage does not become less affordable for Vermonters.

Premiums continue to grow far faster than wages. Increasing these costs even more will put affordable health care out of reach for too many Vermonters.

Please cut these proposed rate increases so Vermonters can afford the coverage we need. The coverage currently is not great anyway! Deductible costs are so high!

Sincerely,
Mark Damico

UNOFFICIAL COMMENT (Received post-decision)

hoss wuerslin
[redacted]

Jul 19, 2019

Green Mountain Care Board

Subject: Proposed BCBS and MVP Premium Increases

To Green Mountain Care Board,

my god stop the madness/ we only have so much money

how bout this i dont get sick you give me money

Sincerely,
hoss wuerslin

UNOFFICIAL COMMENT (Received post-decision)

Dawn Taylor
[redacted]

Jul 19, 2019

Green Mountain Care Board

Subject: Proposed BCBS and MVP Premium Increases

To Green Mountain Care Board,

I am writing to comment on the proposed premium increases for Vermont Health Connect plans from Blue Cross Blue Shield and MVP Health Care.

I urge the Board to cut these increases so health insurance coverage does not become less affordable for Vermonters.

Premiums continue to grow far faster than wages. Increasing these costs even more will put affordable health care out of reach for too many Vermonters.

Please cut these proposed rate increases so Vermonters can afford the coverage we need.

Sincerely,
Dawn Taylor

UNOFFICIAL COMMENT (Received post-decision)

Diana Palm
[redacted]

Jul 19, 2019

Green Mountain Care Board

Subject: Proposed BCBS and MVP Premium Increases

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Please cut these proposed rate increases so Vermonters can afford the coverage we need.

Sincerely,
Diana Palm

UNOFFICIAL COMMENT (Received post-decision)

Mary Eldredge
[redacted]
[redacted]

Jul 19, 2019

Green Mountain Care Board

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Sincerely,
Mary Eldredge

UNOFFICIAL COMMENT (Received post-decision)

Phyllis Erwin
[redacted]

Jul 19, 2019

Green Mountain Care Board

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Sincerely,
Phyllis Erwin

UNOFFICIAL COMMENT (Received post-decision)

William Pratt
[redacted]

Jul 19, 2019

Green Mountain Care Board

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Sincerely,
William Pratt

UNOFFICIAL COMMENT (Received post-decision)

Steve Peery
[redacted]
[redacted]

Jul 19, 2019

Green Mountain Care Board

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To Green Mountain Care Board,

I am writing to comment on the proposed premium increases for Vermont Health Connect plans from Blue Cross Blue Shield and MVP Health Care.

I urge the Board to cut these increases so health insurance coverage does not become less affordable for Vermonters.

As a small business owner, these increases are a doubled because I currently provide full coverage for my employee and her family in addition to my own family. Even the lowest cost, high deductible plan I provide is my largest expense.

Please cut these proposed rate increases so Vermonters can afford the coverage we need.

Sincerely,
Steve Peery

UNOFFICIAL COMMENT (Received post-decision)

Sue and John Morris
[redacted]
[redacted]

Jul 19, 2019

Green Mountain Care Board

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Please cut these proposed rate increases so Vermonters can afford the coverage we need.

Sincerely,
Sue and John Morris

UNOFFICIAL COMMENT (Received post-decision)

Cynthia Dudley
[redacted]
[redacted]

Jul 19, 2019

Green Mountain Care Board

Subject: Proposed BCBS and MVP Premium Increases

To Green Mountain Care Board,

I am writing to comment on the proposed premium increases for Vermont Health Connect plans from Blue Cross Blue Shield and MVP Health Care.

I urge the Board to cut these increases so health insurance coverage does not become less affordable for Vermonters.

Premiums continue to grow far faster than wages. Increasing these costs even more will put affordable health care out of reach for too many Vermonters.

Please cut these proposed rate increases so Vermonters can afford the coverage we need.

Sincerely,
Cynthia Dudley

UNOFFICIAL COMMENT (Received post-decision)

Elizabeth Bancroft
[redacted]

Jul 19, 2019

Green Mountain Care Board

Subject: Proposed BCBS and MVP Premium Increases

To Green Mountain Care Board,

I am insured through the Vermont Health Connect plan with Blue Cross Blue Shield, and I'm writing to comment on the proposed premium increases for Vermont Health Connect plans from Blue Cross Blue Shield and MVP Health Care.

I urge the Board to cut these increases so health insurance coverage does not become less affordable for Vermonters. I can tell you this increase would be really challenging for me, especially considering my deductible is already so high that most of my health care costs already come out of my pocket.

Premiums continue to grow far faster than wages. Increasing these costs even more will put affordable health care out of reach for too many Vermonters LIKE ME.

Please cut these proposed rate increases so Vermonters can afford the coverage we need. It would be so much better to help cut the costs of health care instead, by making administration more efficient, reducing unnecessary tests and procedures, eliminating drug advertising to consumers, refusing to pay the exorbitant prices the drug companies are charging and force them to negotiate, and taking the profit motives out of health care altogether.

Sincerely,
Elizabeth Bancroft

UNOFFICIAL COMMENT (Received post-decision)

Patricia Horne
[redacted]
[redacted]

Jul 19, 2019

Green Mountain Care Board

Subject: Proposed BCBS and MVP Premium Increases

To Green Mountain Care Board,

I am writing to comment on the proposed premium increases for Vermont Health Connect plans from Blue Cross Blue Shield and MVP Health Care.

I urge the Board to cut these increases so health insurance coverage does not become less affordable for Vermonters. I also urge the board to encourage the National government to exert more control of the price of drugs.

Premiums continue to grow far faster than wages. Increasing these costs even more will put affordable health care out of reach for too many Vermonters.

Please cut these proposed rate increases so Vermonters can afford the coverage we need.

Sincerely,
Patricia Horne

UNOFFICIAL COMMENT (Received post-decision)

NANCY L SAIDI
[redacted]

Jul 19, 2019

Green Mountain Care Board

Subject: Proposed BCBS and MVP Premium Increases

To Green Mountain Care Board,

I am writing to comment on the proposed premium increases for Vermont Health Connect plans from Blue Cross Blue Shield and MVP Health Care.

I urge the Board to cut these increases so health insurance coverage does not become less affordable for Vermonters.

Premiums continue to grow far faster than wages. Increasing these costs even more will put affordable health care out of reach for too many Vermonters.

Please cut these proposed rate increases so Vermonters can afford the coverage we need.

Sincerely,
NANCY L SAIDI

UNOFFICIAL COMMENT (Received post-decision)

Bill Capasso
[redacted]
[redacted]

Jul 19, 2019

Green Mountain Care Board

Subject: Proposed BCBS and MVP Premium Increases

To Green Mountain Care Board,

I am writing to comment on the proposed premium increases for Vermont Health Connect plans from Blue Cross Blue Shield and MVP Health Care.

I urge the Board to cut these increases so health insurance coverage does not become less affordable for Vermonters.

Premiums continue to grow far faster than wages. Increasing these costs even more will put affordable health care out of reach for too many Vermonters.

Please cut these proposed rate increases so Vermonters can afford the coverage we need.

Sincerely,
Bill Capasso

UNOFFICIAL COMMENT (Received post-decision)

Daniele Desrochers
[redacted]

Jul 19, 2019

Green Mountain Care Board

Subject: Proposed BCBS and MVP Premium Increases

To Green Mountain Care Board,

I am writing to comment on the proposed premium increases for Vermont Health Connect plans from Blue Cross Blue Shield and MVP Health Care.

I urge the Board to cut these increases so health insurance coverage does not become less affordable for Vermonters.

Premiums continue to grow far faster than wages. Increasing these costs even more will put affordable health care out of reach for too many Vermonters.

Please cut these proposed rate increases so Vermonters can afford the coverage we need.

Sincerely,
Daniele Desrochers

UNOFFICIAL COMMENT (Received post-decision)

Jeffrey Currier
[redacted]
[redacted]

Jul 19, 2019

Green Mountain Care Board

Subject: Proposed BCBS and MVP Premium Increases

To Green Mountain Care Board,

I am writing to comment on the proposed premium increases for Vermont Health Connect plans from Blue Cross Blue Shield and MVP Health Care.

I urge the Board to cut these increases so health insurance coverage does not become less affordable for Vermonters.

Premiums continue to grow far faster than wages. Increasing these costs even more will put affordable health care out of reach for too many Vermonters.

Please cut these proposed rate increases so Vermonters can afford the coverage we need.

Sincerely,
Jeffrey Currier

UNOFFICIAL COMMENT (Received post-decision)

Akara Draper
[redacted]

Jul 19, 2019

Green Mountain Care Board

Subject: Proposed BCBS and MVP Premium Increases

To Green Mountain Care Board,

I am writing to comment on the proposed premium increases for Vermont Health Connect plans from Blue Cross Blue Shield and MVP Health Care.

The rate increases you are proposing are way to high. I urge the Board to cut these increases so health insurance coverage does not become less affordable for Vermonters.

Premiums continue to grow far faster than wages. Increasing these costs even more will put affordable health care out of reach for too many Vermonters.

Please cut these proposed rate increases so Vermonters can afford the coverage we need.

Sincerely,
Akara Draper

UNOFFICIAL COMMENT (Received post-decision)

James Messier
[redacted]

Jul 19, 2019

Green Mountain Care Board

Subject: Proposed BCBS and MVP Premium Increases

To Green Mountain Care Board,

I am writing to comment on the proposed premium increases for Vermont Health Connect plans from Blue Cross Blue Shield and MVP Health Care.

I urge the Board to cut these increases so health insurance coverage does not become less affordable for Vermonters.

Premiums continue to grow far faster than wages. Increasing these costs even more will put affordable health care out of reach for too many Vermonters.

Please cut these proposed rate increases so Vermonters can afford the coverage we need.

Sincerely,
James Messier

UNOFFICIAL COMMENT (Received post-decision)

David Gottlieb
[redacted]

Jul 19, 2019

Green Mountain Care Board

Subject: Proposed BCBS and MVP Premium Increases

To Green Mountain Care Board,

I am writing to comment on the proposed premium increases for Vermont Health Connect plans from Blue Cross Blue Shield and MVP Health Care.

I urge the Board to support medicare for all.

Premiums continue to grow far faster than wages. Increasing these costs even more will put affordable health care out of reach for too many Vermonters.

Please change the system.

Sincerely,
David Gottlieb

UNOFFICIAL COMMENT (Received post-decision)

Scott Stewart
[redacted]

Jul 19, 2019

Green Mountain Care Board

Subject: Proposed BCBS and MVP Premium Increases

To Green Mountain Care Board,

I am writing to comment on the proposed premium increases for Vermont Health Connect plans from Blue Cross Blue Shield and MVP Health Care.

I urge the Board to cut these increases so health insurance coverage does not become even less affordable for Vermonters.

Premiums continue to grow far faster than wages. Deductibles and co-pays are out of sight and the covered amounts keep going down. Increasing these costs even more will put affordable health care out of reach for too many Vermonters.

"insurance" is becoming more and more of an oxymoron. It is your obligation to stand up to the relentless greed of the health care industry and insurance industry. It is being abused as a profitable business model rather than a public service..

Please cut these proposed rate increases so Vermonters can afford the coverage we need.

Sincerely,
Scott Stewart

UNOFFICIAL COMMENT (Received post-decision)

Holly Pedrini
[redacted]

Jul 19, 2019

Green Mountain Care Board

Subject: Proposed BCBS and MVP Premium Increases

To Green Mountain Care Board,

I am writing to comment on the proposed premium increases for Vermont Health Connect plans from Blue Cross Blue Shield and MVP Health Care.

I urge the Board to cut these increases so health insurance coverage does not become less affordable for Vermonters.

Premiums continue to grow far faster than wages. Increasing these costs even more will put affordable health care out of reach for too many Vermonters.

Please cut these proposed rate increases so Vermonters can afford the coverage we need.

Sincerely,
Holly Pedrini

UNOFFICIAL COMMENT (Received post-decision)

Marianne Barton
[redacted]

Jul 19, 2019

Green Mountain Care Board

Subject: Proposed BCBS and MVP Premium Increases

To Green Mountain Care Board,

I am writing to comment on the proposed premium increases for Vermont Health Connect plans from Blue Cross Blue Shield and MVP Health Care.

I urge the Board to cut these increases so health insurance coverage does not become less affordable for Vermonters.

Premiums continue to grow far faster than wages. Increasing these costs even more will put affordable health care out of reach for too many Vermonters.

Please cut these proposed rate increases so Vermonters can afford the coverage we need.

Sincerely,

Marianne Barton

Sincerely,
Marianne Barton

UNOFFICIAL COMMENT (Received post-decision)

Laura Austan
[redacted]
[redacted]

Jul 19, 2019

Green Mountain Care Board

Subject: Proposed BCBS and MVP Premium Increases

To Green Mountain Care Board,

I am writing to comment on the proposed premium increases for Vermont Health Connect plans from Blue Cross Blue Shield and MVP Health Care.

I urge the Board to cut these increases so health insurance coverage does not become less affordable for Vermonters.

Premiums continue to grow far faster than wages. Increasing these costs even more will put affordable health care out of reach for too many Vermonters.

Please cut these proposed rate increases so Vermonters can afford the coverage we need.

Sincerely,
Laura Austan

UNOFFICIAL COMMENT (Received post-decision)

Arthur Blackhawk
[redacted]

Jul 19, 2019

Green Mountain Care Board

Subject: Proposed BCBS and MVP Premium Increases

To Green Mountain Care Board,

I am writing to comment on the proposed premium increases for Vermont Health Connect plans from Blue Cross Blue Shield and MVP Health Care.

I urge the Board to cut these increases so health insurance coverage does not become less affordable for Vermonters.

Premiums continue to grow far faster than wages. Increasing these costs even more will put affordable health care out of reach for too many Vermonters.

Please cut these proposed rate increases so Vermonters can afford the coverage we need.

Sincerely,
Arthur Blackhawk

UNOFFICIAL COMMENT (Received post-decision)

Amythest Therrien
[redacted]

Jul 19, 2019

Green Mountain Care Board

Subject: Proposed BCBS and MVP Premium Increases

To Green Mountain Care Board,

I am writing to comment on the proposed premium increases for Vermont Health Connect plans from Blue Cross Blue Shield and MVP Health Care.

I urge the Board to cut these increases so health insurance coverage does not become less affordable for Vermonters.

Premiums continue to grow far faster than wages. Increasing these costs even more will put affordable health care out of reach for too many Vermonters.

Please cut these proposed rate increases so Vermonters can afford the coverage we need.

Sincerely,
Amythest Therrien

UNOFFICIAL COMMENT (Received post-decision)

James Burde
[redacted]

Jul 19, 2019

Green Mountain Care Board

Subject: Re: Proposed BCBS and MVP Premium Increases

To Green Mountain Care Board,

I am writing to comment on the proposed premium increases for Vermont Health Connect plans from Blue Cross Blue Shield and MVP Health Care.

It is a disgrace that these health insurance companies request rate hikes when, as major players in our deeply flawed state and national health care system, they continue to make money hand over fist at the expense of those of us in need of care.

I urge the Board to cut these increases so health insurance coverage does not become less affordable for Vermonters.

Premiums continue to grow far faster than wages. Increasing these costs even more will put affordable health care out of reach for too many Vermonters.

Please cut these proposed rate increases so Vermonters can afford the coverage we need.

Sincerely,
James Burde

UNOFFICIAL COMMENT (Received post-decision)

Jerome Milks
[redacted]

Jul 19, 2019

Green Mountain Care Board

Subject: Proposed BCBS and MVP Premium Increases

To Green Mountain Care Board,

I am writing to comment on the proposed premium increases for Vermont Health Connect plans from Blue Cross Blue Shield and MVP Health Care.

I urge the Board to cut these increases so health insurance coverage does not become less affordable for Vermonters.

Premiums continue to grow far faster than wages. Increasing these costs even more will put affordable health care out of reach for too many Vermonters.

Please cut these proposed rate increases so Vermonters can afford the coverage we need.

Sincerely,
Jerome Milks

UNOFFICIAL COMMENT (Received post-decision)

Diana Bain
[redacted]

Jul 19, 2019

Green Mountain Care Board

Subject: Proposed BCBS and MVP Premium Increases

To Green Mountain Care Board,

I am writing to comment on the proposed premium increases for Vermont Health Connect plans from Blue Cross Blue Shield and MVP Health Care.

I urge the Board to cut these increases so health insurance coverage does not become less affordable for Vermonters. Affordable health care is a right, not a privilege - all people deserve health care!

Premiums continue to grow far faster than wages. Increasing these costs even more will put affordable health care out of reach for too many Vermonters.

Please cut these proposed rate increases so Vermonters can afford the coverage we need.

Sincerely,
Diana Bain

UNOFFICIAL COMMENT (Received post-decision)

John Menard
[redacted]

Jul 19, 2019

Green Mountain Care Board

Subject: Proposed BCBS and MVP Premium Increases

To Green Mountain Care Board,

I am writing to comment on the proposed premium increases for Vermont Health Connect plans from Blue Cross Blue Shield and MVP Health Care.

I urge the Board to cut these increases so health insurance coverage does not become less affordable for Vermonters.

Premiums continue to grow far faster than wages. Increasing these costs even more will put affordable health care out of reach for too many Vermonters.

Please cut these proposed rate increases so Vermonters can afford the coverage we need.

Please note that I am retired so I am on a fixed budget and we have Blue Cross so you can see how much of a burden this will have on our lives.

John Menard

Sincerely,
John Menard

UNOFFICIAL COMMENT (Received post-decision)

Melinda Gale
[redacted]
[redacted]

Jul 19, 2019

Green Mountain Care Board

Subject: Proposed BCBS and MVP Premium Increases

To Green Mountain Care Board,

I am writing to comment on the proposed premium increases for Vermont Health Connect plans from Blue Cross Blue Shield and MVP Health Care.

I urge the Board to cut these increases so health insurance coverage does not become less affordable for Vermonters.

Premiums continue to grow far faster than wages. Increasing these costs even more will put affordable health care out of reach for too many Vermonters.

Please cut these proposed rate increases so Vermonters can afford the coverage we need.

Sincerely,
Melinda Gale

UNOFFICIAL COMMENT (Received post-decision)

Colleen Nesbit
[redacted]
[redacted]

Jul 19, 2019

Green Mountain Care Board

Subject: Proposed BCBS and MVP Premium Increases

To Green Mountain Care Board,

I am writing to comment on the proposed premium increases for Vermont Health Connect plans from Blue Cross Blue Shield and MVP Health Care.

I urge the Board to cut these increases so health insurance coverage does not become less affordable for Vermonters.

Premiums continue to grow far faster than wages. Increasing these costs even more will put affordable health care out of reach for too many Vermonters.

Please cut these proposed rate increases so Vermonters can afford the coverage we need.

Sincerely,
Colleen Nesbit

UNOFFICIAL COMMENT (Received post-decision)

Brynne Martin
[redacted]
[redacted]

Jul 19, 2019

Green Mountain Care Board

Subject: Proposed BCBS and MVP Premium Increases

To Green Mountain Care Board,

I am writing, as someone who has BCBS Vermont,to comment on the proposed premium increases for Vermont Health Connect plans from Blue Cross Blue Shield and MVP Health Care.

I urge the Board to cut these increases so health insurance coverage does not become less affordable for Vermonters.

Premiums continue to grow far faster than wages. Increasing these costs even more will put affordable health care out of reach for too many Vermonters.

Please cut these proposed rate increases so Vermonters can afford the coverage we need.

Sincerely,
Brynne Martin

UNOFFICIAL COMMENT (Received post-decision)

Marie Parent
[redacted]
[redacted]

Jul 19, 2019

Green Mountain Care Board

Subject: Proposed BCBS and MVP Premium Increases

To Green Mountain Care Board,

I am writing to comment on the proposed premium increases for Vermont Health Connect plans from Blue Cross Blue Shield and MVP Health Care.

I urge the Board to cut these increases so health insurance coverage does not become less affordable for Vermonters.

Premiums continue to grow far faster than wages. Increasing these costs even more will put affordable health care out of reach for too many Vermonters.

Please cut these proposed rate increases so Vermonters can afford the coverage we need.

Sincerely,
Marie Parent

UNOFFICIAL COMMENT (Received post-decision)

Gary Smith
[redacted]

Jul 19, 2019

Green Mountain Care Board

Subject: Proposed BCBS and MVP Premium Increases

To Green Mountain Care Board,

I am writing to comment on the proposed premium increases for Vermont Health Connect plans from Blue Cross Blue Shield and MVP Health Care.

I urge the Board to cut these increases so health insurance coverage does not become less affordable for Vermonters.

Premiums continue to grow far faster than wages. Increasing these costs even more will put affordable health care out of reach for too many Vermonters.

Please cut these proposed rate increases so Vermonters can afford the coverage we need.

Sincerely,
Gary Smith

UNOFFICIAL COMMENT (Received post-decision)

Kyle Neyer
[redacted]

Jul 19, 2019

Green Mountain Care Board

Subject: Proposed BCBS and MVP Premium Increases

To Green Mountain Care Board,

As an independent contractor working in Vermont & paying my fair share. I am writing to comment on the proposed premium increases for Vermont Health Connect plans from Blue Cross Blue Shield and MVP Health Care.

I urge the Board to cut these increases so health insurance coverage does not become less affordable for Vermonters.

Premiums continue to grow far faster than wages. Increasing these costs even more will put affordable health care out of reach for too many Vermonters.

Please cut these proposed rate increases so Vermonters can afford the coverage we need.

Sincerely,
Kyle Neyer

UNOFFICIAL COMMENT (Received post-decision)

Valerie McCord
[redacted]

Jul 19, 2019

Green Mountain Care Board

Subject: Proposed BCBS and MVP Premium Increases

To Green Mountain Care Board,

I am writing to comment on the proposed premium increases for Vermont Health Connect plans from Blue Cross Blue Shield and MVP Health Care.

Health care is my second largest expense next to my mortgage. The premium is just the beginning. Additionally there are my monthly prescriptions, co-pays for doctor visits and everything the insurance company does not cover when I receive any kind of treatment. [redacted]

I can't afford a 10%-15% increase for health insurance. During open enrollment last Fall, I worked really hard to lower my insurance costs. I even switched my health insurance company and I really did not want to. Now they want even more money. Where's my 10% to 15% increase in my wages?

Vermonters can't afford an increase like that. I know people who don't even have insurance because they just flat out can't afford it. And they get penalized for that at tax time given the federal government's mandate that we carry health insurance coverage. How many more Vermonters will stop carrying insurance if the rates increase so much? We all know that the uninsured cost us all (you, me and the insurance companies) a lot of money because they can't pay out of pocket for medical needs.

I urge you to consider the welfare of all Vermonters. Making health insurance coverage even less affordable is not an answer. It will create more problems.

Please significantly reduce these proposed rate increases so Vermonters can afford the coverage we need. Our health depends on it.

Sincerely,
Valerie McCord

Louise Rickard
[redacted]

Jul 19, 2019

Green Mountain Care Board

Subject: Proposed BCBS and MVP Premium Increases

To Green Mountain Care Board,

I am writing to comment on the proposed premium increases for Vermont Health Connect plans from Blue Cross Blue Shield and MVP Health Care.

I urge the Board to cut these increases so health insurance coverage does not become less affordable for Vermonters.

Premiums continue to grow far faster than wages. Increasing these costs even more will put affordable health care out of reach for too many Vermonters.

Please cut these proposed rate increases so Vermonters can afford the coverage we need.

Sincerely,
Louise Rickard

UNOFFICIAL COMMENT (Received post-decision)

Victoria DeWind
[redacted]

Jul 19, 2019

Green Mountain Care Board

Subject: Proposed BCBS and MVP Premium Increases

To Green Mountain Care Board,

I am writing to comment on the proposed premium increases for Vermont Health Connect plans from Blue Cross Blue Shield and MVP Health Care. These rate increase requests will put insurance out of reach for many Vermonters.
I urge the Board to cut these increases so health insurance coverage will be closer to affordable for Vermonters.

Premiums continue to grow far faster than wages. Increasing these costs even more will put affordable health care out of reach for too many Vermonters.

Sincerely,
Victoria DeWind

UNOFFICIAL COMMENT (Received post-decision)

Candace Pratt
[redacted]

Jul 19, 2019

Green Mountain Care Board

Subject: Proposed BCBS and MVP Premium Increases

To Green Mountain Care Board,

I am writing to comment on the proposed premium increases for Vermont Health Connect plans from Blue Cross Blue Shield and MVP Health Care.

I urge the Board to not only cut these increases but not authorize any increases in health insurance coverage because it is becoming less affordable for Vermonters.

Premiums continue to grow far faster than wages. Increasing these costs even more will put affordable health care out of reach for too many Vermonters.

Please cut these proposed rate increases so Vermonters can afford the coverage we need.

Sincerely,
Candace Pratt

UNOFFICIAL COMMENT (Received post-decision)

Gillian Franks
[redacted]

Jul 19, 2019

Green Mountain Care Board

Subject: Proposed BCBS and MVP Premium Increases

To Green Mountain Care Board,

I am writing to comment on the proposed premium increases for Vermont Health Connect plans from Blue Cross Blue Shield and MVP Health Care.

I urge the Board to cut these increases so health insurance coverage does not become less affordable for Vermonters.

Premiums continue to grow far faster than wages. Increasing these costs even more will put affordable health care out of reach for too many Vermonters.

Please cut these proposed rate increases so Vermonters can afford the coverage we need.

Sincerely,
Gillian Franks

UNOFFICIAL COMMENT (Received post-decision)

Stacia Wright
[redacted]

Jul 19, 2019

Green Mountain Care Board

Subject: Proposed BCBS and MVP Premium Increases

To Green Mountain Care Board,

I am writing to comment on the proposed premium increases for Vermont Health Connect plans from Blue Cross Blue Shield and MVP Health Care.

I urge the Board to cut these increases so health insurance coverage does not become less affordable for Vermonters.

Premiums continue to grow far faster than wages. Increasing these costs even more will put affordable health care out of reach for too many Vermonters.

Please cut these proposed rate increases so Vermonters can afford the coverage we need.

Sincerely,
Stacia Wright

UNOFFICIAL COMMENT (Received post-decision)

Siobhan Donegan
[redacted]

Jul 19, 2019

Green Mountain Care Board

Subject: Proposed BCBS and MVP Premium Increases

To Green Mountain Care Board,

I am writing to comment on the proposed premium increases for Vermont Health Connect plans from Blue Cross Blue Shield and MVP Health Care.

I urge the Board to cut these increases so health insurance coverage does not become less affordable for Vermonters.

Premiums continue to grow far faster than wages. Increasing these costs even more will put affordable health care out of reach for too many Vermonters.

Please cut these proposed rate increases so Vermonters can afford the coverage we need.

Sincerely,
Siobhan Donegan

UNOFFICIAL COMMENT (Received post-decision)

Jessica Manchester
[redacted]

Jul 19, 2019

Green Mountain Care Board

Subject: Proposed BCBS and MVP Premium Increases

To Green Mountain Care Board,

I am writing to comment on the proposed premium increases for Vermont Health Connect plans from Blue Cross Blue Shield and MVP Health Care.

I urge the Board to cut these increases so health insurance coverage does not become less affordable for Vermonters.

Premiums continue to grow far faster than wages. Increasing these costs even more will put affordable health care out of reach for too many Vermonters.

Please cut these proposed rate increases so Vermonters can afford the coverage we need.

Sincerely,
Jessica Manchester

UNOFFICIAL COMMENT (Received post-decision)

Deborah Lisman
[redacted]
[redacted]

Jul 19, 2019

Green Mountain Care Board

Subject: Proposed BCBS and MVP Premium Increases

To Green Mountain Care Board,

I am writing to comment on the proposed premium increases for Vermont Health Connect plans from Blue Cross Blue Shield and MVP Health Care.

I urge the Board to cut these increases dramatically, so health insurance coverage does not become less affordable for Vermonters.

Premiums continue to grow far faster than wages. Increasing these costs even more will put affordable health care out of reach for too many Vermonters.

Please cut or completely deny these proposed rate increases so Vermonters can afford the coverage we need.

Sincerely,
Deborah Lisman

UNOFFICIAL COMMENT (Received post-decision)

Timmi Moffi
[redacted]

Jul 19, 2019

Green Mountain Care Board

Subject: Proposed BCBS and MVP Premium Increases

To Green Mountain Care Board,

I am writing to comment on the proposed premium increases for Vermont Health Connect plans from Blue Cross Blue Shield and MVP Health Care.

I urge the Board to cut these increases so health insurance coverage does not become less affordable for Vermonters.

Premiums continue to grow far faster than wages. Increasing these costs even more will put affordable health care out of reach for too many Vermonters.

Please cut these proposed rate increases so Vermonters can afford the coverage we need.

Sincerely,
Timmi Moffi

UNOFFICIAL COMMENT (Received post-decision)

Judith E
[redacted]

Jul 19, 2019

Green Mountain Care Board

Subject: Proposed BCBS and MVP Premium Increases

To Green Mountain Care Board,

I am writing to comment on the proposed premium increases for Vermont Health Connect plans from Blue Cross Blue Shield and MVP Health Care.

I urge the Board to cut these increases so health insurance coverage does not become less affordable for Vermonters.

Premiums continue to grow far faster than wages. Increasing these costs even more will put affordable health care out of reach for too many Vermonters.

Please cut these proposed rate increases so Vermonters can afford the coverage we need.

Sincerely,
Judith E

UNOFFICIAL COMMENT (Received post-decision)

Reba Korban
[redacted]

Jul 19, 2019

Green Mountain Care Board

Subject: Proposed BCBS and MVP Premium Increases

To Green Mountain Care Board,

I am writing to comment on the proposed premium increases for Vermont Health Connect plans from Blue Cross Blue Shield and MVP Health Care.

I urge the Board to cut these increases so health insurance coverage does not become less affordable for Vermonters.

Premiums continue to grow far faster than wages. Increasing these costs even more will put affordable health care out of reach for too many Vermonters.

Please cut these proposed rate increases so Vermonters can afford the coverage we need.

Wages have not kept pace with expenses, please help Vermonters afford health care. Thank you.

Sincerely,
Reba Korban

UNOFFICIAL COMMENT (Received post-decision)

The Rev. Kim Hardy
[redacted]

Jul 19, 2019

Green Mountain Care Board

Subject: Proposed BCBS and MVP Premium Increases

To Green Mountain Care Board,

I am writing to comment on the proposed premium increases for Vermont Health Connect plans from Blue Cross Blue Shield and MVP Health Care.

I urge the Board to cut these increases so health insurance coverage does not become less affordable for Vermonters.

Premiums continue to grow far faster than wages. Increasing these costs even more will put affordable health care out of reach for too many Vermonters. In addition, non-profit organizations and churches struggle to continue to provide health care to their employees.

Please cut these proposed rate increases so Vermonters can afford the coverage we need.

Sincerely,
The Rev. Kim Hardy

UNOFFICIAL COMMENT (Received post-decision)

Michael Gore
[redacted]
[redacted]

Jul 19, 2019

Green Mountain Care Board

Subject: Proposed BCBS and MVP Premium Increases

To Green Mountain Care Board,

I am writing to comment on the proposed premium increases for Vermont Health Connect plans from Blue Cross Blue Shield and MVP Health Care.

I urge the Board to cut these increases so health insurance coverage does not become less affordable for Vermonters.

Premiums continue to grow far faster than wages. Increasing these costs even more will put affordable health care out of reach for too many Vermonters.

Please cut these proposed rate increases so Vermonters can afford the coverage we need.

Sincerely,
Michael Gore

UNOFFICIAL COMMENT (Received post-decision)

NEWTON GARLAND
[redacted]

Jul 19, 2019

Green Mountain Care Board

Subject: Proposed BCBS and MVP Premium Increases

To Green Mountain Care Board,

I am writing to comment on the proposed premium increases for Vermont Health Connect plans from Blue Cross Blue Shield and MVP Health Care.

I urge the Board to cut these increases so health insurance coverage does not become less affordable for Vermonters.

Premiums continue to grow far faster than wages. Increasing these costs even more will put affordable health care out of reach for too many Vermonters.

Please cut these proposed rate increases so Vermonters can afford the coverage we need.

Sincerely,
NEWTON GARLAND

UNOFFICIAL COMMENT (Received post-decision)

catherine gibson
[redacted]
[redacted]

Jul 19, 2019

Green Mountain Care Board

Subject: Proposed BCBS and MVP Premium Increases

To Green Mountain Care Board,

I am writing to comment on the proposed premium increases for Vermont Health Connect plans from Blue Cross Blue Shield and MVP Health Care.

I urge the Board to cut these increases so health insurance coverage does not become less affordable for Vermonters.

Premiums continue to grow far faster than wages. Increasing these costs even more will put affordable health care out of reach for too many Vermonters.

Please cut these proposed rate increases so Vermonters can afford the coverage we need.

Sincerely,
catherine gibson

UNOFFICIAL COMMENT (Received post-decision)

Patrick Fultz
[redacted]

Jul 19, 2019

Green Mountain Care Board

Subject: Proposed BCBS and MVP Premium Increases

To Green Mountain Care Board,

I am writing to comment on the proposed premium increases for Vermont Health Connect plans from Blue Cross Blue Shield and MVP Health Care.

I urge the Board to cut these increases so health insurance coverage does not become less affordable for Vermonters.

Premiums continue to grow far faster than wages. Increasing these costs, even more, will put affordable health care out of reach for too many Vermonters.

With these kinds of increases, we'll see more people leaving our beautiful state. Please cut these proposed rate increases so Vermonters can afford the coverage we need.

Patrick Fultz
[redacted]

Sincerely,
Patrick Fultz

UNOFFICIAL COMMENT (Received post-decision)

John Lewis
[redacted]

Jul 19, 2019

Green Mountain Care Board

Subject: Proposed BCBS and MVP Premium Increases

To Green Mountain Care Board,

I am writing to comment on the proposed premium increases for Vermont Health Connect plans from Blue Cross Blue Shield and MVP Health Care.

I urge the Board to cut these increases so health insurance coverage does not become less affordable for Vermonters.

Premiums continue to grow far faster than wages. Increasing these costs even more will put affordable health care out of reach for too many Vermonters.

Please cut these proposed rate increases so Vermonters can afford the coverage we need.

Sincerely,
John Lewis

UNOFFICIAL COMMENT (Received post-decision)

catherine cole
[redacted]

Jul 19, 2019

Green Mountain Care Board

Subject: Proposed BCBS and MVP Premium Increases

To Green Mountain Care Board,

I am writing to comment on the proposed premium increases for Vermont Health Connect plans from Blue Cross Blue Shield and MVP Health Care.

I urge the Board to cut these increases so health insurance coverage does not become less affordable for Vermonters.

Premiums continue to grow far faster than wages. Increasing these costs even more will put affordable health care out of reach for too many Vermonters.

Please cut these proposed rate increases so Vermonters can afford the coverage we need.

Sincerely,
catherine cole

UNOFFICIAL COMMENT (Received post-decision)

Betsy Milmann
[redacted]

Jul 19, 2019

Green Mountain Care Board

Subject: Proposed BCBS and MVP Premium Increases

To Green Mountain Care Board,

I am writing to comment on the proposed premium increases for Vermont Health Connect plans from Blue Cross Blue Shield and MVP Health Care.

I urge the Board to cut these increases so health insurance coverage does not become less affordable for Vermonters.

Premiums continue to grow far faster than wages. Increasing these costs even more will put affordable health care out of reach for too many Vermonters.

Please cut these proposed rate increases so Vermonters can afford the coverage we need.

Sincerely,
Betsy Milmann

UNOFFICIAL COMMENT (Received post-decision)

Lynne Birdsall
[redacted]

Jul 19, 2019

Green Mountain Care Board

Subject: Proposed BCBS and MVP Premium Increases

To Green Mountain Care Board,

I am writing to comment on the proposed premium increases for Vermont Health Connect plans from Blue Cross Blue Shield and MVP Health Care.

I urge the Board to cut these increases so health insurance coverage does not become less affordable for my friends and neighbors, who already pay out of pocket expenses that are beyond their means.

Premiums continue to grow far faster than wages. Increasing these costs even more will put affordable health care out of reach for too many Vermonters.

Please cut these proposed rate increases so Vermonters can afford the coverage we need.

Sincerely,
Lynne Birdsall

UNOFFICIAL COMMENT (Received post-decision)

Eric Hefel
[redacted]
[redacted]

Jul 19, 2019

Green Mountain Care Board

Subject: Proposed BCBS and MVP Premium Increases

To Green Mountain Care Board,

I am writing to comment on the proposed premium increases for Vermont Health Connect plans from Blue Cross Blue Shield and MVP Health Care.

Enough
We need universal health in Vermont for all Vermonters
I urge the Board to cut these increases so health insurance coverage does not become less affordable for Vermonters.

Premiums continue to grow far faster than wages. Increasing these costs even more will put affordable health care out of reach for too many Vermonters.

Please cut these proposed rate increases so Vermonters can afford the coverage we need.

Sincerely,
Eric Hefel

UNOFFICIAL COMMENT (Received post-decision)

Hilary Slater
[redacted]

Jul 19, 2019

Green Mountain Care Board

Subject: Proposed BCBS and MVP Premium Increases

To Green Mountain Care Board,

I am writing to comment on the proposed premium increases for Vermont Health Connect plans from Blue Cross Blue Shield and MVP Health Care.

I urge the Board to cut these increases so health insurance coverage does not become less affordable for Vermonters.

Premiums continue to grow far faster than wages. Increasing these costs even more will put affordable health care out of reach for too many Vermonters.

Please cut these proposed rate increases so Vermonters can afford the coverage we need.

Sincerely,
Hilary Slater

UNOFFICIAL COMMENT (Received post-decision)

Betsy Chapek
[redacted]
[redacted]

Jul 19, 2019

Green Mountain Care Board

Subject: Proposed BCBS and MVP Premium Increases

To Green Mountain Care Board,

I am writing to comment on the proposed premium increases for Vermont Health Connect plans from Blue Cross Blue Shield and MVP Health Care.

I urge the Board to cut these increases so health insurance coverage does not become less affordable for Vermonters.

Premiums continue to grow far faster than wages. Increasing these costs even more will put affordable health care out of reach for too many Vermonters.

Please cut these proposed rate increases so Vermonters can afford the coverage we need.

Sincerely,
Betsy Chapek

UNOFFICIAL COMMENT (Received post-decision)

Suzanne Dence
[redacted]

Jul 19, 2019

Green Mountain Care Board

Subject: Proposed BCBS and MVP Premium Increases

To Green Mountain Care Board,

I want to comment on the proposed premium increases for Vermont Health Connect plans from Blue Cross Blue Shield and MVP Health Care.

I urge the Board to cut these increases so health insurance coverage does not become less affordable for Vermonters.

Premiums continue to grow far faster than wages and offered coverage is less. Increasing these costs with less coverage and higher deductibles puts affordable health care out of reach for too many Vermonters.

Please cut these proposed rate increases so Vermonters can afford the coverage we need.

Sincerely,
Suzanne Dence

UNOFFICIAL COMMENT (Received post-decision)

Dorian MacDonald
[redacted]

Jul 19, 2019

Green Mountain Care Board

Subject: Proposed BCBS and MVP Premium Increases

To Green Mountain Care Board,

I am writing to comment on the proposed premium increases for Vermont Health Connect plans from Blue Cross Blue Shield and MVP Health Care.

I urge the Board to cut these increases so health insurance coverage does not become less affordable for Vermonters.

Premiums continue to grow far faster than wages. Increasing these costs even more will put affordable health care out of reach for too many Vermonters.

Please cut these proposed rate increases so Vermonters can afford the coverage we need.

Sincerely,
Dorian MacDonald

UNOFFICIAL COMMENT (Received post-decision)

Elise Marks
[redacted]

Jul 19, 2019

Green Mountain Care Board

Subject: Proposed BCBS and MVP Premium Increases

To Green Mountain Care Board,

I am writing to comment on the proposed premium increases for Vermont Health Connect plans from Blue Cross Blue Shield and MVP Health Care.

I urge the Board to cut these increases so health insurance coverage does not become less affordable for Vermonters.

Premiums continue to grow far faster than wages. Increasing these costs even more will put affordable health care out of reach for too many Vermonters.

Please cut these proposed rate increases so Vermonters can afford the coverage we need.

Sincerely,
Elise Marks

UNOFFICIAL COMMENT (Received post-decision)

Lodiza LePore
[redacted]

Jul 19, 2019

Green Mountain Care Board

Subject: Proposed BCBS and MVP Premium Increases

To Green Mountain Care Board,

I am writing to comment on the proposed premium increases for Vermont Health Connect plans from Blue Cross Blue Shield and MVP Health Care.

I urge the Board to cut these increases so health insurance coverage does not become less affordable for Vermonters.

Premiums continue to grow far faster than wages. Increasing these costs even more will put affordable health care out of reach for too many Vermonters.

Please cut these proposed rate increases so Vermonters can afford the coverage we need.

Sincerely,
Lodiza LePore

UNOFFICIAL COMMENT (Received post-decision)

Harry Milkman
[redacted]

Jul 19, 2019

Green Mountain Care Board

Subject: Proposed BCBS and MVP Premium Increases

To Green Mountain Care Board,

I am writing to comment on the proposed premium increases for Vermont Health Connect plans from Blue Cross Blue Shield and MVP Health Care.

I urge the Board to cut these increases so health insurance coverage does not become less affordable for Vermonters.

Premiums continue to grow far faster than wages. Increasing these costs even more will put affordable health care out of reach for too many Vermonters.

Please cut these proposed rate increases so Vermonters can afford the coverage we need.

Sincerely,
Harry Milkman

UNOFFICIAL COMMENT (Received post-decision)

Laurie Larson
[redacted]
[redacted]

Jul 19, 2019

Green Mountain Care Board

Subject: Proposed BCBS and MVP Premium Increases

To Green Mountain Care Board,

I am writing to comment on the proposed premium increases for Vermont Health Connect plans from Blue Cross Blue Shield and MVP Health Care. I urge the Board to cut, or even zero out these increases so health insurance coverage does not become less affordable for Vermonters.

Premiums continue to grow far faster than wages. Increasing these costs even more will put affordable health care out of reach for many more Vermonters.

As a health care advocate, every day I work with people who cannot afford insurance even at the current rates. I also work with people struggling to get services covered by these same carriers, and I don't see that higher rate increases encourages them to cover services at even promised levels.

These rate increases are outrageous, and I'd like to see the insurance companies deal with 'raises' for once that are a fraction of the COLA vs. the other way around.

Sincerely,
Laurie Larson

UNOFFICIAL COMMENT (Received post-decision)

Amy Torchia
[redacted]

Jul 19, 2019

Green Mountain Care Board

Subject: Proposed BCBS and MVP Premium Increases

To Green Mountain Care Board,

I am writing to comment on the proposed premium increases for Vermont Health Connect plans from Blue Cross Blue Shield and MVP Health Care.

My husband recently had [redacted]. He doesn't get benefits where he works and I'm self employed. We pay for our own BCBS insurance through VT Health Connect. We can only afford a plan with the $5,000/person deductible. We literally had to crowd fund through Go Fund Me and a benefit concert in order to pay the medical bills. It was tough enough to deal with lost wages.

I urge the Board to cut these increases so health insurance coverage does not become less affordable for Vermonters.

Premiums continue to grow far faster than wages. Increasing these costs even more will put affordable health care out of reach for too many Vermonters.

Please cut these proposed rate increases so Vermonters can afford the coverage we need.

Sincerely,
Amy Torchia

UNOFFICIAL COMMENT (Received post-decision)

Catherine Cooke
[redacted]

Jul 19, 2019

Green Mountain Care Board

Subject: Proposed BCBS and MVP Premium Increases

To Green Mountain Care Board,

I am writing to comment on the proposed premium increases for Vermont Health Connect plans from Blue Cross Blue Shield and MVP Health Care.

I urge the Board to cut these increases so health insurance coverage does not become less affordable for Vermonters., particularly low income Vermonter with disabilities or who have children with disabilities.

Premiums continue to grow far faster than wages. Increasing these costs even more will put affordable health care out of reach for too many Vermonters.Making a greater concerned effort to make pharmaceutical companies take more responsibility by lowering their cost would help.

Please cut these proposed rate increases so Vermonters can afford the coverage we need.

Sincerely,
Catherine Cooke

UNOFFICIAL COMMENT (Received post-decision)

Benjamin Wheeler
[redacted]

Jul 19, 2019

Green Mountain Care Board

Subject: Proposed BCBS and MVP Premium Increases

To Green Mountain Care Board,

I am writing to comment on the proposed premium increases for Vermont Health Connect plans from Blue Cross Blue Shield and MVP Health Care.

I urge the Board to cut these increases so health insurance coverage does not become less affordable for Vermonters.

Having just moved my business to VT and having just had my MVP Health plan cancelled, for missing a payment, I'm concerned for many reasons. Most serious of these is that the manager I spoke with from Vermont Health Connect, told me I had to wait a minimum of 30 days for a hearing to reinstate, and probably several months for open enrollment. I asked what my alternate options were and "Joe" employee number M1X told me there were no other affordable options and that I needed to contact my elected officials. I told Joe that was unacceptable and that he was putting my life at risk. That if I was in an accident I could die from the situation he was putting me in. He said I would be contacted by phone in a few days to schedule a hearing for my case. He offered no alternatives, no interim solutions to fill the gap of what looks to be several months before open enrollment. This behavior is absolutely unacceptable, it's negligent and dare I say criminally uncaring for an organization that is supposed to be focused on care, but to go further If I were to listen to Joe, I would be uninsured and waiting for a call, which has still not come to remedy that dire situation. Joe said he was just following the law. Well, let's just say the people who put the holocaust victims on the train to the concentration camps were also just following the law too! Luckily, I (with no help from Joe or anyone at Vermont Health Connect), was able to secure healthcare with another provider and within the Vermont Health Connect System to boot. Yes, the system is so mismanaged that even the managers do not know what to do to provide viable alternatives to people losing their healthcare.

Take a good look at the people whose healthcare is being cancelled, then take a look in the mirror. In my case, I have excellent credit, I've never been arrested, I am college educated, I own a home, I pay taxes, I give to my community with public service, I own my own business, I've been an officer in a public company, I am new to Vermont, but the descendant of a revolutionary officer Capt. Isaac Wheeler, who fought in the Republic of Vermont with Seth Warner and Ethan Allen. Sure, I did miss a premium payment or two, but that's more because auto billing was not set up and I never received a call or text about my health coverage being cancelled. Unfortunately my bills were in a mound of mail I hadn't gone through soon enough. No excuse on my

part, but the situation would not have occurred if I had received a text or a phone call. Also I was never able to login to the website. Other companies and organizations make the effort to communicate more efficiently, why not Vermont Health Connect?

But seriously people of the board, what if I really had an accident during these gaps the system YOU ARE A PART OF is creating? What if your mother fell into one of these gaps? Arguably, having a serious injury and no healthcare could be as much a death sentence as sending someone on a train to a concentration camp during World War II! Do you really want to be a part of this kind of a system? Do you have personal liability for your decisions? Don't be so sure you don't. That was a topic of conversation on a board I was on once. You better have board insurance or you could be personally liable! Do you really want to have to worry about thousands of people who fall into the UNINSURED GAP and die because of your decision? Is this going to be on your conscious and part of your legacy you leave in your public service to the people of Vermont?

There's no doubt the system can be much better managed, and that's a much better, more efficient place to find savings, but that also comes with making a real effort to give a damn. Premiums continue to grow far faster than wages. Increasing these costs even more will hobble Vermont's competitive edge to attract growth and put affordable health care out of reach for too many Vermonters. More Vermonters YOU will be putting on that train! YOU on the board have the power to make a the right choice.

Please cut these proposed rate increases so Vermonters can afford the coverage we need.

Sincerely,
Benjamin Wheeler

Sincerely,
Benjamin Wheeler

elizabeth ambros
[redacted]
[redacted]

Jul 19, 2019

Green Mountain Care Board

Subject: Proposed BCBS and MVP Premium Increases

To Green Mountain Care Board,

I am writing to comment on the proposed premium increases for Vermont Health Connect plans from Blue Cross Blue Shield and MVP Health Care.

I urge the Board to cut these increases so health insurance coverage does not become less affordable for Vermonters.

Premiums continue to grow far faster than wages. Increasing these costs even more will put affordable health care out of reach for too many Vermonters.

Please cut these proposed rate increases so Vermonters can afford the coverage we need.

Sincerely,
elizabeth ambros

UNOFFICIAL COMMENT (Received post-decision)

Anthony Kinson
[redacted]

Jul 19, 2019

Green Mountain Care Board

Subject: Proposed BCBS and MVP Premium Increases

To Green Mountain Care Board,

I am writing to comment on the proposed premium increases for Vermont Health Connect plans from Blue Cross Blue Shield and MVP Health Care.

I urge the Board to cut these increases so health insurance coverage does not become less affordable for Vermonters.

I will not be able to afford this increase so will go without if this increase is approved. I already pay over $1000.00/ month on premium and have a $2500.00 deductable. My coverage is basically for catastrophic illness/ injury. My out of pocket expenses are close to another $1000.00. increases are not justified especially since costs are not controlled. I can give you many facts and accounts of waste and inefficiency.

Premiums continue to grow far faster than wages. Increasing these costs even more will put affordable health care out of reach for too many Vermonters.

Please cut these proposed rate increases so Vermonters can afford the coverage we need.

Sincerely,
Anthony Kinson

UNOFFICIAL COMMENT (Received post-decision)

Janice Day
[redacted]

Jul 19, 2019

Green Mountain Care Board

Subject: Proposed BCBS and MVP Premium Increases

To Green Mountain Care Board,

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I urge the Board to cut these increases so health insurance coverage does not become less affordable for Vermonters.

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Please cut these proposed rate increases so Vermonters can afford the coverage we need.

Sincerely,
Janice Day

UNOFFICIAL COMMENT (Received post-decision)

ingrid bennett
[redacted]

Jul 19, 2019

Green Mountain Care Board

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To Green Mountain Care Board,

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I urge the Board to cut these increases so health insurance coverage does not become less affordable for Vermonters.

Premiums continue to grow far faster than wages. Increasing these costs even more will put affordable health care out of reach for too many Vermonters.

Please cut these proposed rate increases so Vermonters can afford the coverage we need. Also bring back the high deductible plan my sons used to have and which I had before Medicare.

Sincerely,
ingrid bennett

UNOFFICIAL COMMENT (Received post-decision)

Paul Boffa
[redacted]

Jul 19, 2019

Green Mountain Care Board

Subject: Proposed BCBS and MVP Premium Increases

To Green Mountain Care Board,

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Please cut these proposed rate increases so Vermonters can afford the coverage we need.

Sincerely,
Paul Boffa

UNOFFICIAL COMMENT (Received post-decision)

Nicholas Sherman
[redacted]

Jul 19, 2019

Green Mountain Care Board

Subject: Proposed BCBS and MVP Premium Increases

To Green Mountain Care Board,

I am writing to comment on the proposed premium increases for Vermont Health Connect plans from Blue Cross Blue Shield and MVP Health Care.

I urge the Board to cut these increases so health insurance coverage does not become less affordable for Vermonters.

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Please cut these proposed rate increases so Vermonters can afford the coverage we need.

Sincerely,
Nicholas Sherman

UNOFFICIAL COMMENT (Received post-decision)

Melody Stone
[redacted]
[redacted]

Jul 19, 2019

Green Mountain Care Board

Subject: Proposed BCBS and MVP Premium Increases

To Green Mountain Care Board,

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Please cut these proposed rate increases so Vermonters can afford the coverage we need.

Sincerely,
Melody Stone

UNOFFICIAL COMMENT (Received post-decision)

Judy (Larson) DiMario
[redacted]
[redacted]

Jul 19, 2019

Green Mountain Care Board

Subject: Proposed BCBS and MVP Premium Increases

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Please cut these proposed rate increases so Vermonters can afford the coverage we need.

Sincerely,
Judy (Larson) DiMario

UNOFFICIAL COMMENT (Received post-decision)

Renee Ancel
[redacted]

Jul 19, 2019

Green Mountain Care Board

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I urge the Board to cut these increases so health insurance coverage does not become less affordable for Vermonters.

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Please cut these proposed rate increases so Vermonters can afford the coverage we need.

Sincerely,
Renee Ancel

UNOFFICIAL COMMENT (Received post-decision)

Cathy Walker
[redacted]

Jul 19, 2019

Green Mountain Care Board

Subject: Proposed BCBS and MVP Premium Increases

To Green Mountain Care Board,

I am writing to comment on the proposed premium increases for Vermont Health Connect plans from Blue Cross Blue Shield and MVP Health Care.

I urge the Board to cut these increases so health insurance coverage does not become less affordable for Vermonters.

Premiums continue to grow far faster than wages. Increasing these costs even more will put affordable health care out of reach for too many Vermonters.

Please cut these proposed rate increases so Vermonters can afford the coverage we need.

Sincerely,
Cathy Walker

UNOFFICIAL COMMENT (Received post-decision)

Kevin Lane
[redacted]

Jul 19, 2019

Green Mountain Care Board

Subject: Proposed BCBS and MVP Premium Increases

To Green Mountain Care Board,

I am writing to comment on the proposed premium increases for Vermont Health Connect plans from Blue Cross Blue Shield and MVP Health Care.

I urge the Board to cut these increases so health insurance coverage does not become less affordable for Vermonters.

Premiums continue to grow far faster than wages. Increasing these costs even more will put affordable health care out of reach for too many Vermonters.

Please cut these proposed rate increases so Vermonters can afford the coverage we need.

Sincerely,
Kevin Lane

UNOFFICIAL COMMENT (Received post-decision)

Kristin Richland
[redacted]
[redacted]

Jul 19, 2019

Green Mountain Care Board

Subject: Proposed BCBS and MVP Premium Increases

To Green Mountain Care Board,

I am writing to comment on the proposed premium increases for Vermont Health Connect plans from Blue Cross Blue Shield and MVP Health Care.

I urge the Board to cut these increases so health insurance coverage does not become less affordable for Vermonters. It is already a struggle for so many of my family and neighbors. Just looking at what our deductible is gives me nightmares.

Premiums continue to grow far faster than wages. Increasing these costs even more will put affordable health care out of reach for too many Vermonters.

Please cut these proposed rate increases so Vermonters can afford the coverage we need.

Sincerely,
Kristin Richland

UNOFFICIAL COMMENT (Received post-decision)

Mary Haskell
[redacted]

Jul 19, 2019

Green Mountain Care Board

Subject: Proposed BCBS and MVP Premium Increases

To Green Mountain Care Board,

I am writing to comment on the proposed premium increases for Vermont Health Connect plans from Blue Cross Blue Shield and MVP Health Care.

I urge the Board to cut these increases so health insurance coverage does not become less affordable for Vermonters.

Premiums continue to grow far faster than wages. Increasing these costs even more will put affordable health care out of reach for too many Vermonters. If we want young people to remain in or return to the state to live and work we can only make this a reality by ensuring that they have access to AFFORDABLE health care. Wages have not kept pace with inflation and increases like those proposed will only lead to more people leaving VT.

Please cut these proposed rate increases so Vermonters can afford the coverage we need.

Sincerely,
Mary Haskell

UNOFFICIAL COMMENT (Received post-decision)

elizabeth zeitel
[redacted]
[redacted]

Jul 19, 2019

Green Mountain Care Board

Subject: Proposed BCBS and MVP Premium Increases

To Green Mountain Care Board,

I am writing to comment on the proposed premium increases for Vermont Health Connect plans from Blue Cross Blue Shield and MVP Health Care.

I urge the Board to cut these increases so health insurance coverage does not become less affordable for Vermonters.

Premiums continue to grow far faster than wages. Increasing these costs even more will put affordable health care out of reach for too many Vermonters.

Please cut these proposed rate increases so Vermonters can afford the coverage we need.

Sincerely,
elizabeth zeitel

UNOFFICIAL COMMENT (Received post-decision)

Anna Kehler
[redacted]

Jul 19, 2019

Green Mountain Care Board

Subject: Proposed BCBS and MVP Premium Increases

To Green Mountain Care Board,

I am writing to comment on the proposed premium increases for Vermont Health Connect plans from Blue Cross Blue Shield and MVP Health Care.

I urge the Board to cut these increases so health insurance coverage does not become less affordable for Vermonters.

Premiums continue to grow far faster than wages. Increasing these costs even more will put affordable health care out of reach for too many Vermonters.

Please cut these proposed rate increases so Vermonters can afford the coverage we need.

Sincerely,
Anna Kehler

UNOFFICIAL COMMENT (Received post-decision)

Michael Doran
[redacted]

Jul 19, 2019

Green Mountain Care Board

Subject: Proposed BCBS and MVP Premium Increases

To Green Mountain Care Board,

I am writing to comment on the proposed premium increases for Vermont Health Connect plans from Blue Cross Blue Shield and MVP Health Care.

I urge the Board to cut these increases so health insurance coverage does not become less affordable for Vermonters.

Premiums continue to grow far faster than wages. Increasing these costs even more will put affordable health care out of reach for too many Vermonters.

Please cut these proposed rate increases so Vermonters can afford the coverage we need.

Sincerely,
Michael Doran

UNOFFICIAL COMMENT (Received post-decision)

Jane Gallagher
[redacted]
[redacted]

Jul 19, 2019

Green Mountain Care Board

Subject: Proposed BCBS and MVP Premium Increases

To Green Mountain Care Board,

I am writing to comment on the proposed premium increases for Vermont Health Connect plans from Blue Cross Blue Shield and MVP Health Care.

As a health insurance member of a Blue Cross plan, I urge the Board to cut these increases so that quality health insurance coverage does not become unaffordable and out of reach for many Vermonters.

Premiums continue to grow far faster than wages. Increasing these costs even more for members is unworkable as a solution to the price problems insurance companies are having because of priceing by drug manufacturers. Drug manufacturers need to let go of some of their over the top profits and health insurance companies should be demanding they do so, rather than settling their own profit problems on the backs of their members who can least afford to foot the bill for the drug manufacturers' greed.

Please cut these proposed rate increases so Vermonters can afford the coverage we need.

Sincerely,
Jane Gallagher

UNOFFICIAL COMMENT (Received post-decision)

margery cantor
[redacted]
[redacted]

Jul 19, 2019

Green Mountain Care Board

Subject: Proposed BCBS and MVP Premium Increases

To Green Mountain Care Board,

I am writing to comment on the proposed premium increases for Vermont Health Connect plans from Blue Cross Blue Shield and MVP Health Care.

I urge the Board to cut these increases so health insurance coverage does not become less affordable for Vermonters.

Premiums continue to grow far faster than wages. Increasing these costs even more will put affordable health care out of reach for too many Vermonters.

Please cut these proposed rate increases so Vermonters can afford the coverage we need.

Sincerely,
margery cantor

UNOFFICIAL COMMENT (Received post-decision)

Steven Eubanks
[redacted]

Jul 19, 2019

Green Mountain Care Board

Subject: Proposed BCBS and MVP Premium Increases

To Green Mountain Care Board,

I am writing to comment on the proposed premium increases for Vermont Health Connect plans from Blue Cross Blue Shield and MVP Health Care.

I urge the Board to cut these increases so health insurance coverage does not become less affordable for Vermonters.

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Please cut these proposed rate increases so Vermonters can afford the coverage we need.

Sincerely,
Steven Eubanks

UNOFFICIAL COMMENT (Received post-decision)

William McMains
[redacted]

Jul 20, 2019

Green Mountain Care Board

Subject: Proposed BCBS and MVP Premium Increases

To Green Mountain Care Board,

I am writing to comment on the proposed premium increases for Vermont Health Connect plans from Blue Cross Blue Shield and MVP Health Care.

I urge the Board to cut these increases so health insurance coverage does not become less affordable for Vermonters.

Premiums continue to grow far faster than wages. Increasing these costs even more will put affordable health care out of reach for too many Vermonters.

Please cut these proposed rate increases so Vermonters can afford the coverage we need.

Sincerely,
William McMains

UNOFFICIAL COMMENT (Received post-decision)

Patrice DeMarco
[redacted]

Jul 20, 2019

Green Mountain Care Board

Subject: Proposed BCBS and MVP Premium Increases

To Green Mountain Care Board,

I am writing to comment on the proposed premium increases for Vermont Health Connect plans from Blue Cross Blue Shield and MVP Health Care.

I was shocked to hear of the enormous rate increase that these companies are asking for; it will price insurance right out of range for so many Vermonters. If it is drug prices that are the cause, the company should just bargain with drug companies. MVP provides its customers with nothing to begin with, to charge more for nothing, is an outrage.
These unreasonable rate hikes are why we know that "health insurance" is a no win for most Vermonters. We don't need insurance, if this is how insurance companies behave. Vermonters need health care. We would be able to provide it WITHOUT insurance companies. Do not honor these enormous rate increases if you want to keep Vermont a healthy state.

Sincerely, Patrice DeMarco

Sincerely,
Patrice DeMarco

UNOFFICIAL COMMENT (Received post-decision)

Terese Ayer
[redacted]

Jul 20, 2019

Green Mountain Care Board

Subject: Proposed BCBS and MVP Premium Increases

To Green Mountain Care Board,

I am writing to comment on the proposed premium increases for Vermont Health Connect plans from Blue Cross Blue Shield and MVP Health Care.

I urge the Board to cut these increases so health insurance coverage does not become less affordable for Vermonters.

Premiums continue to grow far faster than wages. Increasing these costs even more will put affordable health care out of reach for too many Vermonters.

Please cut these proposed rate increases so Vermonters can afford the coverage we need.

Sincerely,
Terese Ayer

UNOFFICIAL COMMENT (Received post-decision)

Cynthia Allen-Berson
[redacted]
[redacted]

Jul 20, 2019

Green Mountain Care Board

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To Green Mountain Care Board,

I am writing to comment on the proposed premium increases for Vermont Health Connect plans from Blue Cross Blue Shield and MVP Health Care.

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Please cut these proposed rate increases so Vermonters can afford the coverage we need.

Sincerely,
Cynthia Allen-Berson

UNOFFICIAL COMMENT (Received post-decision)

Raymond Keller
[redacted]

Jul 20, 2019

Green Mountain Care Board

Subject: Proposed BCBS and MVP Premium Increases

To Green Mountain Care Board,

I am writing to comment on the proposed premium increases for Vermont Health Connect plans from Blue Cross Blue Shield and MVP Health Care.

I am personally a palled at the high cost of medical care in the state of repair. It's a serious issue and I wonder if I can continue to live in this state. I urge the Board to cut these increases so health insurance coverage does not become less affordable for Vermonters.

Premiums continue to grow far faster than wages. Increasing these costs even more will put affordable health care out of reach for too many Vermonters.

Please cut these proposed rate increases so Vermonters can afford the coverage we need.

Sincerely,
Raymond Keller

UNOFFICIAL COMMENT (Received post-decision)

Flo Burt
[redacted]
[redacted]

Jul 20, 2019

Green Mountain Care Board

Subject: Proposed BCBS and MVP Premium Increases

To Green Mountain Care Board,

I am writing to comment on the proposed premium increases for Vermont Health Connect plans from Blue Cross Blue Shield and MVP Health Care.

I urge the Board to cut these increases so health insurance coverage does not become less affordable for Vermonters.

Premiums continue to grow far faster than wages. Increasing these costs even more will put affordable health care out of reach for too many Vermonters.

Please cut these proposed rate increases so Vermonters can afford the coverage we need.

I am retired early due to health issues, thus I need comprehensive coverage at a reasonable price.

Sincerely,
Flo Burt

UNOFFICIAL COMMENT (Received post-decision)

Jeremy Seeger
[redacted]
[redacted]

Jul 20, 2019

Green Mountain Care Board

Subject: Proposed BCBS and MVP Premium Increases

To Green Mountain Care Board,

I am writing to comment on the proposed premium increases for Vermont Health Connect plans from Blue Cross Blue Shield and MVP Health Care.

I urge the Board to cut these increases so health insurance coverage does not become less affordable for Vermonters.

Premiums continue to grow far faster than wages. Increasing these costs even more will put affordable health care out of reach for too many Vermonters.

Please cut these proposed rate increases so Vermonters can afford the coverage we need.

Sincerely,
Jeremy Seeger

UNOFFICIAL COMMENT (Received post-decision)

Cindy Marshall
[redacted]

Jul 20, 2019

Green Mountain Care Board

Subject: Proposed BCBS and MVP Premium Increases

To Green Mountain Care Board,

I am writing to comment on the proposed premium increases for Vermont Health Connect plans from Blue Cross Blue Shield and MVP Health Care.

I urge the Board to cut these increases so health insurance coverage does not become less affordable for Vermonters.

My family is already paying over $1500/ month for our plan. It is stretching us beyond what we can do and requires us to work two jobs. Please stop these endless increases

Premiums continue to grow far faster than wages. Increasing these costs even more will put affordable health care out of reach for too many Vermonters.

Please cut these proposed rate increases so Vermonters can afford the coverage we need.

Sincerely,
Cindy Marshall

UNOFFICIAL COMMENT (Received post-decision)

Kathleen Hurley
[redacted]

Jul 20, 2019

Green Mountain Care Board

Subject: Proposed BCBS and MVP Premium Increases

To Green Mountain Care Board,

I am writing to comment on the proposed premium increases for Vermont Health Connect plans from Blue Cross Blue Shield and MVP Health Care.

I urge the Board to cut these increases so health insurance coverage does not become less affordable for Vermonters.

Premiums continue to grow far faster than wages. Increasing these costs even more will put affordable health care out of reach for too many Vermonters.

Please cut these proposed rate increases so Vermonters can afford the coverage we need.

Sincerely,
Kathleen Hurley

UNOFFICIAL COMMENT (Received post-decision)

Brent Mellen
[redacted]

Jul 20, 2019

Green Mountain Care Board

Subject: Proposed BCBS and MVP Premium Increases

To Green Mountain Care Board,

I am writing to comment on the proposed premium increases for Vermont Health Connect plans from Blue Cross Blue Shield and MVP Health Care.

I urge the Board to cut these increases so health insurance coverage does not become less affordable for Vermonters.

Premiums continue to grow far faster than wages. Increasing these costs even more will put affordable health care out of reach for too many Vermonters.

Please cut these proposed rate increases so Vermonters can afford the coverage we need.

On top of high premiums, many Vermonters, including our family, end up with a plan with a very high deductible to keep the premium cost down. This leaves us paying out of pocket for the majority of our annual health expenses. Health care is simply becoming too costly for low and middle income US families.

Sincerely,
Brent Mellen

UNOFFICIAL COMMENT (Received post-decision)

Richard Sullivan
[redacted]

Jul 20, 2019

Green Mountain Care Board

Subject: Proposed BCBS and MVP Premium Increases

To Green Mountain Care Board,

I am writing to comment on the proposed premium increases for Vermont Health Connect plans from Blue Cross Blue Shield and MVP Health Care.

I urge the Board to cut these increases so health insurance coverage does not become less affordable for Vermonters.

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Please cut these proposed rate increases so Vermonters can afford the coverage we need.

Sincerely,
Richard Sullivan

UNOFFICIAL COMMENT (Received post-decision)

Adrianne McQuade
[redacted]
[redacted]

Jul 20, 2019

Green Mountain Care Board

Subject: Proposed BCBS and MVP Premium Increases

To Green Mountain Care Board,

I am writing to comment on the proposed premium increases for Vermont Health Connect plans from Blue Cross Blue Shield and MVP Health Care.

I urge the Board to cut these increases so health insurance coverage does not become less affordable for Vermonters.

Premiums continue to grow far faster than wages. Increasing these costs even more will put affordable health care out of reach for too many Vermonters.

Please cut these proposed rate increases so Vermonters can afford the coverage we need.

Sincerely,
Adrianne McQuade

UNOFFICIAL COMMENT (Received post-decision)

Betsy Walkerman
[redacted]

Jul 20, 2019

Green Mountain Care Board

Subject: Proposed BCBS and MVP Premium Increases

To Green Mountain Care Board,

I am writing to comment on the proposed premium increases for Vermont Health Connect plans from Blue Cross Blue Shield and MVP Health Care.

I urge the Board to cut these increases so health insurance coverage does not become less affordable for Vermonters.

Premiums continue to grow far faster than wages. Increasing these costs even more will put affordable health care out of reach for too many Vermonters.

Please cut these proposed rate increases so Vermonters can afford the coverage we need.

Sincerely,
Betsy Walkerman

UNOFFICIAL COMMENT (Received post-decision)

Dawn Stanger
[redacted]

Jul 20, 2019

Green Mountain Care Board

Subject: Proposed BCBS and MVP Premium Increases

To Green Mountain Care Board,

I am writing to comment on the proposed premium increases for Vermont Health Connect plans from Blue Cross Blue Shield and MVP Health Care.

I urge the Board to cut these increases so health insurance coverage does not become less affordable for Vermonters.

Premiums continue to grow far faster than wages. Increasing these costs even more will put affordable health care out of reach for too many Vermonters.

Please cut these proposed rate increases so Vermonters can afford the coverage we need.

Sincerely,
Dawn Stanger

UNOFFICIAL COMMENT (Received post-decision)

Greer Krembs
[redacted]

Jul 20, 2019

Green Mountain Care Board

Subject: Proposed BCBS and MVP Premium Increases

To Green Mountain Care Board,

I am writing to comment on the proposed premium increases for Vermont Health Connect plans from Blue Cross Blue Shield and MVP Health Care.

I urge the Board to cut these increases so health insurance coverage does not become less affordable for Vermonters.

Premiums continue to grow far faster than wages. Increasing these costs even more will put affordable health care out of reach for too many Vermonters. I am a single income homeowner and this will be become very challenging for me and others in my position if healthcare costs increase. People should have access to affordable healthcare and not have to choose between the basic necessities such as a safe place to live, healthcare, and food.

Please cut these proposed rate increases so Vermonters can afford the coverage we need.

Sincerely,
Greer Krembs

UNOFFICIAL COMMENT (Received post-decision)

Nancy Kenney
[redacted]
[redacted]

Jul 20, 2019

Green Mountain Care Board

Subject: Proposed BCBS and MVP Premium Increases

To Green Mountain Care Board,

I am writing to comment on the proposed premium increases for Vermont Health Connect plans from Blue Cross Blue Shield and MVP Health Care.

I urge the Board to cut these increases so health 0insurance coverage does not become less affordable for Vermonters.

Premiums continue to grow far faster than wages. Increasing these costs even more will put affordable health care out of reach for too many Vermonters.

Please cut these proposed rate increases so Vermonters can afford the coverage we need.

Sincerely,
Nancy Kenney

UNOFFICIAL COMMENT (Received post-decision)

Jim Maland
[redacted]

Jul 20, 2019

Green Mountain Care Board

Subject: Proposed BCBS and MVP Premium Increases

To Green Mountain Care Board,

I am writing to comment on the proposed premium increases for Vermont Health Connect plans from Blue Cross Blue Shield and MVP Health Care.

I urge the Board to cut these increases so health insurance coverage does not become less affordable for Vermonters.

Premiums continue to grow far faster than wages. Increasing these costs even more will put affordable health care out of reach for too many Vermonters.

Please cut these proposed rate increases so Vermonters can afford the coverage we need. THESE DRASTIC RATE HIKES ARE JUST MORE FODDER FOR THE NEED FOR UNIVERSAL HEALTH CARE--=MEDICARE FOR ALL.

Sincerely,
Jim Maland

UNOFFICIAL COMMENT (Received post-decision)

Shelly Severinghaus
[redacted]

Jul 20, 2019

Green Mountain Care Board

Subject: Proposed BCBS and MVP Premium Increases

To Green Mountain Care Board,

I am writing to comment on the proposed premium increases for Vermont Health Connect plans from Blue Cross Blue Shield and MVP Health Care.

I urge the Board to cut these increases so health insurance coverage does not become less affordable for Vermonters.

Premiums continue to grow far faster than wages. Increasing these costs even more will put affordable health care out of reach for too many Vermonters.

Please cut these proposed rate increases so Vermonters can afford the coverage we need.

Sincerely,
Shelly Severinghaus

UNOFFICIAL COMMENT (Received post-decision)

Sarah Wesson
[redacted]

Jul 20, 2019

Green Mountain Care Board

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To Green Mountain Care Board,

I am writing to comment on the proposed premium increases for Vermont Health Connect plans from Blue Cross Blue Shield and MVP Health Care.

I urge the Board to cut these increases so health insurance coverage does not become less affordable for Vermonters.

Premiums continue to grow far faster than wages. Increasing these costs even more will put affordable health care out of reach for too many Vermonters.

Please cut these proposed rate increases so Vermonters can afford the coverage we need.

Sincerely,
Sarah Wesson

UNOFFICIAL COMMENT (Received post-decision)

Cathy Brown-Lombardo
[redacted]

Jul 20, 2019

Green Mountain Care Board

Subject: Proposed BCBS and MVP Premium Increases

To Green Mountain Care Board,

I am writing to comment on the proposed premium increases for Vermont Health Connect plans from Blue Cross Blue Shield and MVP Health Care.

I urge the Board to cut these increases so health insurance coverage does not become less affordable for Vermonters.

Premiums continue to grow far faster than wages. Increasing these costs even more will put affordable health care out of reach for too many Vermonters.

Please cut these proposed rate increases so Vermonters can afford the coverage we need, until there is a substantial increase in minimum wage.

Sincerely,
Cathy Brown-Lombardo

UNOFFICIAL COMMENT (Received post-decision)

Kristina Doyle
[redacted]

Jul 20, 2019

Green Mountain Care Board

Subject: Proposed BCBS and MVP Premium Increases

To Green Mountain Care Board,

I am writing to comment on the proposed premium increases for Vermont Health Connect plans from Blue Cross Blue Shield and MVP Health Care.

I urge the Board to cut these increases so health insurance coverage does not become less affordable for Vermonters.

Premiums continue to grow far faster than wages. Increasing these costs even more will put affordable health care out of reach for too many Vermonters.

Please cut these proposed rate increases so Vermonters can afford the coverage we need.

Sincerely,
Kristina Doyle

UNOFFICIAL COMMENT (Received post-decision)

Karen Hibbard
[redacted]

Jul 20, 2019

Green Mountain Care Board

Subject: Proposed BCBS and MVP Premium Increases

To Green Mountain Care Board,

I am writing to comment on the proposed premium increases for Vermont Health Connect plans from Blue Cross Blue Shield and MVP Health Care.

I urge the Board to cut these increases so health insurance coverage does not become less affordable for Vermonters.

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Please cut these proposed rate increases so Vermonters can afford the coverage we need.

Sincerely,
Karen Hibbard

UNOFFICIAL COMMENT (Received post-decision)

kasey miller
[redacted]

Jul 20, 2019

Green Mountain Care Board

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To Green Mountain Care Board,

I am writing to comment on the proposed premium increases for Vermont Health Connect plans from Blue Cross Blue Shield and MVP Health Care.

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Please cut these proposed rate increases so Vermonters can afford the coverage we need.

Sincerely,
kasey miller

UNOFFICIAL COMMENT (Received post-decision)

Lenora Meyers-Nelson
[redacted]

Jul 20, 2019

Green Mountain Care Board

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To Green Mountain Care Board,

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Please cut these proposed rate increases so Vermonters can afford the coverage we need.

Sincerely,
Lenora Meyers-Nelson

UNOFFICIAL COMMENT (Received post-decision)

Sarah Osgood
[redacted]

Jul 20, 2019

Green Mountain Care Board

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To Green Mountain Care Board,

I am writing to comment on the proposed premium increases for Vermont Health Connect plans from Blue Cross Blue Shield and MVP Health Care.

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Please cut these proposed rate increases so Vermonters can afford the coverage we need.

Sincerely,
Sarah Osgood

UNOFFICIAL COMMENT (Received post-decision)

Carol Brandt
[redacted]

Jul 20, 2019

Green Mountain Care Board

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To Green Mountain Care Board,

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Please cut these proposed rate increases so Vermonters can afford the coverage we need.

Sincerely,
Carol Brandt

UNOFFICIAL COMMENT (Received post-decision)

Erik Rehman
[redacted]
[redacted]

Jul 20, 2019

Green Mountain Care Board

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To Green Mountain Care Board,

I am writing to comment on the proposed premium increases for Vermont Health Connect plans from Blue Cross Blue Shield and MVP Health Care.

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Please cut these proposed rate increases so Vermonters can afford the coverage we need.

Sincerely,
Erik Rehman

UNOFFICIAL COMMENT (Received post-decision)

Paul Uman
[redacted]

Jul 20, 2019

Green Mountain Care Board

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To Green Mountain Care Board,

I am writing to comment on the proposed premium increases for Vermont Health Connect plans from Blue Cross Blue Shield and MVP Health Care.

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Sincerely,
Paul Uman

UNOFFICIAL COMMENT (Received post-decision)

Elaine Geyer
[redacted]

Jul 20, 2019

Green Mountain Care Board

Subject: Proposed BCBS and MVP Premium Increases

To Green Mountain Care Board,

I am writing to comment on the proposed premium increases for Vermont Health Connect plans from Blue Cross Blue Shield and MVP Health Care.

I urge the Board to cut these increases so health insurance coverage does not become less affordable for Vermonters. We don't get raises like this every year so why should they?????

Premiums continue to grow far faster than wages. Increasing these costs even more will put affordable health care out of reach for too many Vermonters. This is just ridiculous and they keep getting away with it.

Please cut these proposed rate increases so Vermonters can afford the coverage we need.

Sincerely,
Elaine Geyer

UNOFFICIAL COMMENT (Received post-decision)

Ryan Morgan
[redacted]

Jul 20, 2019

Green Mountain Care Board

Subject: Proposed BCBS and MVP Premium Increases

To Green Mountain Care Board,

I am writing to comment on the proposed premium increases for Vermont Health Connect plans from Blue Cross Blue Shield and MVP Health Care.

I urge the Board to cut these increases so health insurance coverage does not become less affordable for Vermonters.

Premiums continue to grow far faster than wages. Increasing these costs even more will put affordable health care out of reach for too many Vermonters. If want to keep people in this state, we need to stop making it impossible to live here.

Please cut these proposed rate increases so Vermonters can afford the coverage we need.

Sincerely,
Ryan Morgan

UNOFFICIAL COMMENT (Received post-decision)

Ann and Dan Green
[redacted]

Jul 20, 2019

Green Mountain Care Board

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Please cut these proposed rate increases so Vermonters can afford the coverage we need.

Sincerely,
Ann and Dan Green

UNOFFICIAL COMMENT (Received post-decision)

Sue Hacker
[redacted]
[redacted]

Jul 20, 2019

Green Mountain Care Board

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Please cut these proposed rate increases so Vermonters can afford the coverage we need.

Sincerely,
Sue Hacker

UNOFFICIAL COMMENT (Received post-decision)

Don Ross
[redacted]
[redacted]

Jul 21, 2019

Green Mountain Care Board

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I am writing to comment on the proposed premium increases for Vermont Health Connect plans from Blue Cross Blue Shield and MVP Health Care.

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Premiums continue to grow far faster than wages. Increasing these costs even more will put affordable health care out of reach for too many Vermonters.

Please cut these proposed rate increases so Vermonters can afford the coverage we need.

Sincerely,
Don Ross

UNOFFICIAL COMMENT (Received post-decision)

Lisa Kent
[redacted]

Jul 21, 2019

Green Mountain Care Board

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I urge the Board to cut these increases so health insurance coverage does not become less affordable for Vermonters.

Premiums continue to grow far faster than wages. Increasing these costs even more will put affordable health care out of reach for too many Vermonters.

Please cut these proposed rate increases so Vermonters can afford the coverage we need.

Sincerely,
Lisa Kent

Sincerely,
Lisa Kent

UNOFFICIAL COMMENT (Received post-decision)

Lynne DeJong-Decker
[redacted]

Jul 21, 2019

Green Mountain Care Board

Subject: Proposed BCBS and MVP Premium Increases

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Premiums continue to grow far faster than wages. Increasing these costs even more will put affordable health care out of reach for too many Vermonters.

Please cut these proposed rate increases so Vermonters can afford the coverage we need.

Sincerely,
Lynne DeJong-Decker

UNOFFICIAL COMMENT (Received post-decision)

Dominique Meyers
[redacted]

Jul 21, 2019

Green Mountain Care Board

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To Green Mountain Care Board,

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Please cut these proposed rate increases so Vermonters can afford the coverage we need.

Sincerely,
Dominique Meyers

UNOFFICIAL COMMENT (Received post-decision)

Rebecca Hamil
[redacted]

Jul 21, 2019

Green Mountain Care Board

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Premiums continue to grow far faster than wages. Increasing these costs even more will put affordable health care out of reach for too many Vermonters.

Please cut these proposed rate increases so Vermonters can afford the coverage we need.

Sincerely,
Rebecca Hamil

UNOFFICIAL COMMENT (Received post-decision)

Jennie Gartner
[redacted]
[redacted]

Jul 21, 2019

Green Mountain Care Board

Subject: Proposed BCBS and MVP Premium Increases

To Green Mountain Care Board,

I am writing to comment on the proposed premium increases for Vermont Health Connect plans from Blue Cross Blue Shield and MVP Health Care.

I urge the Board to cut these increases so health insurance coverage does not become even less affordable for Vermonters.

Premiums continue to grow far faster than wages. Increasing these costs even more will put affordable health care out of reach for too many Vermonters. At a time when the federal government is not putting people first, it is important for Vermont to again lead the way.

Please cut these proposed rate increases so Vermonters can afford the coverage we need.

Sincerely,
Jennie Gartner

UNOFFICIAL COMMENT (Received post-decision)

Jean Pollock
[redacted]
[redacted]

Jul 21, 2019

Green Mountain Care Board

Subject: Proposed BCBS and MVP Premium Increases

To Green Mountain Care Board,

I am writing to comment on the proposed premium increases for Vermont Health Connect plans from Blue Cross Blue Shield and MVP Health Care.

I urge the Board to cut these increases so health insurance coverage does not become less affordable for Vermonters.

As a provider of 33 years I can tell you that Blue Cross finally gave us providers somewhat of a substantial increase in pay for THE FIRST TIME in my 33 years in private practice, the end of this year. Do you know what I think? It's about time!

The profit margin for the insurance industry Is way out of line compared to the income of the providers with whom they contract.

Premiums continue to grow far faster than wages. Increasing these costs even more KEEPS affordable health care out of reach for too many Vermonters.

Please cut these proposed rate increases so Vermonters can afford the coverage we need.

Sincerely,
Jean Pollock

UNOFFICIAL COMMENT (Received post-decision)

Kim Kurak DO
[redacted]

Jul 21, 2019

Green Mountain Care Board

Subject: Proposed BCBS and MVP Premium Increases

To Green Mountain Care Board,

I am writing to comment on the proposed premium increases for Vermont Health Connect plans from Blue Cross Blue Shield and MVP Health Care.

I urge the Board to cut these increases so health insurance coverage does not become less affordable for Vermonters.

Premiums continue to grow far faster than wages. Increasing these costs even more will put affordable health care out of reach for too many Vermonters.

Please cut these proposed rate increases so Vermonters can afford the coverage we need.

Sincerely,
Kim Kurak DO

UNOFFICIAL COMMENT (Received post-decision)

Elliott Rice
[redacted]
[redacted]

Jul 21, 2019

Green Mountain Care Board

Subject: Proposed BCBS and MVP Premium Increases

To Green Mountain Care Board,

I am writing to comment on the proposed premium increases for Vermont Health Connect plans from Blue Cross Blue Shield and MVP Health Care.

I urge the Board to cut these increases so health insurance coverage does not become less affordable for Vermonters.

Premiums continue to grow far faster than wages. Increasing these costs even more will put affordable health care out of reach for too many Vermonters.

Please cut these proposed rate increases so Vermonters can afford the coverage we need.

Sincerely,
Elliott Rice

UNOFFICIAL COMMENT (Received post-decision)

Betsy Hardy
[redacted]

Jul 21, 2019

Green Mountain Care Board

Subject: Proposed BCBS and MVP Premium Increases

To Green Mountain Care Board,

I am writing to comment on the proposed premium increases for Vermont Health Connect plans from Blue Cross Blue Shield and MVP Health Care.

I urge the Board to cut these increases so health insurance coverage does not become less affordable for Vermonters.

Premiums continue to grow far faster than wages. Increasing these costs even more will put affordable health care out of reach for too many Vermonters.

Though we keep hearing about how well our country's economy is doing, I know this is not the reality for many people. The amount I earn has not gone up in the past two years, and other expenses keep increasing.

Please cut these proposed rate increases so Vermonters can afford the coverage we need.

Sincerely,
Betsy Hardy

UNOFFICIAL COMMENT (Received post-decision)

Vito Macaluso
[redacted]

Jul 21, 2019

Green Mountain Care Board

Subject: Proposed BCBS and MVP Premium Increases

To Green Mountain Care Board,

I am writing to comment on the proposed premium increases for Vermont Health Connect plans from Blue Cross Blue Shield and MVP Health Care.

I urge the Board to cut these increases so health insurance coverage does not become less affordable for Vermonters.

Premiums continue to grow far faster than wages. Increasing these costs even more will put affordable health care out of reach for too many Vermonters.

Please cut these proposed rate increases so Vermonters can afford the coverage we need.

The worst part of these increases is that the availability of service in my area of Vermont is minimal, yet we pay more for insurance each year. Why are we paying more for medical care that takes weeks to get appointments for a specialist and finding a PCP that is taking new patients is like finding hens teeth! I hope the people who are paying thousands of dollars a month on the insurance premiums foisted on them by monopolies like BCBS and MVP have better availability of services and better care than I have. Insurance increases should be kept in line with what the federal government pegs as the inflation rate, not 6 times the inflation rate.

Sincerely,
Vito Macaluso

UNOFFICIAL COMMENT (Received post-decision)

Linda Elbow
[redacted]

Jul 22, 2019

Green Mountain Care Board

Subject: Proposed BCBS and MVP Premium Increases

To Green Mountain Care Board,

I am writing to comment on the proposed premium increases for Vermont Health Connect plans from Blue Cross Blue Shield and MVP Health Care.

I urge the Board to cut these increases so health insurance coverage does not become less affordable for Vermonters.

Premiums continue to grow far faster than wages. Increasing these costs even more will put affordable health care out of reach for too many Vermonters.

Please cut these proposed rate increases so Vermonters can afford the coverage we need.

Sincerely,
Linda Elbow

UNOFFICIAL COMMENT (Received post-decision)

Melissa Wales
[redacted]
[redacted]

Jul 22, 2019

Green Mountain Care Board

Subject: Proposed BCBS and MVP Premium Increases

To Green Mountain Care Board,

I am writing to comment on the proposed premium increases for Vermont Health Connect plans from Blue Cross Blue Shield and MVP Health Care.

I urge the Board to cut these increases so health insurance coverage does not become less affordable for Vermonters.

Premiums continue to grow far faster than wages. Increasing these costs even more will put affordable health care out of reach for too many Vermonters.

Please cut these proposed rate increases so Vermonters can afford the coverage we need.

Sincerely,
Melissa Wales

UNOFFICIAL COMMENT (Received post-decision)

Kimberly Kimball
[redacted]

Jul 22, 2019

Green Mountain Care Board

Subject: Proposed BCBS and MVP Premium Increases

To Green Mountain Care Board,

I am writing to comment on the proposed premium increases for Vermont Health Connect plans from Blue Cross Blue Shield and MVP Health Care.

I urge the Board to cut these increases so health insurance coverage does not become less affordable for Vermonters.

Premiums continue to grow far faster than wages. Increasing these cost even more will put affordable health care out of reach for too many Vermonters. We can do better. Quality health care should be available to everyone.

Please cut these proposed rate increases so Vermonters can afford the coverage we need. Thank you.

Sincerely,
Kimberly Kimball

UNOFFICIAL COMMENT (Received post-decision)

Barbara Morrison
[redacted]

Jul 22, 2019

Green Mountain Care Board

Subject: Proposed BCBS and MVP Premium Increases

To Green Mountain Care Board,

I am writing to comment on the proposed premium increases for Vermont Health Connect plans from Blue Cross Blue Shield and MVP Health Care.

I urge the Board to cut these increases so health insurance coverage does not become less affordable for Vermonters.

Too many people I know are struggling with the costs now, including a young preschool teacher who is dear to me. He shouldn't be punished for having chosen a much-needed but poorly paid profession.

Premiums continue to grow far faster than wages. Increasing these costs even more will put affordable health care out of reach for too many Vermonters.

Please cut these proposed rate increases so Vermonters can afford the coverage we need.

Sincerely,
Barbara Morrison

UNOFFICIAL COMMENT (Received post-decision)

Beth Danon
[redacted]

Jul 22, 2019

Green Mountain Care Board

Subject: Proposed BCBS and MVP Premium Increases

To Green Mountain Care Board,

I am writing to comment on the proposed premium increases for Vermont Health Connect plans from Blue Cross Blue Shield and MVP Health Care.

I urge the Board to cut these increases so health insurance coverage does not become less affordable for Vermonters.

Premiums continue to grow far faster than wages. Increasing these costs even more will put affordable health care out of reach for too many Vermonters.

Please cut these proposed rate increases so Vermonters can afford the coverage we need.

Sincerely,
Beth Danon

UNOFFICIAL COMMENT (Received post-decision)

Ellen Forsythe
[redacted]

Jul 22, 2019

Green Mountain Care Board

Subject: Proposed BCBS and MVP Premium Increases

To Green Mountain Care Board,

I am writing to comment on the proposed premium increases for Vermont Health Connect plans from Blue Cross Blue Shield and MVP Health Care.

I urge the Board to cut these increases so health insurance coverage does not become less affordable for Vermonters.

Premiums continue to grow far faster than wages. Increasing these costs even more will put affordable health care out of reach for too many Vermonters.

Please cut these proposed rate increases so Vermonters can afford the coverage we need.

Sincerely,
Ellen Forsythe

UNOFFICIAL COMMENT (Received post-decision)

Marie Mongeau
[redacted]
[redacted]

Jul 22, 2019

Green Mountain Care Board

Subject: Proposed BCBS and MVP Premium Increases

To Green Mountain Care Board,

I am writing to comment on the proposed premium increases for Vermont Health Connect plans from Blue Cross Blue Shield and MVP Health Care.

I urge the Board to cut these increases so health insurance coverage does not become less affordable for Vermonters.

Premiums continue to grow far faster than wages. Increasing these costs even more will put affordable health care out of reach for too many Vermonters.

Please cut these proposed rate increases so Vermonters can afford the coverage we need.

Sincerely,
Marie Mongeau

UNOFFICIAL COMMENT (Received post-decision)

Jonathan Severinghaus
[redacted]

Jul 22, 2019

Green Mountain Care Board

Subject: Proposed BCBS and MVP Premium Increases

To Green Mountain Care Board,

I am writing to comment on the proposed premium increases for Vermont Health Connect plans from Blue Cross Blue Shield and MVP Health Care.

I urge the Board to cut these increases so health insurance coverage does not become less affordable for Vermonters.

Premiums continue to grow far faster than wages. Increasing these costs even more will put affordable health care out of reach for too many Vermonters.

Please cut these proposed rate increases so Vermonters can afford the coverage we need.

Sincerely,
Jonathan Severinghaus

UNOFFICIAL COMMENT (Received post-decision)

Jesse Scarlato
[redacted]
[redacted]

Jul 22, 2019

Green Mountain Care Board

Subject: Proposed BCBS and MVP Premium Increases

To Green Mountain Care Board,

I am writing to comment on the proposed premium increases for Vermont Health Connect plans from Blue Cross Blue Shield and MVP Health Care.

I urge the Board to cut these increases so health insurance coverage does not become less affordable for Vermonters.

Premiums continue to grow far faster than wages. Increasing these costs even more will put affordable health care out of reach for too many Vermonters.

Please cut these proposed rate increases so Vermonters can afford the coverage we need.

Sincerely,
Jesse Scarlato

UNOFFICIAL COMMENT (Received post-decision)

Dan and Sophie Dennis
[redacted]

Jul 23, 2019

Green Mountain Care Board

Subject: Proposed BCBS and MVP Premium Increases

To Green Mountain Care Board,

I am writing to comment on the proposed premium increases for Vermont Health Connect plans from Blue Cross Blue Shield and MVP Health Care.

I urge the Board to cut these increases so health insurance coverage does not become less affordable for Vermonters.

Premiums continue to grow far faster than wages. Increasing these costs even more will put affordable health care out of reach for too many Vermonters.

Please cut these proposed rate increases so Vermonters can afford the coverage we need.

Sincerely,
Dan and Sophie Dennis

UNOFFICIAL COMMENT (Received post-decision)

Christine Mulvey
[redacted]

Jul 23, 2019

Green Mountain Care Board

Subject: Proposed BCBS and MVP Premium Increases

To Green Mountain Care Board,

I am writing to comment on the proposed premium increases for Vermont Health Connect plans from Blue Cross Blue Shield and MVP Health Care.

I urge the Board to cut these increases so health insurance coverage does not become less affordable for Vermonters.

Premiums continue to grow far faster than wages. Increasing these costs even more will put affordable health care out of reach for too many Vermonters.

Please cut these proposed rate increases so Vermonters can afford the coverage we need.

Sincerely,
Christine Mulvey

UNOFFICIAL COMMENT (Received post-decision)

Danielle Brooks
[redacted]

Jul 23, 2019

Green Mountain Care Board

Subject: Proposed BCBS and MVP Premium Increases

To Green Mountain Care Board,

I am writing to comment on the proposed premium increases for Vermont Health Connect plans from Blue Cross Blue Shield and MVP Health Care.

I urge the Board to cut these increases so health insurance coverage does not become less affordable for Vermonters.

Premiums continue to grow far faster than wages. As it is, my monthly premium amount is more than a house payment. Increasing these costs even more will put affordable health care out of reach for too many Vermonters.

Please cut these proposed rate increases so Vermonters can afford the coverage we need.

Sincerely,
Danielle Brooks

UNOFFICIAL COMMENT (Received post-decision)

Kelly Dobler
[redacted]

Jul 23, 2019

Green Mountain Care Board

Subject: Proposed BCBS and MVP Premium Increases

To Green Mountain Care Board,

I am writing to comment on the proposed premium increases for Vermont Health Connect plans from Blue Cross Blue Shield and MVP Health Care.

I urge the Board to cut these increases so health insurance coverage does not become less affordable for Vermonters.

Premiums continue to grow far faster than wages. Increasing these costs even more will put affordable health care out of reach for too many Vermonters.

Please cut these proposed rate increases so Vermonters can afford the coverage we need.

Sincerely,
Kelly Dobler

UNOFFICIAL COMMENT (Received post-decision)

Lucas Peterson
[redacted]

Jul 23, 2019

Green Mountain Care Board

Subject: Proposed BCBS and MVP Premium Increases

To Green Mountain Care Board,

I am writing to comment on the proposed premium increases for Vermont Health Connect plans from Blue Cross Blue Shield and MVP Health Care.

I urge the Board to cut these increases so health insurance coverage does not become less affordable for Vermonters.

Premiums continue to grow far faster than wages. Increasing these costs even more will put affordable health care out of reach for too many Vermonters.

Please cut these proposed rate increases so Vermonters can afford the coverage we need.

Sincerely,
Lucas Peterson

UNOFFICIAL COMMENT (Received post-decision)

Mirjam Brett
[redacted]

Jul 24, 2019

Green Mountain Care Board

Subject: Proposed BCBS and MVP Premium Increases

To Green Mountain Care Board,

I am writing to comment on the proposed premium increases for Vermont Health Connect plans from Blue Cross Blue Shield and MVP Health Care.

I urge the Board to cut these increases so health insurance coverage does not become less affordable for Vermonters.

Premiums continue to grow far faster than wages. Increasing these costs even more will put affordable health care out of reach for too many Vermonters.

Please cut these proposed rate increases so Vermonters can afford the coverage we need.

Sincerely,
Mirjam Brett

UNOFFICIAL COMMENT (Received post-decision)

Jacquelyn Perron
[redacted]

Jul 24, 2019

Green Mountain Care Board

Subject: Proposed BCBS and MVP Premium Increases

To Green Mountain Care Board,

I am writing to comment on the proposed premium increases for Vermont Health Connect plans from Blue Cross Blue Shield and MVP Health Care.

I urge the Board to cut these increases so health insurance coverage does not become less affordable for Vermonters.

Premiums continue to grow far faster than wages. Increasing these costs even more will put affordable health care out of reach for too many Vermonters.

Please cut these proposed rate increases so Vermonters can afford the coverage we need.

Sincerely,
Jacquelyn Perron

UNOFFICIAL COMMENT (Received post-decision)

Anne Alford
[redacted]

Jul 24, 2019

Green Mountain Care Board

Subject: Proposed BCBS and MVP Premium Increases

To Green Mountain Care Board,

I am writing to comment on the proposed premium increases for Vermont Health Connect plans from Blue Cross Blue Shield and MVP Health Care.

I urge the Board to cut these increases so health insurance coverage does not become less affordable for Vermonters.

Premiums continue to grow far faster than wages. Increasing these costs even more will put affordable health care out of reach for too many Vermonters.

Please cut these proposed rate increases so Vermonters can afford the coverage we need.

Sincerely,
Anne Alford

UNOFFICIAL COMMENT (Received post-decision)

Corey N Gottfried
[redacted]

Jul 24, 2019

Green Mountain Care Board

Subject: Proposed BCBS and MVP Premium Increases

To Green Mountain Care Board,

I am writing to comment on the proposed premium increases for Vermont Health Connect plans from Blue Cross Blue Shield and MVP Health Care.

I urge the Board to cut these increases so health insurance coverage does not become less affordable for Vermonters.

Premiums continue to grow far faster than wages. Increasing these costs even more will put affordable health care out of reach for too many Vermonters.

Please cut these proposed rate increases so Vermonters can afford the coverage we need.

Sincerely,
Corey N Gottfried

UNOFFICIAL COMMENT (Received post-decision)

James Heltz
[redacted]

Jul 24, 2019

Green Mountain Care Board

Subject: Proposed BCBS and MVP Premium Increases

To Green Mountain Care Board,

I am writing to comment on the proposed premium increases for Vermont Health Connect plans from Blue Cross Blue Shield and MVP Health Care.

I urge the Board to cut these increases so health insurance coverage does not become less affordable for Vermonters.

Premiums continue to grow far faster than wages. Increasing these costs even more will put affordable health care out of reach for too many Vermonters.

Please cut these proposed rate increases so Vermonters can afford the coverage we need.

Sincerely,
James Heltz

UNOFFICIAL COMMENT (Received post-decision)

Leesa Stewart
[redacted]

Jul 24, 2019

Green Mountain Care Board

Subject: Proposed BCBS and MVP Premium Increases

To Green Mountain Care Board,

I am writing to comment on the proposed premium increases for Vermont Health Connect plans from Blue Cross Blue Shield and MVP Health Care.

I urge the Board to not allow these increases so health insurance coverage does not become impossible to afford for Vermonters.

Premiums have grown far faster than wages for over a decade. Increasing these costs even more will put health care out of reach for too many Vermonters.

Please disallow these proposed rate increases so Vermonters can afford the coverage we need.

Sincerely,
Leesa Stewart

UNOFFICIAL COMMENT (Received post-decision)

Joseph Patalano
[redacted]

Jul 24, 2019

Green Mountain Care Board

Subject: Proposed BCBS and MVP Premium Increases

To Green Mountain Care Board,

I am writing to comment on the proposed premium increases for Vermont Health Connect plans from Blue Cross Blue Shield and MVP Health Care.

I urge the Board to cut these increases so health insurance coverage does not become less affordable for Vermonters.

Premiums continue to grow far faster than wages. Increasing these costs even more will put affordable health care out of reach for too many Vermonters.

Please cut these proposed rate increases so Vermonters can afford the coverage we need.

Sincerely,
Joseph Patalano

UNOFFICIAL COMMENT (Received post-decision)

Marlene Wallace
[redacted]
[redacted]

Jul 24, 2019

Green Mountain Care Board

Subject: Proposed BCBS and MVP Premium Increases

To Green Mountain Care Board,

I am writing to comment on the proposed premium increases for Vermont Health Connect plans from Blue Cross Blue Shield and MVP Health Care.

I urge the Board to cut these increases so health insurance coverage does not become less affordable for Vermonters.

Premiums continue to grow far faster than wages. Increasing these costs even more will put affordable health care out of reach for too many Vermonters.

Please cut these proposed rate increases so Vermonters can afford the coverage we need.

Sincerely,
Marlene Wallace

UNOFFICIAL COMMENT (Received post-decision)

Edward Heys
[redacted]

Jul 24, 2019

Green Mountain Care Board

Subject: Proposed BCBS and MVP Premium Increases

To Green Mountain Care Board,

I am writing to comment on the proposed premium increases for Vermont Health Connect plans from Blue Cross Blue Shield and MVP Health Care.

I urge the Board to cut these increases so health insurance coverage does not become less affordable for Vermonters.

Premiums continue to grow far faster than wages. Increasing these costs even more will put affordable health care out of reach for too many Vermonters.

Please cut these proposed rate increases so Vermonters can afford the coverage we need.

Sincerely,
Edward Heys

UNOFFICIAL COMMENT (Received post-decision)

Nancy Fogel
[redacted]

Jul 25, 2019

Green Mountain Care Board

Subject: Proposed BCBS and MVP Premium Increases

To Green Mountain Care Board,

I am writing to comment on the proposed premium increases for Vermont Health Connect plans from Blue Cross Blue Shield and MVP Health Care.

I urge the Board to cut these increases so health insurance coverage does not become less affordable for Vermonters.

Premiums continue to grow far faster than wages. Increasing these costs even more will put affordable health care out of reach for too many Vermonters.

Please cut these proposed rate increases so Vermonters can afford the coverage we need.

Sincerely,
Nancy Fogel

UNOFFICIAL COMMENT (Received post-decision)

Kurt Haigis
[redacted]

Jul 25, 2019

Green Mountain Care Board

Subject: Proposed BCBS and MVP Premium Increases

To Green Mountain Care Board,

I am writing to comment on the proposed premium increases for Vermont Health Connect plans from Blue Cross Blue Shield and MVP Health Care.

I urge the Board to cut these increases so health insurance coverage does not become less affordable for Vermonters.

Premiums continue to grow far faster than wages. Increasing these costs even more will put affordable health care out of reach for too many Vermonters.

Please cut these proposed rate increases so Vermonters can afford the coverage we need.

Sincerely,
Kurt Haigis

UNOFFICIAL COMMENT (Received post-decision)

Allison Lane
[redacted]

Jul 25, 2019

Green Mountain Care Board

Subject: Proposed BCBS and MVP Premium Increases

To Green Mountain Care Board,

I am writing to comment on the proposed premium increases for Vermont Health Connect plans from Blue Cross Blue Shield and MVP Health Care.

As a knowledgeable consumer of insurance, I see many places where costs could be reduced. For example University of Vermont Medical Center and affiliates are compensated approximately double for a physician visit. For other services such as blood work and imaging, they are compensated many times more than independent providers (2 to 10x more.) I am happy to provide specific examples. These insurers should share responsibility in keeping prices down as opposed to authorizing higher compensation to medical centers and then passing those costs on via premiums to the consumer. As a proactive consumer who does her research, I have still be subject to the high med center prices with no recourse.

This has got to stop! Health care is a not a privilege!

I urge the Board to cut these increases so health insurance coverage does not become less affordable for Vermonters.

Premiums continue to grow far faster than wages. Increasing these costs even more will put affordable health care out of reach for too many Vermonters.

Please cut these proposed rate increases so Vermonters can afford the coverage we need.

Sincerely,
Allison Lane

UNOFFICIAL COMMENT (Received post-decision)

Nancy Ambrose
[redacted]

Jul 25, 2019

Green Mountain Care Board

Subject: Proposed BCBS and MVP Premium Increases

To Green Mountain Care Board,

I am writing to comment on the proposed premium increases for Vermont Health Connect plans from Blue Cross Blue Shield and MVP Health Care.

I urge the Board to cut these increases so health insurance coverage does not become less affordable for Vermonters.

Premiums continue to grow far faster than wages. Increasing these costs even more will put affordable health care out of reach for too many Vermonters.

Please cut these proposed rate increases so Vermonters can afford the coverage we need.

Sincerely,
Nancy Ambrose

UNOFFICIAL COMMENT (Received post-decision)

Giocondo (Gio) Susini
[redacted]

Jul 25, 2019

Green Mountain Care Board

Subject: Proposed BCBS and MVP Premium Increases

To Green Mountain Care Board,

I am writing to comment on the proposed premium increases for Vermont Health Connect plans from Blue Cross Blue Shield and MVP Health Care.

I urge the Board to cut these increases so health insurance coverage does not become less affordable for Vermonters.

Premiums continue to grow far faster than wages. Increasing these costs even more will put affordable health care out of reach for too many Vermonters.

Please cut these proposed rate increases so Vermonters can afford the coverage we need.

Sincerely,
Giocondo (Gio) Susini

UNOFFICIAL COMMENT (Received post-decision)

Jonathan Kinnersley
[redacted]

Jul 25, 2019

Green Mountain Care Board

Subject: Proposed BCBS and MVP Premium Increases

To Green Mountain Care Board,

I am writing to comment on the proposed premium increases for Vermont Health Connect plans from Blue Cross Blue Shield and MVP Health Care.

I urge the Board to cut these increases so health insurance coverage does not become less affordable for Vermonters.

Premiums continue to grow far faster than wages. Increasing these costs even more will put affordable health care out of reach for too many Vermonters.

Please cut these proposed rate increases so Vermonters can afford the coverage we need.

Sincerely,
Jonathan Kinnersley

UNOFFICIAL COMMENT (Received post-decision)

Douglas Lufkin
[redacted]

Jul 25, 2019

Green Mountain Care Board

Subject: Proposed BCBS and MVP Premium Increases

To Green Mountain Care Board,

I am writing to comment on the proposed premium increases for Vermont Health Connect plans from Blue Cross Blue Shield and MVP Health Care.

I urge the Board to cut these increases so health insurance coverage to keep health care affordable for Vermonters.

Premiums continue to grow far faster than wages. Increasing these costs even more will put health care out of reach for too many Vermonters.

Please cut these proposed rate increases so Vermonters can afford the coverage we need.

Sincerely,
Douglas Lufkin

UNOFFICIAL COMMENT (Received post-decision)

Rick Ricard
[redacted]

Jul 25, 2019

Green Mountain Care Board

Subject: Proposed BCBS and MVP Premium Increases

To Green Mountain Care Board,

I am writing to comment on the proposed premium increases for Vermont Health Connect plans from Blue Cross Blue Shield and MVP Health Care.

I urge the Board to cut these increases so health insurance coverage does not become less affordable for Vermonters.

Premiums continue to grow far faster than wages. Increasing these costs even more will put affordable health care out of reach for too many Vermonters.

Please cut these proposed rate increases so Vermonters can afford the coverage we need.

Sincerely,
Rick Ricard

UNOFFICIAL COMMENT (Received post-decision)

Hayden Smith
[redacted]
[redacted]

Jul 25, 2019

Green Mountain Care Board

Subject: Proposed BCBS and MVP Premium Increases

To Green Mountain Care Board,

I am writing to comment on the proposed premium increases for Vermont Health Connect plans from Blue Cross Blue Shield and MVP Health Care.

I urge the Board to cut these increases so health insurance coverage does not become less affordable for Vermonters.

Premiums continue to grow far faster than wages. Increasing these costs even more will put affordable health care out of reach for too many Vermonters.

Please cut these proposed rate increases so Vermonters can afford the coverage we need.

Sincerely,
Hayden Smith

UNOFFICIAL COMMENT (Received post-decision)

Joshua Rome
[redacted]

Jul 25, 2019

Green Mountain Care Board

Subject: Proposed BCBS and MVP Premium Increases

To Green Mountain Care Board,

I am writing to comment on the proposed premium increases for Vermont Health Connect plans from Blue Cross Blue Shield and MVP Health Care.

I urge the Board to cut these increases so health insurance coverage does not become less affordable for Vermonters.

Premiums continue to grow far faster than wages. Increasing these costs even more will put affordable health care out of reach for too many Vermonters.

Please cut these proposed rate increases so Vermonters can afford the coverage we need.

Sincerely,
Joshua Rome

UNOFFICIAL COMMENT (Received post-decision)

Laura Biren
[redacted]

Jul 25, 2019

Green Mountain Care Board

Subject: Proposed BCBS and MVP Premium Increases

To Green Mountain Care Board,

I am writing to comment on the proposed premium increases for Vermont Health Connect plans from Blue Cross Blue Shield and MVP Health Care. I use MVP Health Care for my health insurance and am already shoveling out more than I feel comfortable each month in order to sustain enough health care coverage. I'm truly concerned that with these price increases I won't be able to afford the same health care coverage I can barely afford today.

I urge the Board to cut these increases so health insurance coverage does not become less affordable for Vermonters.

Premiums continue to grow far faster than wages. Increasing these costs even more will put affordable health care out of reach for too many Vermonters.

Please cut these proposed rate increases so Vermonters can afford the coverage we need.

Sincerely,
Laura Biren

UNOFFICIAL COMMENT (Received post-decision)

Peter Thoms
[redacted]

Jul 25, 2019

Green Mountain Care Board

Subject: Proposed BCBS and MVP Premium Increases

To Green Mountain Care Board,

I am writing to comment on the proposed premium increases for Vermont Health Connect plans from Blue Cross Blue Shield and MVP Health Care.

I urge the Board to cut these increases so health insurance coverage does not become less affordable for Vermonters.

Premiums continue to grow far faster than wages. Increasing these costs even more will put affordable health care out of reach for too many Vermonters.

Please cut these proposed rate increases so Vermonters can afford the coverage we need.

Moderate income Vermonters will be especially affected. Please look critically at these requests.

Thank you

Peter Thoms

Sincerely,
Peter Thoms

UNOFFICIAL COMMENT (Received post-decision)

Jonathan Fine
[redacted]

Jul 25, 2019

Green Mountain Care Board

Subject: Proposed BCBS and MVP Premium Increases

To Green Mountain Care Board,

I am writing to comment on the proposed premium increases for Vermont Health Connect plans from Blue Cross Blue Shield and MVP Health Care.

I urge the Board to cut these increases so health insurance coverage does not become less affordable for Vermonters.

Premiums continue to grow far faster than wages. Increasing these costs even more will put affordable health care out of reach for too many Vermonters.

Please cut these proposed rate increases so Vermonters can afford the coverage we need.

Sincerely,
Jonathan Fine

UNOFFICIAL COMMENT (Received post-decision)

Tonya Barnett
[redacted]

Jul 25, 2019

Green Mountain Care Board

Subject: Proposed BCBS and MVP Premium Increases

To Green Mountain Care Board,

I am writing to comment on the proposed premium increases for Vermont Health Connect plans from Blue Cross Blue Shield and MVP Health Care.

I urge the Board to cut these increases so health insurance coverage does not become less affordable for Vermonters.

Premiums continue to grow far faster than wages. Increasing these costs even more will put affordable health care out of reach for too many Vermonters.

Please cut these proposed rate increases so Vermonters can afford the coverage we need. It's already too expensive to afford health insurance. Too many people in need go without because it is too costly. Continuing to raise the cost of health insurance guarantees that only the wealthy will survive. It has become a disgusting game of survival of the wealthiest.

Sincerely,
Tonya Barnett

UNOFFICIAL COMMENT (Received post-decision)

michael jamieson
[redacted]

Jul 25, 2019

Green Mountain Care Board

Subject: Proposed BCBS and MVP Premium Increases

To Green Mountain Care Board,

I am writing to comment on the proposed premium increases for Vermont Health Connect plans from Blue Cross Blue Shield and MVP Health Care.

I urge the Board to cut these increases so health insurance coverage does not become less affordable for Vermonters.

Premiums continue to grow far faster than wages. Increasing these costs even more will put affordable health care out of reach for too many Vermonters.

Please cut these proposed rate increases so Vermonters can afford the coverage we need.

Sincerely,
michael jamieson

UNOFFICIAL COMMENT (Received post-decision)

Bradford Colyer
[redacted]

Jul 25, 2019

Green Mountain Care Board

Subject: Proposed BCBS and MVP Premium Increases

To Green Mountain Care Board,

I am writing to comment on the proposed premium increases for Vermont Health Connect plans from Blue Cross Blue Shield and MVP Health Care.

I understand that companies need to make a profit. However, the cost of carrying health insurance is getting out of control. Since Obama-care went into effect, my health insurance has gone form $746/Month to $1414/Month.

I do not support single payer health care, but allowing us small businesses to shop across state lines and or band together to buy insurance as a group to leverage our purchasing power would be good options. Currently we have no ability to negotiate, and we are being force fed rate increases.

Figure it out people!

Regards,

Brad Colyer

Sincerely,
Bradford Colyer

UNOFFICIAL COMMENT (Received post-decision)

Dennis Richardson
[redacted]

Jul 25, 2019

Green Mountain Care Board

Subject: Proposed BCBS and MVP Premium Increases

To Green Mountain Care Board,

I am writing to comment on the proposed premium increases for Vermont Health Connect plans from Blue Cross Blue Shield and MVP Health Care.

I urge the Board to cut these increases so health insurance coverage does not become less affordable for Vermonters.

Premiums continue to grow far faster than wages. Increasing these costs even more will put affordable health care out of reach for too many Vermonters.

Please cut these proposed rate increases so Vermonters can afford the coverage we need.

Sincerely,
Dennis Richardson

UNOFFICIAL COMMENT (Received post-decision)

Olivia Thompson
[redacted]

Jul 25, 2019

Green Mountain Care Board

Subject: Proposed BCBS and MVP Premium Increases

To Green Mountain Care Board,

I am writing to comment on the proposed premium increases for Vermont Health Connect plans from Blue Cross Blue Shield and MVP Health Care.

I urge the Board to cut these increases so health insurance coverage does not become less affordable for Vermonters.

Premiums continue to grow far faster than wages. Increasing these costs even more will put affordable health care out of reach for too many Vermonters.

Please cut these proposed rate increases so Vermonters can afford the coverage we need.

Sincerely,
Olivia Thompson

UNOFFICIAL COMMENT (Received post-decision)

Laura Ziegler
[redacted]

Jul 25, 2019

Green Mountain Care Board

Subject: Proposed BCBS and MVP Premium Increases

To Green Mountain Care Board,

I am writing to comment on the proposed premium increases for Vermont Health Connect plans from Blue Cross Blue Shield and MVP Health Care.

I urge the Board to cut these increases so health insurance coverage does not become less affordable for Vermonters. I am currently covered by Medicaid but have past experience of being working poor and living without any health care coverage. I've experienced the harm that can come from not being able to afford necessary medical care, and don't want to see others experience it.

Premiums continue to grow far faster than wages. Increasing these costs even more will put affordable health care out of reach for too many Vermonters. For some, it will cause irreparable harm.

Please cut these proposed rate increases so Vermonters can afford the coverage we need.

Sincerely,
Laura Ziegler

UNOFFICIAL COMMENT (Received post-decision)

Deb Baker
[redacted]

Jul 25, 2019

Green Mountain Care Board

Subject: Proposed BCBS and MVP Premium Increases

To Green Mountain Care Board,

I am writing to comment on the proposed premium increases for Vermont Health Connect plans from Blue Cross Blue Shield and MVP Health Care.

Have you folks even LOOKED at what the CEO and top executives are making in wages, bonus package and perks? Obscenely bloated pay packages should NOT be foisted on the backs of hard working Vermonters. Enough is enough!

I urge the Board to cut these increases so health insurance coverage does not become less affordable for Vermonters.

Premiums continue to grow far faster than wages. Increasing these costs even more will put affordable health care out of reach for too many Vermonters.

Please cut these proposed rate increases so Vermonters can afford the coverage we need.

Sincerely,
Deb Baker

UNOFFICIAL COMMENT (Received post-decision)

Maureen Lehouillier
[redacted]

Jul 25, 2019

Green Mountain Care Board

Subject: Proposed BCBS and MVP Premium Increases

To Green Mountain Care Board,

I am writing to comment on the proposed premium increases for Vermont Health Connect plans from Blue Cross Blue Shield and MVP Health Care.

I urge the Board to cut these increases so health insurance coverage does not become less affordable for Vermonters.

Premiums continue to grow far faster than wages. Increasing these costs even more will put affordable health care out of reach for too many Vermonters. I cannot afford my payment now! Something has to change with health care costs to Vermonters!

Please stop these proposed rate increases so Vermonters can afford the coverage we need.

Sincerely,
Maureen Lehouillier

UNOFFICIAL COMMENT (Received post-decision)

Emily Jackson
[redacted]
[redacted]

Jul 25, 2019

Green Mountain Care Board

Subject: Proposed BCBS and MVP Premium Increases

To Green Mountain Care Board,

I am writing to comment on the proposed premium increases for Vermont Health Connect plans from Blue Cross Blue Shield and MVP Health Care.

I urge the Board to cut these increases so health insurance coverage does not become less affordable for Vermonters.

Premiums continue to grow far faster than wages. Increasing these costs even more will put affordable health care out of reach for too many Vermonters.

Please cut these proposed rate increases so Vermonters can afford the coverage we need.

Sincerely,
Emily Jackson

UNOFFICIAL COMMENT (Received post-decision)

Olivia Boughton
[redacted]

Jul 25, 2019

Green Mountain Care Board

Subject: Proposed BCBS and MVP Premium Increases

To Green Mountain Care Board,

I am writing to comment on the proposed premium increases for Vermont Health Connect plans from Blue Cross Blue Shield and MVP Health Care.

These proposed rate hikes will make health care even more unaffordable for Vermonters. Plan premiums are already high, and health care becomes harder to afford with each passing year. I urge the Board to cut these increases so health insurance coverage does not become less affordable for Vermonters.

Premiums continue to grow far faster than wages. Increasing these costs even more will put affordable health care out of reach for too many Vermonters.

Please cut these proposed rate increases so Vermonters can afford the coverage we need.

Sincerely,
Olivia Boughton

UNOFFICIAL COMMENT (Received post-decision)

William White
[redacted]

Jul 25, 2019

Green Mountain Care Board

Subject: Proposed BCBS and MVP Premium Increases

To Green Mountain Care Board,

I am writing to comment on the proposed premium increases for Vermont Health Connect plans from Blue Cross Blue Shield and MVP Health Care.

I urge the Board to cut these increases so health insurance coverage does not become less affordable for Vermonters.

Premiums continue to grow far faster than wages. Increasing these costs even more will put affordable health care out of reach for too many Vermonters.

Please cut these proposed rate increases so Vermonters can afford the coverage we need.

Sincerely,
William White

UNOFFICIAL COMMENT (Received post-decision)

James Messier
[redacted]

Jul 25, 2019

Green Mountain Care Board

Subject: Proposed BCBS and MVP Premium Increases

To Green Mountain Care Board,

I am writing to comment on the proposed premium increases for Vermont Health Connect plans from Blue Cross Blue Shield and MVP Health Care.

I urge the Board to cut these increases so health insurance coverage does not become less affordable for Vermonters.

Premiums continue to grow far faster than wages. Increasing these costs even more will put affordable health care out of reach for too many Vermonters.

Please cut these proposed rate increases so Vermonters can afford the coverage we need.

Sincerely,
James Messier

UNOFFICIAL COMMENT (Received post-decision)

Alexander Morgan
[redacted]

Jul 25, 2019

Green Mountain Care Board

Subject: Proposed BCBS and MVP Premium Increases

To Green Mountain Care Board,

I am writing to oppose the proposed premium increases for Vermont Health Connect plans from Blue Cross Blue Shield and MVP Health Care.

I urge the Board to cut these increases so health insurance coverage does not become less affordable for Vermonters.

Premiums continue to grow far faster than wages. Increasing these costs even more will put affordable health care out of reach for too many Vermonters.

Please cut these proposed rate increases so Vermonters can afford the coverage we need.

Sincerely,
Alexander Morgan

UNOFFICIAL COMMENT (Received post-decision)

Catherine Lowther
[redacted]

Jul 25, 2019

Green Mountain Care Board

Subject: Proposed BCBS and MVP Premium Increases

To Green Mountain Care Board,

I am writing to comment on the proposed premium increases for Vermont Health Connect plans from Blue Cross Blue Shield and MVP Health Care.

I urge the Board to cut these increases so health insurance coverage does not become less affordable for Vermonters.

Premiums continue to grow far faster than wages. Increasing these costs even more will put affordable health care out of reach for too many Vermonters.

Please cut these proposed rate increases so Vermonters can afford the coverage we need.

Sincerely,
Catherine Lowther

UNOFFICIAL COMMENT (Received post-decision)

James Leopold
[redacted]

Jul 25, 2019

Green Mountain Care Board

Subject: Proposed BCBS and MVP Premium Increases

To Green Mountain Care Board,

I am writing to comment on the proposed premium increases for Vermont Health Connect plans from Blue Cross Blue Shield and MVP Health Care.

I urge the Board to cut these increases so health insurance coverage does not become less affordable for Vermonters.

Premiums continue to grow far faster than wages. Increasing these costs even more will put affordable health care out of reach for too many Vermonters.

Please cut these proposed rate increases so Vermonters can afford the coverage we need.

Sincerely,
James Leopold

UNOFFICIAL COMMENT (Received post-decision)

Jessica Eisenhauer
[redacted]
[redacted]

Jul 25, 2019

Green Mountain Care Board

Subject: Proposed BCBS and MVP Premium Increases

To Green Mountain Care Board,

I am writing to comment on the proposed premium increases for Vermont Health Connect plans from Blue Cross Blue Shield and MVP Health Care.

I urge the Board to cut these increases so health insurance coverage does not become less affordable for Vermonters.

Premiums continue to grow far faster than wages. Increasing these costs even more will put affordable health care out of reach for too many Vermonters.

Please cut these proposed rate increases so Vermonters can afford the coverage we need.

Sincerely,
Jessica Eisenhauer

UNOFFICIAL COMMENT (Received post-decision)

Douglas Patterson
[redacted]
[redacted]

Jul 25, 2019

Green Mountain Care Board

Subject: Proposed BCBS and MVP Premium Increases

To Green Mountain Care Board,

I am writing to comment on the proposed premium increases for Vermont Health Connect plans from Blue Cross Blue Shield and MVP Health Care.

I urge the Board to cut these increases so health insurance coverage does not become less affordable for Vermonters.

Premiums continue to grow far faster than wages. Increasing these costs even more will put affordable health care out of reach for too many Vermonters.

Please cut these proposed rate increases so Vermonters can afford the coverage we need.

The premium cost is just one component of the expensive health coverage in Vermont. A rate increase along with the high out of pocket, deductibles, and co-pays will make health insurance out of reach of most Vermonters especially those not covered through their employers.

Sincerely,
Douglas Patterson

UNOFFICIAL COMMENT (Received post-decision)

Carol Steingress
[redacted]

Jul 25, 2019

Green Mountain Care Board

Subject: Proposed BCBS and MVP Premium Increases

To Green Mountain Care Board,

I am writing to comment on the proposed premium increases for Vermont Health Connect plans from Blue Cross Blue Shield and MVP Health Care.

I have always been proud to see VT as a progressive State with affordable health care. Let's keep it that way for all Vermonters. Reject the premium increases or work with our health care providers to keep them at a minimum.

Thank you,
Carol Steingress

Sincerely,
Carol Steingress

UNOFFICIAL COMMENT (Received post-decision)

Jack Hanson
[redacted]
[redacted]

Jul 25, 2019

Green Mountain Care Board

Subject: Proposed BCBS and MVP Premium Increases

To Green Mountain Care Board,

I am writing to comment on the proposed premium increases for Vermont Health Connect plans from Blue Cross Blue Shield and MVP Health Care.

I urge the Board to cut these increases so health insurance coverage does not become less affordable for Vermonters.

Premiums continue to grow far faster than wages. Increasing these costs even more will put affordable health care out of reach for too many Vermonters.

Please cut these proposed rate increases so Vermonters can afford the coverage we need.

Sincerely,
Jack Hanson

UNOFFICIAL COMMENT (Received post-decision)

KATHERINE MAYNARD
[redacted]

Jul 25, 2019

Green Mountain Care Board

Subject: Proposed BCBS and MVP Premium Increases

To Green Mountain Care Board,

I am writing to comment on the proposed premium increases for Vermont Health Connect plans from Blue Cross Blue Shield and MVP Health Care.

I urge the Board to cut these increases so health insurance coverage does not become less affordable for Vermonters.

Premiums continue to grow far faster than wages. Increasing these costs even more will put affordable health care out of reach for too many Vermonters.

Please cut these proposed rate increases so Vermonters can afford the coverage we need.

Sincerely,
KATHERINE MAYNARD

UNOFFICIAL COMMENT (Received post-decision)

Erica Benoit
[redacted]

Jul 25, 2019

Green Mountain Care Board

Subject: Proposed BCBS and MVP Premium Increases

To Green Mountain Care Board,

I am writing to comment on the proposed premium increases for Vermont Health Connect plans from Blue Cross Blue Shield and MVP Health Care.

I urge the Board to cut these increases so health insurance coverage does not become less affordable for Vermonters.

Premiums continue to grow far faster than wages. Increasing these costs even more will put affordable health care out of reach for too many Vermonters.

Please cut these proposed rate increases so Vermonters can afford the coverage we need.

Sincerely,
Erica Benoit

UNOFFICIAL COMMENT (Received post-decision)

Rick Peyser
[redacted]

Jul 25, 2019

Green Mountain Care Board

Subject: Proposed BCBS and MVP Premium Increases

To Green Mountain Care Board,

I am writing to comment on the proposed premium increases for Vermont Health Connect plans from Blue Cross Blue Shield and MVP Health Care.

I urge the Board to cut these increases so health insurance coverage does not become less affordable for Vermonters.

Premiums continue to grow far faster than wages. Increasing these costs even more will put affordable health care out of reach for too many Vermonters.

Please cut these proposed rate increases so Vermonters can afford the coverage we need.

Sincerely,
Rick Peyser

UNOFFICIAL COMMENT (Received post-decision)

Emily Neilsen
[redacted]

Jul 25, 2019

Green Mountain Care Board

Subject: Proposed BCBS and MVP Premium Increases

To Green Mountain Care Board,

I am writing to comment on the proposed premium increases for Vermont Health Connect plans from Blue Cross Blue Shield and MVP Health Care.

I urge the Board to cut these increases so health insurance coverage does not become less affordable for Vermonters.

Premiums continue to grow far faster than wages. Increasing these costs even more will put affordable health care out of reach for too many Vermonters.

Please cut these proposed rate increases so Vermonters can afford the coverage we need.

Sincerely,
Emily Neilsen

UNOFFICIAL COMMENT (Received post-decision)

Dave Whittle
[redacted]

Jul 25, 2019

Green Mountain Care Board

Subject: Proposed BCBS and MVP Premium Increases

To Green Mountain Care Board,

I am writing to comment on the proposed premium increases for Vermont Health Connect plans from Blue Cross Blue Shield and MVP Health Care.

I urge the Board to cut these increases so health insurance coverage does not become less affordable for Vermonters.

Premiums continue to grow far faster than wages. Increasing these costs even more will put affordable health care out of reach for too many Vermonters.

Please cut these proposed rate increases so Vermonters can afford the coverage we need.

Sincerely,
Dave Whittle

UNOFFICIAL COMMENT (Received post-decision)

Robin Worn
[redacted]

Jul 25, 2019

Green Mountain Care Board

Subject: Proposed BCBS and MVP Premium Increases

To Green Mountain Care Board,

I am writing to comment on the proposed premium increases for Vermont Health Connect plans from Blue Cross Blue Shield and MVP Health Care.

I urge the Board to cut these increases so health insurance coverage does not become unaffordable for Vermonters.

Premiums continue to grow far faster than wages. Increasing these costs even more will put affordable health care out of reach for too many Vermonters.

Please cut these proposed rate increases so Vermonters can afford the coverage we need.

Sincerely,
Robin Worn

UNOFFICIAL COMMENT (Received post-decision)

Jean Hopkins
[redacted]

Jul 25, 2019

Green Mountain Care Board

Subject: Proposed BCBS and MVP Premium Increases

To Green Mountain Care Board,

I am writing to comment on the proposed premium increases for Vermont Health Connect plans from Blue Cross Blue Shield and MVP Health Care. It's going to hurt middle income families and young people who we need more of in Vermont.

I'm on Medicare, but my daughter's family is paying high premiums in Indiana. Is there any way you could encourage them to move to Vermont for better health?

This is another reason why we need universal single payer health care. I hope you know of all the effort being made by other states to bring about SP UHC. Look at NY. There are also so many groups of doctors, nurses and other professionals advocating for SP UHC. It's got to happen for a more caring country.

Sincerely,
Jean Hopkins

UNOFFICIAL COMMENT (Received post-decision)

Wendy hopkins
[redacted]

Jul 25, 2019

Green Mountain Care Board

Subject: Proposed BCBS and MVP Premium Increases

To Green Mountain Care Board,

I am writing to comment on the proposed premium increases for Vermont Health Connect plans from Blue Cross Blue Shield and MVP Health Care.

I urge the Board to cut these increases so health insurance coverage does not become less affordable for Vermonters.

I know you've heard all this many times already, but my husband and I are on fixed incomes and every dollar increase in our premiums means less for heat and food. Please, please help us to maintain the quality and comfort of our lives.

Please cut these proposed rate increases so all Vermonters can afford the coverage we need.

Sincerely,
Wendy hopkins

UNOFFICIAL COMMENT (Received post-decision)

Valerie Ducharme
[redacted]
[redacted]

Jul 25, 2019

Green Mountain Care Board

Subject: Proposed BCBS and MVP Premium Increases

To Green Mountain Care Board,

I am writing to comment on the proposed premium increases for Vermont Health Connect plans from Blue Cross Blue Shield and MVP Health Care.

I urge the Board to cut these increases so health insurance coverage does not become less affordable for Vermonters.

Premiums continue to grow far faster than wages. Increasing these costs even more will put affordable health care out of reach for too many Vermonters.

Please cut these proposed rate increases so Vermonters can afford the coverage we need.

Sincerely,
Valerie Ducharme

UNOFFICIAL COMMENT (Received post-decision)

Phyllis Marcell
[redacted]

Jul 25, 2019

Green Mountain Care Board

Subject: Proposed BCBS and MVP Premium Increases

To Green Mountain Care Board,

I am writing to comment on the proposed premium increases for Vermont Health Connect plans from Blue Cross Blue Shield and MVP Health Care.

I urge the Board to cut these increases so health insurance coverage does not become less affordable for Vermonters.

Premiums continue to grow far faster than wages. Increasing these costs even more will put affordable health care out of reach for too many Vermonters.

Please cut these proposed rate increases so Vermonters can afford the coverage we need.

Sincerely,
Phyllis Marcell

UNOFFICIAL COMMENT (Received post-decision)

Garret Hobart
[redacted]

Jul 25, 2019

Green Mountain Care Board

Subject: Proposed BCBS and MVP Premium Increases

To Green Mountain Care Board,

I am writing to comment on the proposed premium increases for Vermont Health Connect plans from Blue Cross Blue Shield and MVP Health Care.

I urge the Board to cut these increases so health insurance coverage does not become less affordable for Vermonters.

Premiums continue to grow far faster than wages. Increasing these costs even more will put affordable health care out of reach for too many Vermonters.

Please cut these proposed rate increases so Vermonters can afford the coverage we need.

Sincerely,
Garret Hobart

UNOFFICIAL COMMENT (Received post-decision)

Patricia Hedin
[redacted]

Jul 25, 2019

Green Mountain Care Board

Subject: Proposed BCBS and MVP Premium Increases

To Green Mountain Care Board,

I am writing to comment on the proposed premium increases for Vermont Health Connect plans from Blue Cross Blue Shield and MVP Health Care.

I urge the Board to cut these increases so health insurance coverage does not become less affordable for Vermonters.

Premiums continue to grow far faster than wages. Increasing these costs even more will put affordable health care out of reach for too many Vermonters.

Please cut these proposed rate increases so Vermonters can afford the coverage we need.

Sincerely,
Patricia Hedin

UNOFFICIAL COMMENT (Received post-decision)

Bethany Hill
[redacted]

Jul 25, 2019

Green Mountain Care Board

Subject: Proposed BCBS and MVP Premium Increases

To Green Mountain Care Board,

I am writing to comment on the proposed premium increases for Vermont Health Connect plans from Blue Cross Blue Shield and MVP Health Care.

I urge the Board to cut these increases so health insurance coverage does not become less affordable for Vermonters.

Premiums continue to grow far faster than wages. Increasing these costs even more will put affordable health care out of reach for too many Vermonters.

Please cut these proposed rate increases so Vermonters can afford the coverage we need.

Sincerely,
Bethany Hill

UNOFFICIAL COMMENT (Received post-decision)

Daniel Albert
[redacted]

Jul 25, 2019

Green Mountain Care Board

Subject: Proposed BCBS and MVP Premium Increases

To Green Mountain Care Board,

I am writing to comment on the proposed premium increases for Vermont Health Connect plans from Blue Cross Blue Shield and MVP Health Care.

I urge the Board to cut these increases so health insurance coverage does not become less affordable for Vermonters.

Premiums continue to grow far faster than wages. Increasing these costs even more will put affordable health care out of reach for too many Vermonters

Big Pharma's outrageous increases in the cost of prescription medication cannot justify these proposed premium hikes; indeed, such reasoning is not logical, it's tautological.

Please cut these proposed rate increases so Vermonters can afford the coverage we need.

Sincerely,
Daniel Albert

UNOFFICIAL COMMENT (Received post-decision)

Lauren Cohen
[redacted]

Jul 25, 2019

Green Mountain Care Board

Subject: Proposed BCBS and MVP Premium Increases

To Green Mountain Care Board,

I am writing to comment on the proposed premium increases for Vermont Health Connect plans from Blue Cross Blue Shield and MVP Health Care.

I would have to urge the Board to cut these increases so health insurance coverage does not become less affordable for Vermonters. Vermonters will be forced to leave the state or others will choose not to live in Vermont due to the increasing taxes, health care costs and availability.

Premiums continue to grow far faster than wages. My husband received a cost of living wage increase and at the same time the cost of our health care is now greater than the wage increase. We feel like we are treating water, and that is no way to live. Increasing these costs even more will put affordable health care out of reach for too many Vermonters.

It's understandable that the rate can not stay the same, however the proposed rate is unmanageable for the vast majority of Vermonters. Please cut these proposed rate increases so Vermonters can afford the coverage we need.
Sincerely,
Lauren

Sincerely,
Lauren Cohen

UNOFFICIAL COMMENT (Received post-decision)

Beth Fialko Casey
[redacted]

Jul 25, 2019

Green Mountain Care Board

Subject: Proposed BCBS and MVP Premium Increases

To Green Mountain Care Board,

Dear Board,

I am writing to comment on the proposed premium increases for Vermont Health Connect plans from Blue Cross Blue Shield and MVP Health Care.

I urge the Board to cut these increases so health insurance coverage does not become less affordable for Vermonters.

Premiums continue to grow far faster than wages. Increasing these costs even more will put affordable health care out of reach for too many Vermonters.

Please cut these proposed rate increases so Vermonters can afford the coverage we need.

Sincerely,
Beth Fialko Casey

UNOFFICIAL COMMENT (Received post-decision)

Eileen Siminger
[redacted]

Jul 25, 2019

Green Mountain Care Board

Subject: Proposed BCBS and MVP Premium Increases

To Green Mountain Care Board,

I am writing to comment on the proposed premium increases for Vermont Health Connect plans from Blue Cross Blue Shield and MVP Health Care.

I urge the Board to cut these increases so health insurance coverage does not become less affordable for Vermonters.

Premiums continue to grow far faster than wages. Increasing these costs even more will put affordable health care out of reach for too many Vermonters.

Please cut these proposed rate increases so Vermonters can afford the coverage we need. I am a retired teacher who worked hard my whole career and I cannot afford these continuous rate increases in my health insurance. Instead of these large rate increases, BCBS should focus on ways to be more efficient as well as changing the broken health care system. They could be good advocates for their customers rather than participants in a badly broken system.

Sincerely,
Eileen Siminger

UNOFFICIAL COMMENT (Received post-decision)

Calvin Farwell
[redacted]

Jul 25, 2019

Green Mountain Care Board

Subject: Proposed BCBS and MVP Premium Increases

To Green Mountain Care Board,

I've just heard that BCBS has applied for an increase of over 15% in the premiums for my health care insurance. Since this increase is considerably larger than the typical CPI-based COLA's for both my Social Security income and my VSTRS pension, I am naturally very concerned about this proposed premium increase. Effectively, this increase would be a decrease in my disposable income, where I, and most other Vermont retirees, have relatively little elasticity.

Please study the proposed increase with utmost scrutiny. Of course, if the proposed increase is coupled with a corresponding increase or improvement in the service and/or coverage provided by BCBS, I would be happy to pay for that increase or improvement. However, if this is not the case, please reject BCBS's proposed premium increase, and reduce it to something closer to our CPI-based COLA's.

Thanks for your careful consideration of this issue.

Sincerely,
Calvin Farwell

UNOFFICIAL COMMENT (Received post-decision)

Frederick Mckenny
[redacted]

Jul 25, 2019

Green Mountain Care Board

Subject: Proposed BCBS and MVP Premium Increases

To Green Mountain Care Board,

I am writing to comment on the proposed premium increases for Vermont Health Connect plans from Blue Cross Blue Shield and MVP Health Care.

I urge the Board to cut these increases so health insurance coverage does not become less affordable for Vermonters.

Premiums continue to grow far faster than wages. Increasing these costs even more will put affordable health care out of reach for too many Vermonters.

Please cut these proposed rate increases so Vermonters can afford the coverage we need.

Sincerely,
Frederick Mckenny

UNOFFICIAL COMMENT (Received post-decision)

Karin Shearer
[redacted]

Jul 25, 2019

Green Mountain Care Board

Subject: Proposed BCBS and MVP Premium Increases

To Green Mountain Care Board,

I am writing to comment on the proposed premium increases for Vermont Health Connect plans from Blue Cross Blue Shield and MVP Health Care.

I urge the Board to cut these increases so health insurance coverage does not become less affordable for Vermonters.

Insurance coverage is already limited in addressing the needs of subscribers, with large deductibles, excluded services, and refusal to pay for providers who choose not to join as "preferred", meaning that they choose to remain independent of insurance oversight in their practice. If the one reason subscribers have for joining Vermont Health Connect is removed by Blue Cross and MVP being allowed to raise rates, there will be no purpose whatsoever in being part of this system.

Please cut these proposed rate increases so Vermonters can afford the coverage we need.

Sincerely,
Karin Shearer

UNOFFICIAL COMMENT (Received post-decision)

Juliet Cuming
[redacted]

Jul 25, 2019

Green Mountain Care Board

Subject: Proposed BCBS and MVP Premium Increases

To Green Mountain Care Board,

I am writing to comment on the proposed premium increases for Vermont Health Connect plans from Blue Cross Blue Shield and MVP Health Care.

I urge the Board to cut these increases so health insurance coverage does not become less affordable for Vermonters.

Premiums continue to grow far faster than wages. Increasing these costs even more will put affordable health care out of reach for too many Vermonters.

Please cut these proposed rate increases so Vermonters can afford the coverage we need.

Sincerely,
Juliet Cuming

UNOFFICIAL COMMENT (Received post-decision)

Nancy McKeegan
[redacted]

Jul 25, 2019

Green Mountain Care Board

Subject: Proposed BCBS and MVP Premium Increases

To Green Mountain Care Board,

I am writing to comment on the proposed premium increases for Vermont Health Connect plans from Blue Cross Blue Shield and MVP Health Care.

I urge the Board to cut these increases so health insurance coverage does not become less affordable for Vermonters.

Premiums continue to grow far faster than wages. Increasing these costs even more will put affordable health care out of reach for too many Vermonters.

Please cut these proposed rate increases so Vermonters can afford the coverage we need.

Sincerely,
Nancy McKeegan

UNOFFICIAL COMMENT (Received post-decision)

Travis Beto
[redacted]

Jul 25, 2019

Green Mountain Care Board

Subject: BCBS and MVP Premium Increases

To Green Mountain Care Board,

I'm writing to urge the board to do whatever is within its power to keep health insurance rates to as close as they currently are despite BCBS and MVP's request at raising them.

I dont think I need to go further than saying you know the consequences of rising health care costs - on an individual level as well as systemically to our economy. Do what's right.

Respectfully,

Travis Beto

Sincerely,
Travis Beto

UNOFFICIAL COMMENT (Received post-decision)

Cheryl Gebeault
[redacted]

Jul 25, 2019

Green Mountain Care Board

Subject: Proposed BCBS and MVP Premium Increases

To Green Mountain Care Board,

I am writing to comment on the proposed premium increases for Vermont Health Connect plans from Blue Cross Blue Shield and MVP Health Care.

I urge the Board to cut these increases so health insurance coverage does not become less affordable for Vermonters.

Premiums continue to grow far faster than wages. Increasing these costs even more will put affordable health care out of reach for too many Vermonters.

Please cut these proposed rate increases so Vermonters can afford the coverage we need. Because of the ridiculous biweekly amount that comes out of my wages already, I can barely make ends meet. Medical insurance is crucial at this phase of my life and according to the government I make too much money for any state coverage or assistance with healthcare.

Sincerely,
Cheryl Gebeault

UNOFFICIAL COMMENT (Received post-decision)

Melissa Nowers
[redacted]

Jul 25, 2019

Green Mountain Care Board

Subject: Proposed BCBS and MVP Premium Increases

To Green Mountain Care Board,

I am writing to comment on the proposed premium increases for Vermont Health Connect plans from Blue Cross Blue Shield and MVP Health Care.

I urge the Board to cut these increases so health insurance coverage does not become less affordable for Vermonters.

Premiums continue to grow far faster than wages. Increasing these costs even more will put affordable health care out of reach for too many Vermonters.

Please cut these proposed rate increases so Vermonters can afford the coverage we need.

Sincerely,
Melissa Nowers

UNOFFICIAL COMMENT (Received post-decision)

Dana Caspersen
[redacted]

Jul 25, 2019

Green Mountain Care Board

Subject: Proposed BCBS and MVP Premium Increases

To Green Mountain Care Board,

I'm concerned about building affordable health care possibilities for everyone in Vermont, and I am writing to comment on the proposed premium increases for Vermont Health Connect plans from Blue Cross Blue Shield and MVP Health Care.

I urge the Board to cut these increases so health insurance coverage does not become less affordable for Vermonters.

Premiums continue to grow far faster than wages. Increasing these costs even more will put affordable health care out of reach for too many Vermonters.

Please cut these proposed rate increases so Vermonters can afford the coverage we need.

Sincerely,
Dana Caspersen

UNOFFICIAL COMMENT (Received post-decision)

Jenny Burtis
[redacted]

Jul 25, 2019

Green Mountain Care Board

Subject: Proposed BCBS and MVP Premium Increases

To Green Mountain Care Board,

I am writing to comment on the proposed premium increases for Vermont Health Connect plans from Blue Cross Blue Shield and MVP Health Care.

I urge the Board to cut these increases so health insurance coverage does not become less affordable for Vermonters.

Premiums continue to grow far faster than wages. Increasing these costs even more will put affordable health care out of reach for too many Vermonters.

Please cut these proposed rate increases so Vermonters can afford the coverage we need.

Sincerely,
Jenny Burtis

UNOFFICIAL COMMENT (Received post-decision)

Thomas Tintle
[redacted]

Jul 25, 2019

Green Mountain Care Board

Subject: Proposed BCBS and MVP Premium Increases

To Green Mountain Care Board,

I am writing to comment on the proposed premium increases for Vermont Health Connect plans from Blue Cross Blue Shield and MVP Health Care.

I urge the Board to cut these increases so health insurance coverage does not become less affordable for Vermonters.

Premiums continue to grow far faster than wages. Increasing these costs even more will put affordable health care out of reach for too many Vermonters.

Please cut these proposed rate increases so Vermonters can afford the coverage we need.

Sincerely,
Thomas Tintle

UNOFFICIAL COMMENT (Received post-decision)

Anne Jameson
[redacted]

Jul 25, 2019

Green Mountain Care Board

Subject: Proposed BCBS and MVP Premium Increases

To Green Mountain Care Board,

I am writing to comment on the proposed premium increases for Vermont Health Connect plans from Blue Cross Blue Shield and MVP Health Care.

I urge the Board to cut these increases so health insurance coverage does not become less affordable for Vermonters.

Premiums continue to grow far faster than wages. Increasing these costs even more will put affordable health care out of reach for too many Vermonters.

Please cut these proposed rate increases so Vermonters can afford the coverage we need.

Sincerely,
Anne Jameson

UNOFFICIAL COMMENT (Received post-decision)

Susan Dorn
[redacted]

Jul 25, 2019

Green Mountain Care Board

Subject: Proposed BCBS and MVP Premium Increases

To Green Mountain Care Board,

I am writing to comment on the proposed premium increases for Vermont Health Connect plans from Blue Cross Blue Shield and MVP Health Care.

I urge the Board to cut these increases so health insurance coverage does not become less affordable for Vermonters.

Premiums continue to grow far faster than wages. Increasing these costs even more will put affordable health care out of reach for too many Vermonters. Not only are the premiums increasing, but the coverages are being reduced too. Many times, the reduction is hidden. The customer service at these institutions have also become onerous. It used to be a pleasure dealing with BCBS customer service. Now, they are miserable to deal with and unreasonably adhere to their policies.

Please cut these proposed rate increases so Vermonters can afford the coverage we need.
These insurance companies always ask for more than they need because they know they will get push back.
Additionally, I have never seen any impetus on part of the Insurance Industry to reduce health care costs. They are very powerful. Let's use them to make a difference for all of us. Squeeze them and squeeze them hard. Reduce the administrative % they are allowed to make every year, in addition to denying their increase.

Thank you for your time.

Sincerely,
Susan Dorn

UNOFFICIAL COMMENT (Received post-decision)

Burma Cassidy
[redacted]
[redacted]

Jul 25, 2019

Green Mountain Care Board

Subject: Proposed BCBS and MVP Premium Increases

To Green Mountain Care Board,

I am a 75 year old retired Vermonter writing to comment on the proposed premium increases for Vermont Health Connect plans from Blue Cross Blue Shield and MVP Health Care.

I urge the Board to cut these increases so health insurance coverage does not become less affordable for Vermonters.

Premiums continue to grow far faster than wages. Increasing these costs even more will put affordable health care out of reach for too many Vermonters.

Please cut these proposed rate increases so Vermonters can afford the coverage we need.

Sincerely,
Burma Cassidy

UNOFFICIAL COMMENT (Received post-decision)

Katharine Neilsen
[redacted]

Jul 25, 2019

Green Mountain Care Board

Subject: Proposed BCBS and MVP Premium Increases

To Green Mountain Care Board,

I am writing to comment on the proposed premium increases for Vermont Health Connect plans from Blue Cross Blue Shield and MVP Health Care.

I urge the Board to cut these increases. These costs have a real impact on Vermont families, including ours. I am lucky to have Medicare and a supplement; my daughter and her family is not as fortunate. Her family is already kept in the margins due to the cost of her insurance and an increase in premiums will make her situation worse. Health care must be seen as a basic and affordable right.

Thank you,
Katharine Neilsen

Sincerely,
Katharine Neilsen

UNOFFICIAL COMMENT (Received post-decision)

JoAnn Hanowski
[redacted]

Jul 25, 2019

Green Mountain Care Board

Subject: Proposed BCBS and MVP Premium Increases

To Green Mountain Care Board,

I am writing to comment on the proposed premium increases for Vermont Health Connect plans from Blue Cross Blue Shield and MVP Health Care.

I urge the Board to cut these increases so health insurance coverage does not become less affordable for Vermonters.

Premiums continue to grow far faster than wages. Increasing these costs even more will put affordable health care out of reach for too many Vermonters.

Please cut these proposed rate increases so Vermonters can afford the coverage we need.

Sincerely,
JoAnn Hanowski

UNOFFICIAL COMMENT (Received post-decision)

Gregory Chase
[redacted]

Jul 25, 2019

Green Mountain Care Board

Subject: Proposed BCBS and MVP Premium Increases

To Green Mountain Care Board,

Since my retirement in April of 2019, We have been paying for my wife's health care insurance through Vermont Health Connect to the tune of $650 per month, this on top of the Medicare premiums for my own coverage. Allowing an increase in the cost of plans available through Vermont Health Connect by the amount requested would put our financial health at risk, as I'm sure it would for many other Vermonters. I am asking you, the Green Mountain Care Board, to deny, or at least severely limit, the requested increases.

Sincerely,
Gregory Chase

Sincerely,
Gregory Chase

UNOFFICIAL COMMENT (Received post-decision)

Lori Dubreuil
[redacted]

Jul 25, 2019

Green Mountain Care Board

Subject: Proposed BCBS and MVP Premium Increases

To Green Mountain Care Board,

I am writing to comment on the proposed premium increases for Vermont Health Connect plans from Blue Cross Blue Shield and MVP Health Care.

I urge the Board to cut these increases so health insurance coverage does not become less affordable for Vermonters.

Premiums continue to grow far faster than wages. Increasing these costs even more will put affordable health care out of reach for too many Vermonters.

Please cut these proposed rate increases so Vermonters can afford the coverage we need.

Sincerely,
Lori Dubreuil

UNOFFICIAL COMMENT (Received post-decision)

Alex Lehning
[redacted]
[redacted]

Jul 25, 2019

Green Mountain Care Board

Subject: Proposed BCBS and MVP Premium Increases

To Green Mountain Care Board,

I am writing to comment on the proposed premium increases for Vermont Health Connect plans from Blue Cross Blue Shield and MVP Health Care of 15.6% and 11%, respectively.

I urge the Board to cut these increases so health insurance coverage does not become less affordable for Vermonters, including those most vulnerable. Premiums continue to far outpace wages. Increasing these costs even more will put affordable health care out of reach for too many of our neighbors, friends, and family members.

I urge you to please cut these proposed rate increases so Vermonters can afford the coverage we need. Thank you for considering my comment.

Sincerely,
Alex Lehning

UNOFFICIAL COMMENT (Received post-decision)

Ivan Johnson
[redacted]

Jul 25, 2019

Green Mountain Care Board

Subject: Proposed BCBS and MVP Premium Increases

To Green Mountain Care Board,

I am writing to comment on the proposed premium increases for Vermont Health Connect plans from Blue Cross Blue Shield and MVP Health Care.

I urge the Board to cut these increases so health insurance coverage does not become less affordable for Vermonters.

Premiums continue to grow far faster than wages. Increasing these costs even more will put affordable health care out of reach for too many Vermonters.

Please cut these proposed rate increases so Vermonters can afford the coverage we need.

Sincerely,
Ivan Johnson

UNOFFICIAL COMMENT (Received post-decision)

Laura McClure
[redacted]
[redacted]

Jul 25, 2019

Green Mountain Care Board

Subject: Proposed BCBS and MVP Premium Increases

To Green Mountain Care Board,

I am writing to comment on the proposed premium increases for Vermont Health Connect plans from Blue Cross Blue Shield and MVP Health Care.

I urge the Board to cut these increases so health insurance coverage does not become less affordable for Vermonters.

Premiums continue to grow far faster than wages. Increasing these costs even more will put affordable health care out of reach for too many Vermonters.

Please cut these proposed rate increases so Vermonters can afford the coverage we need.

Sincerely,
Laura McClure

UNOFFICIAL COMMENT (Received post-decision)

KATHRYN SCHENKMAN
[redacted]

Jul 25, 2019

Green Mountain Care Board

Subject: Proposed BCBS and MVP Premium Increases

To Green Mountain Care Board,

I urge the Board to cut the proposed premium increases for Vermont Health Connect plans from Blue Cross Blue Shield and MVP Health Care.

Premiums in Vermont are increasing unreasonably, and far faster than wages. Increasing these costs put health care coverage beyond what too many Vermonters can afford.

As it is, our BCBS annual deductibles make us think twice before even seeking medical attention, despite having BCBS Gold insurance coverage.

I urge the Board to keep health insurance affordable for Vermonters.

Sincerely,
Kathryn Schenkman

Sincerely,
KATHRYN SCHENKMAN

UNOFFICIAL COMMENT (Received post-decision)

Julie Fago, MD
[redacted]

Jul 25, 2019

Green Mountain Care Board

Subject: Proposed BCBS and MVP Premium Increases

To Green Mountain Care Board,

I am writing to comment on the proposed premium increases for Vermont Health Connect plans from Blue Cross Blue Shield and MVP Health Care.

I urge the Board to cut these increases so health insurance coverage does not become less affordable for Vermonters.

Premiums continue to grow far faster than wages. Increasing these costs even more will put affordable health care out of reach for too many Vermonters.

Please cut these proposed rate increases so Vermonters can afford the coverage we need.

Sincerely,
Julie Fago, MD

UNOFFICIAL COMMENT (Received post-decision)

Ron Jewett
[redacted]

Jul 25, 2019

Green Mountain Care Board

Subject: Proposed BCBS and MVP Premium Increases

To Green Mountain Care Board,

I am writing to comment on the proposed premium increases for Vermont Health Connect plans from Blue Cross Blue Shield and MVP Health Care.

I urge the Board to cut these increases so health insurance coverage does not become less affordable for Vermonters.

Premiums continue to grow far faster than wages. Increasing these costs even more will put affordable health care out of reach for too many Vermonters.

Please cut these proposed rate increases so Vermonters can afford the coverage we need.

Sincerely,
Ron Jewett

UNOFFICIAL COMMENT (Received post-decision)

Jenna Khan
[redacted]

Jul 25, 2019

Green Mountain Care Board

Subject: Proposed BCBS and MVP Premium Increases

To Green Mountain Care Board,

I am writing to comment on the proposed premium increases for Vermont Health Connect plans from Blue Cross Blue Shield and MVP Health Care.

I urge the Board to cut these increases so health insurance coverage does not become less affordable for Vermonters.

Premiums continue to grow far faster than wages. Increasing these costs even more will put affordable health care out of reach for too many Vermonters.

Please cut these proposed rate increases so Vermonters can afford the coverage we need.

Costs are already too expensive for most people. As a doctor I know that it will cost the you and the healthcare system more if people don't have health insurance to access primary and preventive care.

Sincerely,
Jenna Khan

UNOFFICIAL COMMENT (Received post-decision)

Sylvia Knight
[redacted]

Jul 25, 2019

Green Mountain Care Board

Subject: Proposed BCBS and MVP Premium Increases

To Green Mountain Care Board,

I am writing to comment on the proposed premium increases for Vermont Health Connect plans from Blue Cross Blue Shield and MVP Health Care.

I sincerely urge the Board to cut these increases so health insurance coverage does not become less affordable or out of reach for Vermonters.

Premiums continue to grow far faster than wages. Please tell me, whose salary is going up 15.6% this year? Increasing these costs even more will put affordable health care out of reach for too many Vermonters.

Please cut these proposed rate increases so Vermonters can afford the coverage we need.

Sincerely,
Sylvia Knight

UNOFFICIAL COMMENT (Received post-decision)

Joanne Blanchard
[redacted]

Jul 25, 2019

Green Mountain Care Board

Subject: Proposed BCBS and MVP Premium Increases

To Green Mountain Care Board,

I am writing to comment on the proposed premium increases for Vermont Health Connect plans from Blue Cross Blue Shield and MVP Health Care.

I urge the Board to cut these increases so health insurance coverage does not become less affordable for Vermonters.

Premiums continue to grow far faster than wages. Increasing these costs even more will put affordable health care out of reach for too many Vermonters.

Please cut these proposed rate increases so Vermonters can afford the coverage we need. My deductible is as high as I can tolerate right now. I chose that plan because lower premiums made that livable. Couple it with an increase in premiums, though, and something's got to give.

My employer has found a way to cover many of the increases in premiums over the years. When that is no longer possible, the affordability of living in Chittenden County will decrease. That will mean moving out of the city and increasing commute time and fuel use. The ripple effect of this increase is far greater than just higher healthcare cost.

Sincerely,
Joanne Blanchard

UNOFFICIAL COMMENT (Received post-decision)

Greg Tucker
[redacted]

Jul 25, 2019

Green Mountain Care Board

Subject: Proposed BCBS and MVP Premium Increases

To Green Mountain Care Board,

I am writing to comment on the proposed premium increases for Vermont Health Connect plans from Blue Cross Blue Shield and MVP Health Care.

I urge the Board to cut these increases so health insurance coverage does not become less affordable for Vermonters.

Premiums continue to grow far faster than wages. Increasing these costs even more will put affordable health care out of reach for too many Vermonters.

Please cut these proposed rate increases so Vermonters can afford the coverage we need.

Sincerely,
Greg Tucker

UNOFFICIAL COMMENT (Received post-decision)

John Leddy
[redacted]

Jul 25, 2019

Green Mountain Care Board

Subject: Proposed BCBS and MVP Premium Increases

To Green Mountain Care Board,

I am writing to comment on the proposed premium increases for Vermont Health Connect plans from Blue Cross Blue Shield and MVP Health Care.

I urge the Board to cut these increases so health insurance coverage does not become less affordable for Vermonters.

Premiums continue to grow far faster than wages. Increasing these costs even more will put affordable health care out of reach for too many Vermonters.

Please cut these proposed rate increases so Vermonters can afford the coverage we need.

Sincerely,
John Leddy

UNOFFICIAL COMMENT (Received post-decision)

William "Woody" Dugan
[redacted]

Jul 25, 2019

Green Mountain Care Board

Subject: Proposed BCBS and MVP Premium Increases

To Green Mountain Care Board,

I am writing to comment on the proposed premium increases for Vermont Health Connect plans from Blue Cross Blue Shield and MVP Health Care.

I urge the Board to cut these increases so health insurance coverage does not become less affordable for Vermonters.

Premiums continue to grow far faster than wages. Increasing these costs even more will put affordable health care out of reach for too many Vermonters.

Please cut these proposed rate increases so Vermonters can afford the coverage we need.

Sincerely,
William "Woody" Dugan

UNOFFICIAL COMMENT (Received post-decision)

John Benjamin
[redacted]
[redacted]

Jul 25, 2019

Green Mountain Care Board

Subject: Proposed BCBS and MVP Premium Increases

To Green Mountain Care Board,

I am writing to comment on the proposed premium increases for Vermont Health Connect plans from Blue Cross Blue Shield and MVP Health Care.

I urge the Board to cut these increases so health insurance coverage does not become less affordable for Vermonters.

Premiums continue to grow far faster than wages. Increasing these costs even more will put affordable health care out of reach for too many Vermonters.

Please cut these proposed rate increases so Vermonters can afford the coverage we need.

Sincerely,
John Benjamin

UNOFFICIAL COMMENT (Received post-decision)

Miriam Pendleton
[redacted]

Jul 25, 2019

Green Mountain Care Board

Subject: Proposed BCBS and MVP Premium Increases

To Green Mountain Care Board,

Calling BCBS through Vermont Health connect "affordable" is a stretch at the present time. I can't imagine how people using VT Health Connect will be able to continue having health insurance if the proposed increases are approved by The Green Mountain Care Board.

Please bear this in mind before granting the proposed rate increases. We could all be driving Teslas at these prices!

Sincerely,
Miriam Pendleton

UNOFFICIAL COMMENT (Received post-decision)

Irene Dagesse
[redacted]

Jul 25, 2019

Green Mountain Care Board

Subject: Proposed BCBS and MVP Premium Increases

To Green Mountain Care Board,

I am writing to comment on the proposed premium increases for Vermont Health Connect plans from Blue Cross Blue Shield and MVP Health Care.

I urge the Board to cut these increases so health insurance coverage does not become less affordable for Vermonters.

Premiums continue to grow far faster than wages. Increasing these costs even more will put affordable health care out of reach for too many Vermonters.

Please cut these proposed rate increases so Vermonters can afford the coverage we need.

Sincerely,
Irene Dagesse

UNOFFICIAL COMMENT (Received post-decision)

Patricia Heather-Lea
[redacted]

Jul 25, 2019

Green Mountain Care Board

Subject: Proposed BCBS and MVP Premium Increases

To Green Mountain Care Board,

Our income is NOT increasing at the same percentage rate that Blue Cross/ Blue Shield is requesting that rates increase. Where is the money supposed to come from? What is the salary of the CEO of Blue Cross /Blue Shield? Our salaries do not match. I have been told that they are non-profit. I disagree.

I am writing to comment on the proposed premium increases for Vermont Health Connect plans from Blue Cross Blue Shield and MVP Health Care.

I urge the Board to cut these increases so health insurance coverage does not become less affordable for Vermonters.

Premiums continue to grow far faster than wages. Increasing these costs even more will put affordable health care out of reach for too many Vermonters.

Please cut these proposed rate increases so Vermonters can afford the coverage we need.

Sincerely,
Patricia Heather-Lea

UNOFFICIAL COMMENT (Received post-decision)

Cheryl Vincent
[redacted]

Jul 25, 2019

Green Mountain Care Board

Subject: Proposed BCBS and MVP Premium Increases

To Green Mountain Care Board,

I am writing to comment on the proposed premium increases for Vermont Health Connect plans from Blue Cross Blue Shield and MVP Health Care.

I urge the Board to cut these increases so health insurance coverage does not become less affordable for Vermonters.

Premiums continue to grow far faster than wages. Increasing these costs even more will put affordable health care out of reach for too many Vermonters.

Please cut these proposed rate increases so Vermonters can afford the coverage we need.

Sincerely,
Cheryl Vincent

UNOFFICIAL COMMENT (Received post-decision)

Christine Hartman
[redacted]

Jul 25, 2019

Green Mountain Care Board

Subject: Proposed BCBS and MVP Premium Increases

To Green Mountain Care Board,

I am writing to comment on the proposed premium increases for Vermont Health Connect plans from Blue Cross Blue Shield and MVP Health Care.

I urge the Board to cut these increases so health insurance coverage does not become less affordable for Vermonters. Medical costs are overwhelming for so many already.

Premiums continue to grow far faster than wages. Increasing these costs even more will put affordable health care out of reach for too many Vermonters.

Please cut these proposed rate increases so Vermonters can afford the coverage we need.

Sincerely,
Christine Hartman

UNOFFICIAL COMMENT (Received post-decision)

Sara Robedee
[redacted]

Jul 25, 2019

Green Mountain Care Board

Subject: Proposed BCBS and MVP Premium Increases

To Green Mountain Care Board,

I am writing to comment on the proposed premium increases for Vermont Health Connect plans from Blue Cross Blue Shield and MVP Health Care.

I urge the Board to cut these increases so health insurance coverage does not become less affordable for Vermonters.

Premiums continue to grow far faster than wages. Increasing these costs even more will put affordable health care out of reach for too many Vermonters.

Please cut these proposed rate increases so Vermonters can afford the coverage we need.

Sincerely,
Sara Robedee

UNOFFICIAL COMMENT (Received post-decision)

Barbara Wynroth
[redacted]

Jul 25, 2019

Green Mountain Care Board

Subject: Proposed BCBS and MVP Premium Increases

To Green Mountain Care Board,

I am writing to comment on the proposed premium increases for Vermont Health Connect plans from Blue Cross Blue Shield and MVP Health Care.

I urge the Board to cut these increases so health insurance coverage does not become less affordable for Vermonters.

Premiums continue to grow far faster than wages. Increasing these costs even more will put affordable health care out of reach for too many Vermonters.

Please cut these proposed rate increases so Vermonters can afford the coverage we need.

Sincerely,
Barbara Wynroth

UNOFFICIAL COMMENT (Received post-decision)

Julia Etter
[redacted]

Jul 25, 2019

Green Mountain Care Board

Subject: Proposed BCBS and MVP Premium Increases

To Green Mountain Care Board,

I am writing to comment on the proposed premium increases for Vermont Health Connect plans from Blue Cross Blue Shield and MVP Health Care.

Please reduce that rate hikes and instead, focus on finding out of the box solutions for the areas that cost Vermonters most in healthcare. Can we reduce employee turnover so training costs are less? Can we have more urgent care centers, public or private, open in remote areas to reduce strain on ED personnel and resources? Can we recruit citizen volunteers for certain tasks? CAN WE MAYBE, JUST MAYBE, NOT ALLOW THE BOARD OF BCBS & MVP TO GIVE THEMSELVES HUGE RAISES AND BONUSES???

I am a mother of two in my early 30s in the midst of starting a farming business. I am the precise demographic politicians all over this state are howling about losing. Along with the tax burden, rate hikes on my healthcare - which is essential in my dangerous occupation- makes my goals untenable. If you are asking for more money out of my pocket then board members of these multi-million dollar "nonprofits" need not set their own salaries.

Premiums continue to grow far faster than wages. Increasing these costs even more will put affordable health care out of reach for too many Vermonters.

Please cut these proposed rate increases so Vermonters can afford the coverage we need.

Sincerely,
Julia Etter

UNOFFICIAL COMMENT (Received post-decision)

Leeds Brewer
[redacted]
[redacted]

Jul 25, 2019

Green Mountain Care Board

Subject: Proposed BCBS and MVP Premium Increases

To Green Mountain Care Board,

I am writing to comment on the proposed premium increases for Vermont Health Connect plans from Blue Cross Blue Shield and MVP Health Care.

I urge the Board to cut these increases so health insurance coverage does not become less affordable for Vermonters.

Premiums continue to grow far faster than wages. Increasing these costs even more will put affordable health care out of reach for too many Vermonters.

Please cut these proposed rate increases so Vermonters can afford the coverage we need.

Sincerely,
Leeds Brewer

UNOFFICIAL COMMENT (Received post-decision)

Jeffrey Phillips
[redacted]

Jul 25, 2019

Green Mountain Care Board

Subject: Proposed BCBS and MVP Premium Increases

To Green Mountain Care Board,

I am writing to comment on the proposed premium increases for Vermont Health Connect plans from Blue Cross Blue Shield and MVP Health Care.

I urge the Board to cut these increases so health insurance coverage does not become less affordable for Vermonters.

Premiums continue to grow far faster than wages. Increasing these costs even more will put affordable health care out of reach for too many Vermonters.

Please cut these proposed rate increases so Vermonters can afford the coverage we need.

Sincerely,
Jeffrey Phillips

UNOFFICIAL COMMENT (Received post-decision)

Ellen Hosford
[redacted]

Jul 25, 2019

Green Mountain Care Board

Subject: Proposed BCBS and MVP Premium Increases

To Green Mountain Care Board,

I am writing to comment on the proposed premium increases for Vermont Health Connect plans from Blue Cross Blue Shield and MVP Health Care.

I urge the Board to cut these increases so health insurance coverage does not become less affordable for Vermonters.

Premiums continue to grow far faster than wages. Increasing these costs even more will put affordable health care out of reach for too many Vermonters.

Please cut these proposed rate increases so Vermonters can afford the coverage we need.

Sincerely,
Ellen Hosford

UNOFFICIAL COMMENT (Received post-decision)

Keith Dunlop
[redacted]

Jul 25, 2019

Green Mountain Care Board

Subject: Proposed BCBS and MVP Premium Increases

To Green Mountain Care Board,

I am writing to comment on the proposed premium increases for Vermont Health Connect plans from Blue Cross Blue Shield and MVP Health Care.

I urge the Board to cut these increases so health insurance coverage does not become less affordable for Vermonters.

Premiums continue to grow far faster than wages. Increasing these costs even more will put affordable health care out of reach for too many Vermonters.

As someone who works in an industry where health care coverage is seldom offered by employers, I depend on the ability to pay reasonable rates for health insurance. Please cut these proposed rate increases so Vermonters can afford the coverage we need.

Sincerely,
Keith Dunlop

UNOFFICIAL COMMENT (Received post-decision)

Susan Dunne
[redacted]

Jul 25, 2019

Green Mountain Care Board

Subject: Proposed BCBS and MVP Premium Increases

To Green Mountain Care Board,

I am writing to comment on the proposed premium increases for Vermont Health Connect plans from Blue Cross Blue Shield and MVP Health Care.

I urge the Board to cut these increases so health insurance coverage does not become less affordable for Vermonters.

Premiums continue to grow far faster than wages. Increasing these costs even more will put affordable health care out of reach for too many Vermonters.

Please cut these proposed rate increases so Vermonters can afford the coverage we need.

Sincerely,
Susan Dunne

UNOFFICIAL COMMENT (Received post-decision)

Marcia Gustafson
[redacted]

Jul 25, 2019

Green Mountain Care Board

Subject: Proposed BCBS and MVP Premium Increases

To Green Mountain Care Board,

The proposed premium increases for Vermont Health Connect plans from Blue Cross Blue Shield and MVP Health Care are hefty and will put many Vermonters in a really tough situation.

I'm writing on a day where news reports are saying that the U.S. Department of Agriculture is proposing a new rule for SNAP that would cause some 3,000,000 families across the country to lose food assistance. The affected families are working families who are on on the cusp of making ends meet right now and likely are many of the same families that these premium increases would affect.

All working families in Vermont should be able to afford the necessities of life, which certainly include food, shelter and health insurance.

Please cut these proposed rate increases so Vermonters can afford the coverage they need.

Sincerely,
Marcia Gustafson

UNOFFICIAL COMMENT (Received post-decision)

Susan Mogensen
[redacted]

Jul 25, 2019

Green Mountain Care Board

Subject: Proposed BCBS and MVP Premium Increases

To Green Mountain Care Board,

I am writing to comment on the proposed premium increases for Vermont Health Connect plans from Blue Cross Blue Shield and MVP Health Care.

I urge the Board to cut these increases so health insurance coverage does not become less affordable for Vermonters.

Premiums continue to grow far faster than wages. Increasing these costs even more will put affordable health care out of reach for too many Vermonters.

Please cut these proposed rate increases so Vermonters can afford the coverage we need.

Sincerely,
Susan Mogensen

UNOFFICIAL COMMENT (Received post-decision)

Diane Meitrott
[redacted]

Jul 25, 2019

Green Mountain Care Board

Subject: Proposed BCBS and MVP Premium Increases

To Green Mountain Care Board,

I am writing to comment on the proposed premium increases for Vermont Health Connect plans from Blue Cross Blue Shield and MVP Health Care.

I urge the Board to cut these increases so health insurance coverage does not become less affordable for Vermonters.

Premiums continue to grow far faster than wages. Increasing these costs even more will put affordable health care out of reach for too many Vermonters.

Please cut these proposed rate increases so Vermonters can afford the coverage we need.

Sincerely,
Diane Meitrott

UNOFFICIAL COMMENT (Received post-decision)

Chris Goodman
[redacted]

Jul 25, 2019

Green Mountain Care Board

Subject: Proposed BCBS and MVP Premium Increases

To Green Mountain Care Board,

I am writing to comment on the proposed premium increases for Vermont Health Connect plans from Blue Cross Blue Shield and MVP Health Care.

I urge the Board to cut these increases so health insurance coverage does not become less affordable for Vermonters.

Premiums continue to grow far faster than wages. Increasing these costs even more will put affordable health care out of reach for too many Vermonters. As retired seniors, my husband and I live on a fixed income and insurance increases take a huge chunk of our income.

Please cut these proposed rate increases so Vermonters can afford the coverage we need.

Sincerely,
Chris Goodman

Sincerely,
Chris Goodman

UNOFFICIAL COMMENT (Received post-decision)

Judith Wiger-Grohs
[redacted]

Jul 25, 2019

Green Mountain Care Board

Subject: Proposed BCBS and MVP Premium Increases

To Green Mountain Care Board,

I am writing to comment on the proposed premium increases for Vermont Health Connect plans from Blue Cross Blue Shield and MVP Health Care.

I urge the Board to cut these increases so health insurance coverage does not become less affordable for Vermonters.

Premiums continue to grow far faster than wages. Increasing these costs even more will put affordable health care out of reach for too many Vermonters.

Please cut these proposed rate increases so Vermonters can afford the coverage we need.

Sincerely,
Judith Wiger-Grohs

UNOFFICIAL COMMENT (Received post-decision)

John Smolinsky
[redacted]

Jul 25, 2019

Green Mountain Care Board

Subject: Proposed BCBS and MVP Premium Increases

To Green Mountain Care Board,

I am writing to comment on the proposed premium increases for Vermont Health Connect plans from Blue Cross Blue Shield and MVP Health Care.

I urge the Board to cut these increases so health insurance coverage does not become less affordable for Vermonters.

Premiums continue to grow far faster than wages. Increasing these costs even more will put affordable health care out of reach for too many Vermonters.

Please cut these proposed rate increases so Vermonters can afford the coverage we need.

Sincerely,
John Smolinsky

UNOFFICIAL COMMENT (Received post-decision)

Susan Bandfield
[redacted]

Jul 25, 2019

Green Mountain Care Board

Subject: Proposed BCBS and MVP Premium Increases

To Green Mountain Care Board,

I am writing to comment on the proposed premium increases for Vermont Health Connect plans from Blue Cross Blue Shield and MVP Health Care.

I urge the Board to cut these increases so health insurance coverage does not become less affordable for Vermonters.

Premiums continue to grow far faster than wages. Increasing these costs even more will put affordable health care out of reach for too many Vermonters.

Please cut these proposed rate increases so Vermonters can afford the coverage we need.

Sincerely,
Susan Bandfield

UNOFFICIAL COMMENT (Received post-decision)

Jane Tucker
[redacted]
[redacted]

Jul 25, 2019

Green Mountain Care Board

Subject: Proposed BCBS and MVP Premium Increases

To Green Mountain Care Board,

I am writing to comment on the proposed premium increases for Vermont Health Connect plans from Blue Cross Blue Shield and MVP Health Care. I urge the Board to cut these increases so health insurance coverage does not become less affordable for Vermonters.

I am closing in on being eligible for Medicare in a couple of years, but in the meantime, having to pay for premiums and deductibles out-of-pocket is always a stretch. An increase of 15+% is frightening, especially since wages are not increasing at that same rate.

Please consider keeping these costs within reason. Thank you.

Sincerely,
Jane Tucker

Sincerely,
Jane Tucker

Diana Parker
[redacted]

Jul 25, 2019

Green Mountain Care Board

Subject: Proposed BCBS and MVP Premium Increases

To Green Mountain Care Board,

I am writing to comment on the proposed premium increases for Vermont Health Connect plans from Blue Cross Blue Shield and MVP Health Care.

I urge the Board to cut these increases so health insurance coverage does not become less affordable for Vermonters.

Premiums continue to grow far faster than wages. Increasing these costs even more will put affordable health care out of reach for too many Vermonters.

Please cut these proposed rate increases so Vermonters can afford the coverage we need.

Sincerely,
Diana Parker

UNOFFICIAL COMMENT (Received post-decision)

Gail Rose
[redacted]
[redacted]

Jul 25, 2019

Green Mountain Care Board

Subject: Proposed BCBS and MVP Premium Increases

To Green Mountain Care Board,

I am writing to comment on the proposed premium increases for Vermont Health Connect plans from Blue Cross Blue Shield and MVP Health Care.

I urge the Board to cut these increases so health insurance coverage does not become less affordable for Vermonters.

Premiums continue to grow far faster than wages. Increasing these costs even more will put affordable health care out of reach for too many Vermonters. When this happens, individuals do not get routine care and may delay preventive treatments that keep costs down in the long run. Health insurance companies seem to have pretty high compensation for their executives and they should have to show their financial accounting and compensation structure before the board approves rate hikes.

Please cut these proposed rate increases so Vermonters can afford the coverage we need.

Sincerely,
Gail Rose

UNOFFICIAL COMMENT (Received post-decision)

Margaret Heale
[redacted]

Jul 25, 2019

Green Mountain Care Board

Subject: Proposed BCBS and MVP Premium Increases

To Green Mountain Care Board,

I am writing to comment on the proposed premium increases for Vermont Health Connect plans from Blue Cross Blue Shield and MVP Health Care.

I urge the Board to look at ways to make health care companies more transparent and not for profit. Health care needs to be affordable for all which means insurance needs to be affordable for all.

Premiums continue to grow far faster than wages. Increasing these costs even more will put affordable health care out of reach for too many Vermonters.

Please cut these proposed rate increases so Vermonters can afford the coverage we need.

Sincerely,
Margaret Heale

UNOFFICIAL COMMENT (Received post-decision)

Cheryl Foote
[redacted]

Jul 25, 2019

Green Mountain Care Board

Subject: Proposed BCBS and MVP Premium Increases

To Green Mountain Care Board,

I am writing to comment on the proposed premium increases for Vermont Health Connect plans from Blue Cross Blue Shield and MVP Health Care.

I urge the Board to cut these increases so health insurance coverage does not become less affordable for Vermonters. For retirees like me, who rely on a small or no pension and their savings, the increase in health costs cuts deeply into our ability to live a balanced life...more of our money goes to pay medical bills every year. I have lived and worked in VT for over 40 years and would like to stay here. But with the taxes on pensions and SS and rising health premiums, it is concerning. The question of whether or not to move to a more affordable state for retirees is on my mind,

Premiums continue to grow far faster than wages. Increasing these costs even more will put affordable health care out of reach for too many Vermonters. Young families and those with disabilities need health care and should not be deprived of this as citizens of this state and country.

Please cut these proposed rate increases so Vermonters can afford the coverage we need.

Sincerely,
Cheryl Foote

Sincerely,
Cheryl Foote

UNOFFICIAL COMMENT (Received post-decision)

Matthew Peake
[redacted]

Jul 25, 2019

Green Mountain Care Board

Subject: Proposed BCBS and MVP Premium Increases

To Green Mountain Care Board,

I am writing to comment on the proposed premium increases for Vermont Health Connect plans from Blue Cross Blue Shield and MVP Health Care.

I urge the Board to cut these increases so health insurance coverage does not become less affordable for Vermonters.

Premiums continue to grow far faster than wages. Increasing these costs even more will put affordable health care out of reach for too many Vermonters.

Please cut these proposed rate increases so Vermonters can afford the coverage we need.

Sincerely,
Matthew Peake

UNOFFICIAL COMMENT (Received post-decision)

Kate Taylor
[redacted]

Jul 25, 2019

Green Mountain Care Board

Subject: Proposed BCBS and MVP Premium Increases

To Green Mountain Care Board,

I am writing to comment on the proposed premium increases for Vermont Health Connect plans from Blue Cross Blue Shield and MVP Health Care.

I urge the Board to cut these increases so health insurance coverage does not become less affordable for Vermonters.

Premiums continue to grow far faster than wages. Increasing these costs even more will put affordable health care out of reach for too many Vermonters.

Please cut these proposed rate increases so Vermonters can afford the coverage we need.

Sincerely,
Kate Taylor

UNOFFICIAL COMMENT (Received post-decision)

Kate Schaefer
[redacted]

Jul 25, 2019

Green Mountain Care Board

Subject: Proposed BCBS and MVP Premium Increases

To Green Mountain Care Board,

I am writing to comment on the proposed premium increases for Vermont Health Connect plans from Blue Cross Blue Shield and MVP Health Care.

I urge the Board to cut these increases so health insurance coverage does not become less affordable for Vermonters.

Premiums continue to grow far faster than wages. Increasing these costs even more will put affordable health care out of reach for too many Vermonters.

Please cut these proposed rate increases so Vermonters can afford the coverage we need.

Sincerely,
Kate Schaefer

UNOFFICIAL COMMENT (Received post-decision)

Lucile Keene
[redacted]

Jul 25, 2019

Green Mountain Care Board

Subject: Proposed BCBS and MVP Premium Increases

To Green Mountain Care Board,

I am writing to comment on the proposed premium increases for Vermont Health Connect plans from Blue Cross Blue Shield and MVP Health Care.

I urge the Board to cut these increases so health insurance coverage does not become less affordable for Vermonters.

Premiums continue to grow far faster than wages. Increasing these costs even more will put affordable health care out of reach for too many Vermonters.

Please cut these proposed rate increases so Vermonters can afford the coverage we need.

Sincerely,
Lucile Keene

UNOFFICIAL COMMENT (Received post-decision)

Betsy Harper
[redacted]
[redacted]

Jul 25, 2019

Green Mountain Care Board

Subject: Proposed BCBS and MVP Premium Increases

To Green Mountain Care Board,

I am writing to comment on the proposed premium increases for Vermont Health Connect plans from Blue Cross Blue Shield and MVP Health Care.

I urge the Board to cut these increases so health insurance coverage does not become less affordable for Vermonters.

Premiums continue to grow far faster than wages. Increasing these costs even more will put affordable health care out of reach for too many Vermonters.

Please cut these proposed rate increases so Vermonters can afford the coverage we need.

Sincerely,
Betsy Harper

UNOFFICIAL COMMENT (Received post-decision)

Charleen Buttura
[redacted]

Jul 25, 2019

Green Mountain Care Board

Subject: Proposed BCBS and MVP Premium Increases

To Green Mountain Care Board,

I am writing to comment on the proposed premium increases for Vermont Health Connect plans from Blue Cross Blue Shield and MVP Health Care.

I urge the Board to cut these increases so health insurance coverage does not become less affordable for Vermonters.

Premiums continue to grow far faster than wages. Increasing these costs even more will put affordable health care out of reach for too many Vermonters.

I live on a fixed income and will not be able to continue paying for these increases.

Please cut these proposed rate increases so Vermonters can afford the coverage we need.

Sincerely,
Charleen Buttura

UNOFFICIAL COMMENT (Received post-decision)

Timothy Taussig
[redacted]

Jul 25, 2019

Green Mountain Care Board

Subject: Proposed BCBS and MVP Premium Increases

To Green Mountain Care Board,

I am writing to comment on the proposed premium increases for Vermont Health Connect plans from Blue Cross Blue Shield and MVP Health Care.

I urge the Board to cut these increases so health insurance coverage does not become less affordable for Vermonters.

Premiums continue to grow far faster than wages. Increasing these costs even more will put affordable health care out of reach for too many Vermonters.

Please cut these proposed rate increases so Vermonters can afford the coverage we need.

Sincerely,
Timothy Taussig

UNOFFICIAL COMMENT (Received post-decision)

John Hamerslough
[redacted]

Jul 25, 2019

Green Mountain Care Board

Subject: Proposed BCBS and MVP Premium Increases

To Green Mountain Care Board,

I am writing to pleading with you to not give Blue Cross Blue Shield and MVP the full amount of the premium increase they are asking for. the proposed premium increases for Vermont Health Connect plans from Blue Cross Blue Shield and MVP Health. Care is too high and it is already too hard to afford their premiums for lower income Vermonter. Please save Vermonters from paying out even more then they can afford now.

Premiums continue to grow far faster than wages. Increasing these costs even more will put affordable health care out of reach for too many Vermonters.

Please cut these proposed rate increases so Vermonters can afford the coverage we need.
Thank You.

Sincerely,
John Hamerslough

UNOFFICIAL COMMENT (Received post-decision)

Nancy Webb
[redacted]

Jul 25, 2019

Green Mountain Care Board

Subject: Proposed BCBS and MVP Premium Increases

To Green Mountain Care Board,

I am writing to comment on the proposed premium increases for Vermont Health Connect plans from Blue Cross Blue Shield and MVP Health Care.

I urge the Board to cut these increases so health insurance coverage does not become less affordable for Vermonters.

Premiums continue to grow far faster than wages. Increasing these costs even more will put affordable health care out of reach for too many Vermonters.

Please cut these proposed rate increases so Vermonters can afford the coverage we need.

Sincerely,
Nancy Webb

UNOFFICIAL COMMENT (Received post-decision)

Mary Metcalf
[redacted]

Jul 25, 2019

Green Mountain Care Board

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To Green Mountain Care Board,

I am writing to comment on the proposed premium increases for Vermont Health Connect plans from Blue Cross Blue Shield and MVP Health Care.

I urge the Board to cut these increases so health insurance coverage does not become less affordable for Vermonters.

Premiums continue to grow far faster than wages. Increasing these costs even more will put affordable health care out of reach for too many Vermonters.

Please cut these proposed rate increases so Vermonters can afford the coverage we need.

Sincerely,
Mary Metcalf

UNOFFICIAL COMMENT (Received post-decision)

Ruth Murphy
[redacted]

Jul 25, 2019

Green Mountain Care Board

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To Green Mountain Care Board,

I am writing to comment on the proposed premium increases for Vermont Health Connect plans from Blue Cross Blue Shield and MVP Health Care.

I urge the Board to cut these increases so health insurance coverage does not become less affordable for Vermonters.

Premiums continue to grow far faster than wages. Increasing these costs even more will put affordable health care out of reach for too many Vermonters.

Please cut these proposed rate increases so Vermonters can afford the coverage we need.

Sincerely,
Ruth Murphy

UNOFFICIAL COMMENT (Received post-decision)

Anne McKinsey
[redacted]

Jul 25, 2019

Green Mountain Care Board

Subject: Proposed BCBS and MVP Premium Increases

To Green Mountain Care Board,

I am writing to comment on the proposed premium increases for Vermont Health Connect plans from Blue Cross Blue Shield and MVP Health Care.

I urge the Board to cut these increases so health insurance coverage does not become less affordable for Vermonters.

Premiums continue to grow far faster than wages. Increasing these costs even more will put affordable health care out of reach for too many Vermonters.

Please cut these proposed rate increases so Vermonters can afford the coverage we need.

Sincerely,
Anne McKinsey

UNOFFICIAL COMMENT (Received post-decision)

Dan Brett
[redacted]
[redacted]

Jul 25, 2019

Green Mountain Care Board

Subject: Proposed BCBS and MVP Premium Increases

To Green Mountain Care Board,

I am writing to comment on the proposed premium increases for Vermont Health Connect plans from Blue Cross Blue Shield and MVP Health Care.

I urge the Board to cut these increases so health insurance coverage does not become less affordable for Vermonters.

Premiums continue to grow far faster than wages. Increasing these costs even more will put affordable health care out of reach for too many Vermonters.

Please cut these proposed rate increases so Vermonters can afford the coverage we need.

Sincerely,
Dan Brett

UNOFFICIAL COMMENT (Received post-decision)

Martha Tack
[redacted]

Jul 25, 2019

Green Mountain Care Board

Subject: Proposed BCBS and MVP Premium Increases

To Green Mountain Care Board,

I am writing to comment on the proposed premium increases for Vermont Health Connect plans from Blue Cross Blue Shield and MVP Health Care.

I urge the Board to cut these increases so health insurance coverage does not become less affordable for Vermonters.

Premiums continue to grow far faster than wages. Increasing these costs even more will put affordable health care out of reach for too many Vermonters.

Please cut these proposed rate increases so Vermonters can afford the coverage we need.

Sincerely,
Martha Tack

UNOFFICIAL COMMENT (Received post-decision)

Seth Butler
[redacted]
[redacted]

Jul 25, 2019

Green Mountain Care Board

Subject: Proposed BCBS and MVP Premium Increases

To Green Mountain Care Board,

I am writing to comment on the proposed premium increases for Vermont Health Connect plans.

I urge the Board to cut these increases so health insurance coverage does not become any less affordable for Vermonters.

Premiums continue to grow far faster than wages. Increasing these costs even more will put affordable health care out of reach for too many Vermonters.

Please cut these proposed rate increases so Vermonters can afford the coverage we need.

Sincerely,
Seth Butler

UNOFFICIAL COMMENT (Received post-decision)

AnnMarie Gorham
[redacted]

Jul 25, 2019

Green Mountain Care Board

Subject: Proposed BCBS and MVP Premium Increases

To Green Mountain Care Board,

I am writing to comment on the proposed premium increases for Vermont Health Connect plans from Blue Cross Blue Shield and MVP Health Care.

I urge the Board to cut these increases so health insurance coverage does not become less affordable for Vermonters.

Premiums continue to grow far faster than wages. Increasing these costs even more will put affordable health care out of reach for too many Vermonters.

I am a Vermonter who is also a healthcare Provider. I am a Nurse Practitioner who can barely afford to access the very care that I give to others while I raise my children.

Please cut these proposed rate increases so Vermonters can afford the coverage we need.

Sincerely,
AnnMarie Gorham

UNOFFICIAL COMMENT (Received post-decision)

Johns Congdon
[redacted]
[redacted]

Jul 25, 2019

Green Mountain Care Board

Subject: Proposed BCBS and MVP Premium Increases

To Green Mountain Care Board,

I am writing to comment on the proposed premium increases for Vermont Health Connect plans from Blue Cross Blue Shield and MVP Health Care.

I urge the Board to cut these increases so health insurance coverage does not become less affordable for Vermonters.

Premiums continue to grow far faster than wages. Increasing these costs even more will put affordable health care out of reach for too many Vermonters.

Please cut these proposed rate increases so Vermonters can afford the coverage we need.

Sincerely,
Johns Congdon

UNOFFICIAL COMMENT (Received post-decision)

Kenneth Copenhaver
[redacted]
[redacted]

Jul 25, 2019

Green Mountain Care Board

Subject: Proposed BCBS and MVP Premium Increases

To Green Mountain Care Board,

Health insurance companies are already taking a big chunk of the public's health care dollars and providing very little health benefit in return. Please put a brake on premium increases.

I am writing to comment on the proposed premium increases for Vermont Health Connect plans from Blue Cross Blue Shield and MVP Health Care.

I urge the Board to cut these increases so health insurance coverage does not become less affordable for Vermonters.

Premiums continue to grow far faster than wages. Increasing these costs even more will put affordable health care out of reach for too many Vermonters.

Please cut these proposed rate increases so Vermonters can afford the coverage we need.

Sincerely,
Kenneth Copenhaver

UNOFFICIAL COMMENT (Received post-decision)

Rose Carlsen
[redacted]
[redacted]

Jul 25, 2019

Green Mountain Care Board

Subject: Proposed BCBS and MVP Premium Increases

To Green Mountain Care Board,

I am writing to comment on the proposed premium increases for Vermont Health Connect plans from Blue Cross Blue Shield and MVP Health Care.

I urge the Board to cut these increases so health insurance coverage does not become less affordable for Vermonters.

Premiums continue to grow far faster than wages. Increasing these costs even more will put affordable health care out of reach for too many Vermonters.

Please cut these proposed rate increases so Vermonters can afford the coverage we need.

Sincerely,
Rose Carlsen

UNOFFICIAL COMMENT (Received post-decision)

Erik Mathiasen
[redacted]

Jul 25, 2019

Green Mountain Care Board

Subject: Proposed BCBS and MVP Premium Increases

To Green Mountain Care Board,

I am writing to comment on the proposed premium increases for Vermont Health Connect plans from Blue Cross Blue Shield and MVP Health Care.

I urge the Board to cut these increases so health insurance coverage does not become less affordable for Vermonters.

Premiums continue to grow far faster than wages. Increasing these costs even more will put affordable health care out of reach for too many Vermonters.

Please cut these proposed rate increases so Vermonters can afford the coverage we need.

Sincerely,
Erik Mathiasen

UNOFFICIAL COMMENT (Received post-decision)

Janet Roerig
[redacted]

Jul 25, 2019

Green Mountain Care Board

Subject: Proposed BCBS and MVP Premium Increases

To Green Mountain Care Board,

I am writing to comment on the proposed premium increases for Vermont Health Connect plans from Blue Cross Blue Shield and MVP Health Care.

I urge the Board to cut these increases so health insurance coverage does not become less affordable for Vermonters.

Premiums continue to grow far faster than wages. Increasing these costs even more will put affordable health care out of reach for too many Vermonters.

Please cut these proposed rate increases so Vermonters can afford the coverage we need.

Sincerely,
Janet Roerig

UNOFFICIAL COMMENT (Received post-decision)

Leila Black
[redacted]
[redacted]

Jul 25, 2019

Green Mountain Care Board

Subject: Proposed BCBS and MVP Premium Increases

To Green Mountain Care Board,

I am writing to comment on the proposed premium increases for Vermont Health Connect plans from Blue Cross Blue Shield and MVP Health Care.

I urge the Board to cut these increases so health insurance coverage does not become less affordable for Vermonters.

Premiums continue to grow far faster than wages. Increasing these costs even more will put affordable health care out of reach for too many Vermonters.

Please cut these proposed rate increases so Vermonters can afford the coverage we need.

Sincerely,
Leila Black

UNOFFICIAL COMMENT (Received post-decision)

Anthony Iarrapino
[redacted]

Jul 25, 2019

Green Mountain Care Board

Subject: Proposed BCBS and MVP Premium Increases

To Green Mountain Care Board,

I am writing to comment on the proposed premium increases for Vermont Health Connect plans from Blue Cross Blue Shield and MVP Health Care.

I urge the Board to cut these increases so health insurance coverage does not become less affordable for Vermonters.

Premiums continue to grow far faster than wages. Increasing these costs even more will put affordable health care out of reach for too many Vermonters.

Please cut these proposed rate increases so Vermonters can afford the coverage we need.

Sincerely,
Anthony Iarrapino

UNOFFICIAL COMMENT (Received post-decision)

jessica Diamondstone
[redacted]

Jul 25, 2019

Green Mountain Care Board

Subject: Proposed BCBS and MVP Premium Increases

To Green Mountain Care Board,

The proposed premium increases for Vermont Health Connect plans from Blue Cross Blue Shield and MVP Health Care is ludicrous!

People are struggling to keep their homes warm in the winter, their cupboards full, and their cars on the road (especially with these insane new inspection laws which are crushing to the working class and working poor!!)

Premiums continue to grow far faster than wages. Increasing these costs even more will put affordable health care out of reach for too many Vermonters.

Please leave rates along or lower them, or better yet, put the medical profession on State salaries just like teachers and police. It is time to socialize medicine and take the profit out of caring for the sick!

Sincerely,
jessica Diamondstone

UNOFFICIAL COMMENT (Received post-decision)

Marie Litowinsky, RN,
[redacted]

Jul 25, 2019

Green Mountain Care Board

Subject: Proposed BCBS and MVP Premium Increases

To Green Mountain Care Board,

I am writing to comment on the proposed premium increases for Vermont Health Connect plans from Blue Cross Blue Shield and MVP Health Care.

I urge the Board to cut these increases so health insurance coverage does not become less affordable for Vermonters.

Premiums continue to grow far faster than wages. Increasing these costs even more will put affordable health care out of reach for too many Vermonters.

Please cut these proposed rate increases so Vermonters can afford the coverage we need.

Sincerely,
Marie Litowinsky, RN,

UNOFFICIAL COMMENT (Received post-decision)

Deborah Crown
[redacted]

Jul 25, 2019

Green Mountain Care Board

Subject: Proposed BCBS and MVP Premium Increases

To Green Mountain Care Board,

I am writing to comment on the proposed premium increases for Vermont Health Connect plans from Blue Cross Blue Shield and MVP Health Care.

I urge the Board to cut these increases so health insurance coverage does not become less affordable for Vermonters.

Premiums continue to grow far faster than wages. Increasing these costs even more will put affordable health care out of reach for too many Vermonters.

Please cut these proposed rate increases so Vermonters can afford the coverage we need.

I have been on VT Health Connect or Green Mountain Care for 12 years, the entire time I've lived in Vermont. I recently downgraded my coverage to a very high deductible plan through MVP. I am saving almost $300 per month this way. Because I am 64 years old soon, I felt I needed to do that to continue contributing to my retirement account. I am sure I will not be able to retire until I am 70. It is so expensive to have insurance now. Thank God I am a fairly healthy person, so my costs are lower than most.

Sincerely,
Deborah Crown

Eve Dubois
[redacted]

Jul 26, 2019

Green Mountain Care Board

Subject: Proposed BCBS and MVP Premium Increases

To Green Mountain Care Board,

I am writing to comment on the proposed premium increases for Vermont Health Connect plans from Blue Cross Blue Shield and MVP Health Care.

I urge the Board to cut these increases so health insurance coverage does not become less affordable for Vermonters.

Premiums continue to grow far faster than wages. Increasing these costs even more will put affordable health care out of reach for too many Vermonters.

Please cut these proposed rate increases so Vermonters can afford the coverage we need.

Sincerely,
Eve Dubois

UNOFFICIAL COMMENT (Received post-decision)

Meg Cottam
[redacted]

Jul 26, 2019

Green Mountain Care Board

Subject: Proposed BCBS and MVP Premium Increases

To Green Mountain Care Board,

I am writing to comment on the proposed premium increases for Vermont Health Connect plans from Blue Cross Blue Shield and MVP Health Care.

I urge the Board to cut these increases so health insurance coverage does not become less affordable for Vermonters.

Premiums continue to grow far faster than wages. Increasing these costs even more will put affordable health care out of reach for too many Vermonters.

Please cut these proposed rate increases so Vermonters can afford the coverage we need.

Sincerely,
Meg Cottam

UNOFFICIAL COMMENT (Received post-decision)

Maryann Zavez
[redacted]

Jul 26, 2019

Green Mountain Care Board

Subject: Proposed BCBS and MVP Premium Increases

To Green Mountain Care Board,

I am writing to comment on the proposed premium increases for Vermont Health Connect plans from Blue Cross Blue Shield and MVP Health Care.

I urge the Board to cut these increases so health insurance coverage does not become less affordable for Vermonters.

Premiums continue to grow far faster than wages. Increasing these costs even more will put affordable health care out of reach for too many Vermonters.

Please cut these proposed rate increases so Vermonters can afford the coverage we need.

Sincerely,
Maryann Zavez

UNOFFICIAL COMMENT (Received post-decision)

George Lam
[redacted]

Jul 26, 2019

Green Mountain Care Board

Subject: Proposed BCBS and MVP Premium Increases

To Green Mountain Care Board,

I am writing to comment on the proposed premium increases for Vermont Health Connect plans from Blue Cross Blue Shield and MVP Health Care.

I urge the Board to cut these increases so health insurance coverage does not become less affordable for Vermonters.

Premiums continue to grow far faster than wages. Increasing these costs even more will put affordable health care out of reach for too many Vermonters.

Please cut these proposed rate increases so Vermonters can afford the coverage we need.

Sincerely,
George Lam

UNOFFICIAL COMMENT (Received post-decision)

Dave Hobbs
[redacted]

Jul 26, 2019

Green Mountain Care Board

Subject: Proposed BCBS and MVP Premium Increases

To Green Mountain Care Board,

As a Family Physician and a patient here in Vermont, I am writing to comment on the proposed premium increases for Vermont Health Connect plans from Blue Cross Blue Shield and MVP Health Care. Premiums continue to grow far faster than wages. I can afford the increase but increasing these costs even more will put affordable health care out of reach for too many Vermonters. As you know creating increased financial stress in our society leads to declining general health.
I hope your decision reflects this concern. Thanks,
Dave Hobbs, MD

Sincerely,
Dave Hobbs

Ed Trottier
[redacted]
[redacted]

Jul 26, 2019

Green Mountain Care Board

Subject: Proposed BCBS and MVP Premium Increases

To Green Mountain Care Board,

I am writing to comment on the proposed premium increases for Vermont Health Connect plans from Blue Cross Blue Shield and MVP Health Care.

I urge the Board to cut these increases so health insurance coverage does not become less affordable for Vermonters.

Premiums continue to grow far faster than wages. Increasing these costs even more will put affordable health care out of reach for too many Vermonters.

Please cut these proposed rate increases so Vermonters can afford the coverage we need.

Sincerely,
Ed Trottier

UNOFFICIAL COMMENT (Received post-decision)

Augustus Hemenway
[redacted]

Jul 26, 2019

Green Mountain Care Board

Subject: Proposed BCBS and MVP Premium Increases

To Green Mountain Care Board,

I am writing to comment on the proposed premium increases for Vermont Health Connect plans from Blue Cross Blue Shield and MVP Health Care.

I urge the Board to cut these increases so health insurance coverage does not become less affordable for Vermonters.

Premiums continue to grow far faster than wages. Increasing these costs even more will put affordable health care out of reach for too many Vermonters.

Please cut these proposed rate increases so Vermonters can afford the coverage we need.
Is health care to be only available to the rich?

Sincerely,
Augustus Hemenway

UNOFFICIAL COMMENT (Received post-decision)

Mary Madden
[redacted]

Jul 26, 2019

Green Mountain Care Board

Subject: Proposed BCBS and MVP Premium Increases

To Green Mountain Care Board,

I am writing to comment on the proposed premium increases for Vermont Health Connect plans from Blue Cross Blue Shield and MVP Health Care.

I urge the Board to cut these increases so health insurance coverage does not become less affordable for Vermonters.

Premiums continue to grow far faster than wages. Increasing these costs even more will put affordable health care out of reach for too many Vermonters.

Please cut these proposed rate increases so Vermonters can afford the coverage we need.

Sincerely,
Mary Madden

UNOFFICIAL COMMENT (Received post-decision)

Jeanne Zimmerman
[redacted]
[redacted]

Jul 26, 2019

Green Mountain Care Board

Subject: Proposed BCBS and MVP Premium Increases

To Green Mountain Care Board,

Please see my personal message:

I am writing to comment on the proposed premium increases for Vermont Health Connect plans from Blue Cross Blue Shield and MVP Health Care.

I have been covered by BCBS for more than 30 years through employer sponsored plans. My family's current deductible is $13,,500 per year and we pay a premium with each pay check. Rate hikes will increase my family's out of pocket costs even further.
I urge the Board to cut these increases so health insurance coverage does not become less affordable for Vermonters.

Premiums continue to grow far faster than wages. Increasing these costs even more will put affordable health care out of reach for too many Vermonters.

Please cut these proposed rate increases so Vermonters can afford the coverage we need.

Sincerely,
Jeanne Zimmerman

Rick Se
[redacted]

Jul 26, 2019

Green Mountain Care Board

Subject: Proposed BCBS and MVP Premium Increases

To Green Mountain Care Board,

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I urge the Board to cut these increases so health insurance coverage does not become less affordable for Vermonters.

Premiums continue to grow far faster than wages. Increasing these costs even more will put affordable health care out of reach for too many Vermonters.

Please cut these proposed rate increases so Vermonters can afford the coverage we need.

Sincerely,
Rick Se

UNOFFICIAL COMMENT (Received post-decision)

Geryll Robinson
[redacted]

Jul 26, 2019

Green Mountain Care Board

Subject: Proposed BCBS and MVP Premium Increases

To Green Mountain Care Board,

I am writing to comment on the proposed premium increases for Vermont Health Connect plans from Blue Cross Blue Shield and MVP Health Care.

I urge the Board to cut these increases so health insurance coverage does not become less affordable for Vermonters.

Premiums continue to grow far faster than wages. Increasing these costs even more will put affordable health care out of reach for too many Vermonters.

Please cut these proposed rate increases so Vermonters can afford the coverage we need.

Sincerely,
Geryll Robinson

UNOFFICIAL COMMENT (Received post-decision)

Lori Kraft
[redacted]

Jul 26, 2019

Green Mountain Care Board

Subject: Proposed BCBS and MVP Premium Increases

To Green Mountain Care Board,

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I urge the Board to cut these increases so health insurance coverage does not become less affordable for Vermonters.

Premiums continue to grow far faster than wages. Increasing these costs even more will put affordable health care out of reach for too many Vermonters.

Please cut these proposed rate increases so Vermonters can afford the coverage we need.

Sincerely,
Lori Kraft

UNOFFICIAL COMMENT (Received post-decision)

David Stewart
[redacted]

Jul 26, 2019

Green Mountain Care Board

Subject: Proposed BCBS and MVP Premium Increases

To Green Mountain Care Board,

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I urge the Board to cut these increases so health insurance coverage does not become less affordable for Vermonters.

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Please cut these proposed rate increases so Vermonters can afford the coverage we need.

Sincerely,
David Stewart

UNOFFICIAL COMMENT (Received post-decision)

John Mosley
[redacted]
[redacted]

Jul 26, 2019

Green Mountain Care Board

Subject: Proposed BCBS and MVP Premium Increases

To Green Mountain Care Board,

I am writing to comment on the proposed premium increases for Vermont Health Connect plans from Blue Cross Blue Shield and MVP Health Care.

I urge the Board to cut these increases so health insurance coverage does not become less affordable for Vermonters.

Premiums continue to grow far faster than wages. Increasing these costs even more will put affordable health care out of reach for too many Vermonters.

Please cut these proposed rate increases so Vermonters can afford the coverage we need.

Our household had a $1200 increase last year for insurance thru VT Health Connect (my wife's coverage only). The Billing Process was a nightmare and their system was so slow that they frequently sent collection notices before they had processed our electronic payment. We now buy insurance directly from BCBS and save $90 per month. My wifes coverage(she is 60 years old) is an Identical Silver Plan, with the same deductable. This tells me that we were paying $90 / month for Vermont Health Connect to poorly process this coverage. $1080/year to process an insurance policy is hugely inefficient. VHC needs to make their system efficient ,not think of an additional rate increase.
This is no bargin compared to my Medicare but, we do save. The most irritating factor is BCBS is the only "show in town" We have no other options for insurance, a monopoly is held by BCBS. This is hardly the model of American business.

Sincerely,
John Mosley

UNOFFICIAL COMMENT (Received post-decision)

Jacqueline Springwater
[redacted]

Jul 26, 2019

Green Mountain Care Board

Subject: Proposed BCBS and MVP Premium Increases

To Green Mountain Care Board,

I am writing to comment on the proposed premium increases for Vermont Health Connect plans from Blue Cross Blue Shield and MVP Health Care.

I urge the Board to cut these increases so health insurance coverage does not become less affordable for Vermonters.

Premiums continue to grow far faster than wages. Increasing these costs even more will put affordable health care out of reach for too many Vermonters.

Please cut these proposed rate increases so Vermonters can afford the coverage we need.

Sincerely,
Jacqueline Springwater

UNOFFICIAL COMMENT (Received post-decision)

Robert Flynn
[redacted]
[redacted]

Jul 26, 2019

Green Mountain Care Board

Subject: Proposed BCBS and MVP Premium Increases

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Please cut these proposed rate increases so Vermonters can afford the coverage we need.

Sincerely,
Robert Flynn

UNOFFICIAL COMMENT (Received post-decision)

Sydney Alonso
[redacted]

Jul 26, 2019

Green Mountain Care Board

Subject: Proposed BCBS and MVP Premium Increases

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I am writing to comment on the proposed premium increases for Vermont Health Connect plans from Blue Cross Blue Shield and MVP Health Care.

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Premiums continue to grow far faster than wages. Increasing these costs even more will put affordable health care out of reach for too many Vermonters.

Please cut these proposed rate increases so Vermonters can afford the coverage we need.

Sincerely,
Sydney Alonso

UNOFFICIAL COMMENT (Received post-decision)

Sebastian Wu
[redacted]

Jul 26, 2019

Green Mountain Care Board

Subject: BCBS and MVP Premium Increases

To Green Mountain Care Board,

These rate hikes are too high, please do everything you can to keep health care affordable for Vermonters!

Sincerely,
Sebastian Wu

UNOFFICIAL COMMENT (Received post-decision)

susan r
[redacted]

Jul 26, 2019

Green Mountain Care Board

Subject: Proposed BCBS and MVP Premium Increases

To Green Mountain Care Board,

I am writing to comment on the proposed premium increases for Vermont Health Connect plans from Blue Cross Blue Shield and MVP Health Care.

I urge the Board to cut these increases so health insurance coverage does not become less affordable for Vermonters.

Premiums continue to grow far faster than wages. Increasing these costs even more will put affordable health care out of reach for too many Vermonters.

Please cut these proposed rate increases so Vermonters can afford the coverage we need.

Sincerely,
susan r

UNOFFICIAL COMMENT (Received post-decision)

Gill Williams
[redacted]

Jul 26, 2019

Green Mountain Care Board

Subject: Proposed BCBS and MVP Premium Increases

To Green Mountain Care Board,

I am writing to comment on the proposed premium increases for Vermont Health Connect plans from Blue Cross Blue Shield and MVP Health Care.

I urge the Board to cut these increases so health insurance coverage does not become less affordable for Vermonters.

Premiums continue to grow far faster than wages. Increasing these costs even more will put affordable health care out of reach for too many Vermonters.

Please cut these proposed rate increases so Vermonters can afford the coverage we need. Healthcare is hard enough to afford as it is. Why do mega corporations need more?!! We don't HAVE more!

Sincerely,
Gill Williams

UNOFFICIAL COMMENT (Received post-decision)

Alison Cheroff
[redacted]

Jul 26, 2019

Green Mountain Care Board

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To Green Mountain Care Board,

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I urge the Board to cut these increases so health insurance coverage does not become less affordable for Vermonters.

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Please cut these proposed rate increases so Vermonters can afford the coverage we need.

Sincerely,
Alison Cheroff

UNOFFICIAL COMMENT (Received post-decision)

Mary Durland
[redacted]

Jul 27, 2019

Green Mountain Care Board

Subject: Proposed BCBS and MVP Premium Increases

To Green Mountain Care Board,

I am writing to comment on the proposed premium increases for Vermont Health Connect plans from Blue Cross Blue Shield and MVP Health Care.

I urge the Board to cut these increases so health insurance coverage does not become less affordable for Vermonters.

Premiums continue to grow far faster than wages. Increasing these costs even more will put affordable health care out of reach for too many Vermonters.

Please cut these proposed rate increases so Vermonters can afford the coverage we need.

Sincerely,
Mary Durland

UNOFFICIAL COMMENT (Received post-decision)

Amber J
[redacted]

Jul 27, 2019

Green Mountain Care Board

Subject: Proposed BCBS and MVP Premium Increases

To Green Mountain Care Board,

I am a 38 year old woman working and going to school full-time. I can not afford to pay for my health insurance as it is right now let alone if the rates get any higher. If I take the cheaper plans the deductibles are ridiculously high and the benefits are terrible. If you raise the rates on health insurance you stand to make it even more unaffordable than it already is and it even more people at risk of health issues because they can not afford to be taken care of. Shame on you for continuing to take advantage of us with something we all should be able to have without risking Serious debt for it or our lives without it.
I am writing to comment on the proposed premium increases for Vermont Health Connect plans from Blue Cross Blue Shield and MVP Health Care.

I urge the Board to cut these increases so health insurance coverage does not become less affordable for Vermonters.

Premiums continue to grow far faster than wages. Increasing these costs even more will put affordable health care out of reach for too many Vermonters.

Please cut these proposed rate increases so Vermonters can afford the coverage we need.

Sincerely,
Amber J

UNOFFICIAL COMMENT (Received post-decision)

Jim Paquette
[redacted]
[redacted]

Jul 29, 2019

Green Mountain Care Board

Subject: Proposed BCBS and MVP Premium Increases

To Green Mountain Care Board,

I am writing to comment on the proposed premium increases for Vermont Health Connect plans from Blue Cross Blue Shield and MVP Health Care.

I urge the Board to cut these increases so health insurance coverage does not become less affordable for Vermonters.

Premiums continue to grow far faster than wages. Increasing these costs even more will put affordable health care out of reach for too many Vermonters.

Please cut these proposed rate increases so Vermonters can afford the coverage we need.

Sincerely,
Jim Paquette

UNOFFICIAL COMMENT (Received post-decision)

Neal Maker
[redacted]

Jul 29, 2019

Green Mountain Care Board

Subject: Proposed BCBS and MVP Premium Increases

To Green Mountain Care Board,

I am writing to urge the Board to cut proposed premium increases to BCBS and MVP health plans through Vermont Health Connect. As premiums continue rising faster than wages, coverage deteriorates for many Vermont families like ours.

We pay every month toward a plan with high deductibles, which we have never benefited from and which would only help us in the case of a catastrophic medical emergency. It is the only plan we can afford. When my wife slipped and dislocated her shoulder this spring, the plan didn't pay any of the ambulance or emergency room bills; thousands of dollars which we simply don't have. The doctor told her that physical therapy is necessary to prevent future dislocations, but that would not be covered either, and the cost has prevented her from making an appointment.

Please cut the proposed premium increases and keep health care from becoming even more expensive. Allowing the increases would push even more families to accept poor coverage, like ours has. Vermonters shouldn't have to compromise their health to enrich insurance companies.

Sincerely,
Neal Maker

UNOFFICIAL COMMENT (Received post-decision)

Emily Medley
[redacted]
[redacted]

Jul 31, 2019

Green Mountain Care Board

Subject: Proposed BCBS and MVP Premium Increases

To Green Mountain Care Board,

I am writing to comment on the proposed premium increases for Vermont Health Connect plans from Blue Cross Blue Shield and MVP Health Care.

I urge the Board to cut these increases so health insurance coverage does not become less affordable for Vermonters.

Premiums continue to grow far faster than wages. Increasing these costs even more will put affordable health care out of reach for too many Vermonters.

Please cut these proposed rate increases so Vermonters can afford the coverage we need.

Sincerely,
Emily Medley

UNOFFICIAL COMMENT (Received post-decision)

Ronald Hoffman
[redacted]

Jul 31, 2019

Green Mountain Care Board

Subject: Proposed BCBS and MVP Premium Increases

To Green Mountain Care Board,

I am writing to comment on the proposed premium increases for Vermont Health Connect plans from Blue Cross Blue Shield and MVP Health Care.

I urge the Board to cut these increases so health insurance coverage does not become less affordable for Vermonters.

Premiums continue to grow far faster than wages. Increasing these costs even more will put affordable health care out of reach for too many Vermonters.

Please cut these proposed rate increases so Vermonters can afford the coverage we need.

Sincerely,
Ronald Hoffman

UNOFFICIAL COMMENT (Received post-decision)

Bethany Menkart
[redacted]

Aug 3, 2019

Green Mountain Care Board

Subject: Proposed BCBS and MVP Premium Increases

To Green Mountain Care Board,

These proposed rate increases are both outrageous and unaffordable. How can people pay these? I am writing to comment on the proposed premium increases for Vermont Health Connect plans from Blue Cross Blue Shield and MVP Health Care.

I urge the Board to cut these increases so health insurance coverage does not become less affordable for Vermonters.

Premiums continue to grow far faster than wages. Increasing these costs even more will put affordable health care out of reach for too many Vermonters.

Please cut these proposed rate increases so Vermonters can afford the coverage we need.

Sincerely,
Bethany Menkart

UNOFFICIAL COMMENT (Received post-decision)