

HMA Report:
Blue Cross Blue Shield of Vermont 2018 Exchange Rate Filing
GMCB 08-17rr

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July 11, 2017

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Executive Summary

I, Peter J. Horman, FSA MAAA, owner and consulting Chief Actuary of Horman Mathematical & Actuarial Solutions LLC (HMA), was hired by the Vermont Office of the Health Care Advocate (HCA) to provide an independent actuarial review of Blue Cross Blue Shield of Vermont's (BCBSVT) 2018 Exchange Rate Filing which is currently before the Green Mountain Care Board (Board):

When "deciding whether to approve, modify, or disapprove each rate request, the Board shall determine whether the requested rate is affordable, promotes quality care, promotes access to health care, protects insurer solvency, is not unjust, unfair, inequitable, misleading, or contrary to law, and is not excessive, inadequate, or unfairly discriminatory." GCMCB Rule 2.000 § 2.301(b); GCMCB Rule 2.000 § 2.401; *see also* 8 V.S.A. § 4062(a)(3). In addition, the Board must take into consideration "the requirements of the underlying statutes, changes in health care delivery, changes in payment methods and amounts, protecting insurer solvency, and other issues at the discretion of the Board." 18 V.S.A. § 9375(b)(6); *see also* GCMCB Rule 2.000 § 2.401.

I have worked in the health insurance industry as an actuary for close to 20 years and am qualified to provide an actuarial opinion on rate filings. I've attached my CV as Appendix E. This report represents my actuarial opinion and is based on relevant Actuarial Standards of Practice (ASOP)s. As such in Appendix F, I provide my signature and an outline of the ASOPs which I relied on. I performed this review with assistance from an actuarial analyst and a peer review actuary.

I recommend the following key actions to the Board related to BCBSVT's rate filing:

- 1) **Reduce overall rates nearly 4%:** BCBSVT's rate should be reduced to reflect findings of excessive rate adjustments for Aging, Utilization Trend, Contribution to Reserve, and the compounding impact of minor conservative actuarial assumptions.
- 2) **Refresh calculations for the IBNR and the ACA items (Risk Transfer and 9010 Tax):** It is important to recast the incurred but not reported (IBNR) with more recently available data to make sure that it was not overstated (not doing so could lead to excessive rates). It is important to recast the Affordable Care Act (ACA) items to reflect the recent release of CMS data and ensure both carriers in the market are treated consistently.
- 3) **Evaluate misleading information:** Some of BCBSVT's statements about administrative cost efficiency appear to be supported by misleading statistics that may have been presented by BCBSVT out of context. These statistics should not be used to support rate increases.
- 4) **Note available cost-saving options:** There are actions that BCBSVT's management can undertake to lower rates and/or to improve BCBSVT's financial position through means other than rate increases.

These recommended actions are supported by sound actuarial science as outlined in this document. I arrived at these findings using a multi-pronged approach including a review of current and historical filings, replication of calculations in BCBSVT's 2018 filings, comparing BCBSVT to competitors, and relying on actuarial experience to validate the reasonableness of BCBSVT's actuarial assumptions. In Section 1, I

outline the approach I took in my review of the BCBSVT Exchange Rate Filing. In Section 2, I detail the 14 findings that led to the key recommended actions that I listed above. In Section 3 and Appendices A, B, C, & D, I detail my recommended actions. The information in Section 3 and Appendices A, B, C, and D provides the Board's and BCBSVT's actuaries the information to evaluate and implement the recommended changes.

Section 1: HMA Approach to Rate Filing Review

I reviewed the SERFF material, validated BCBSVT's actuarial methodology and calculations, and assessed the reasonableness of BCBSVT's actuarial assumptions using best actuarial practice, my actuarial experience, past BCBSVT rate filings, and appropriate benchmarks. An actuarial analyst at HMA assisted me with my work. Additionally, this and my findings were peer reviewed by a qualified actuary.

Components of my review:

- Detailed Review of 2018 Filing: Performed a detailed review of the BCBSVT 2018 Exchange Rate Filing - BCVT-131037743_SERFF_ORIGINAL_051217.pdf. This review included analyzing the rate build up, compliance testing, exhibits, and the URRT exhibits.
- Calculation Replication: I replicated many calculations BCBSVT made in their filing to ensure the technical accuracy of BCBSVT's filing.
- Review of Historic BCBSVT Rate and Financial Filings: I accumulated and evaluated key data relevant to insurance rate setting, rate trend, and other assumptions from historic rate filings dating back to 2015. I conducted this work to ensure that the current filing uses methodologies consistent to those filings already approved by the Board.
- Compared BCBSVT Filing to Appropriate Benchmarks: Where available, I evaluated items presented in the rate filing using appropriate, available benchmarks.

I created 6 categories to assist the Board in its decision to approve, modify, or disapprove the BCBSVT 2018 Exchange Rate Filing based on the relevant statutory and regulatory requirements. These six categories are:

- 1) Misleading: Misleading information which may lead the Board and consumers to believe something that is not true.
- 2) Technical Errors: Errant calculations that affect the requested rates.
- 3) Excessive: Areas in the rate filing that, while not errant or misleading, are higher than necessary. Often actuaries use the term "conservative" to mean areas which are higher than best estimate expectation. I use the plain language term "excessive" in this memorandum.
- 4) Inefficient: Areas in the rate filing for which management actions would lead to greater cost efficiencies and a reduced rate increase.
- 5) Not Supported: Items in the rate filing where the insurer has not provided sufficient information to justify its actuarial method or result.
- 6) Preliminary: Items where data was preliminary at time of filing and may be different as of today. Failure to use the best data can lead to incorrect actuarial conclusions.

I classified all of my findings using these 6 categories. This document does not highlight any technical errors as findings. I found minor technical errors in BCBSVT's filing but the errors did not materially influence the final actuarial conclusions.

Materials relied upon: For this review, I relied upon all materials BCBSVT submitted to the Board for its review of GMCB 08-17rr including the original BCBSVT 2018 SERFF Filing, all written materials BCBSVT submitted in response to Lewis and Ellis (L&E) inquiries as of July 10, 2017, the BCBSVT 2016 Annual Statement, the 2018 MVP SERFF Filing, and the Segal Consulting Annual Trend Survey. I also relied upon publicly available rate filings for BCBSVT back to 2015.

Section 2: Rate Filing Review and Identification of Findings

In this section of the report, I walk through the components actuaries use to develop rates, identify how BCBSVT actuaries handled each component when proposing the current rate increase, and then use my expertise to evaluate whether these components support BCBSVT's proposed rate increase. I highlight 8 core actuarial adjustments or calculations that BCBSVT made when generating the proposed rates. For each of these adjustments, I present an Actuarial Opinion and list my relevant findings. I use the six categories previously outlined to indicate how and why I find specific BCBSVT actuarial conclusions problematic.

In general, BCBSVT actuaries used a common approach to the rate development. They projected historic medical claims to the rate period, added administrative costs, and then developed product relativities and other rating factors to get to the ultimate consumer costs. Data is often interpreted as fact. However, actuaries use assumptions when developing rates and those assumptions can lead to material differences in the proposed rates. It is therefore important that those assumptions are formed and verified using the best available data and actuarial scientific methods.

2.1 Development of Base Experience

When setting rates, most actuaries start with 1 or 2 years of recent experience with the assumption that future medical costs should be reasonably in line with past medical costs. BCBSVT outlines their use of historic claims experience on page 8 of the Actuarial Memorandum. They describe using data from their data warehouse (this is a repository that stores claims, membership, billing, and provider data). The data used includes services incurred between January 1, 2016 and December 31, 2016. In addition, they included an "incurred but not reported" (IBNR).¹ BCBSVT adjusted the historical experience to include utilization under capitated arrangements by repricing those claims at 100% fee for service levels. BCBSVT uses both allowed claims (medical claims including member cost share) and paid claims (just claims paid by BCBSVT).

Actuarial Opinion related to base experience:

I identified two areas related to BCBSVT's IBNR and adjustment for capitated claims which led to higher than necessary proposed rates.

Finding 1: IBNR Conservatism

Excessive & Preliminary: Application of IBNR is appropriate. However, it is a process that relies on assumptions and is often an area where rates can be inflated. In reviewing the rate filing and BCBSVT's financial statements, I found 3 indications that BCBSVT's application of IBNR may

¹ IBNR is a standard adjustment actuaries make to reflect claims which have yet to be reported to the insurer.

demonstrate that BCBSVT actuaries assumed higher incurred but not reported claims than actually occurred:

- First, in Exhibit 3B, Medical Trend Development, it appears that the claims per member per month in November and December 2016 are much higher than earlier months in 2016. These are the two months most impacted by IBNR and it is not clear if there is an actual trend increase or just simply extra assumed IBNR.
- Second, I reviewed Underwriting Exhibit 2B of BCBSVT's annual statement and found that the 2015 reserve ran out favorably for BCBSVT by over \$5 million.
- Third, in Underwriting Exhibit 2C I found that 2013 and 2014 had negative IBNR (meaning claims were lower than reported in the previous year).

BCBSVT now has additional data to update the IBNR. A data refresh should be run to ensure that IBNR is not artificially inflating 2018 rates.

Finding 2: Reflection of Capitation

Inefficient: BCBSVT adjusts the base data by replacing capitation claims with 100% of fee for service (FFS). This calculation assumes that BCBSVT's capitated arrangements have no impact on claims costs compared with FFS. Most capitation arrangements are designed to reduce claim costs below FFS levels. For example, some capitation arrangements are designed to penalize providers for over utilizing unnecessary services. If BCBSVT had a risk contract in place which penalized providers for higher than necessary utilization, there would be reductions to the base experience to reflect capitation.

2.2 Demographic Changes

When setting rates in an environment with no medical underwriting or demographic adjustments (as is the case in Vermont), actuaries need to adjust historical data for any changes in the demographic or risk makeup of the underlying population. BCBSVT makes a series of demographic change projections that BCBSVT uses to map its 2016 experience to its anticipated 2018 experience. One such adjustment is for the anticipated aging of the population as BCBSVT outlines on page 12 of the Actuarial Memorandum.

Actuarial Opinion related to demographic changes:

Demographic adjustments are a common practice in setting rates. Membership projections incorporate assumptions and often can have a large impact on the overall rates. As always, these assumptions should be informed by the best use of available data.

I identified one area where BCBSVT increases rates due to demographic movement that may not be justified. In addition, raising premium rates as proposed may cause an adverse selection spiral.²

² One risk an actuary takes when increasing rates for demographic changes is a phenomenon called an adverse selection spiral. This is where high rates or high rate increases drive healthier (often younger) members to make an economic decision that the cost of insurance outweighs the risks associated with dropping insurance coverage. It is appropriate for actuaries to consider this before implementing large rate increases. I believe that high rates do lead healthier members to opt out or avoid the market, in turn making rates higher.

Finding 3: Aging Estimate

Not Supported: BCBSVT's aging assumption could be excessive and is not supported by sufficient analysis. BCBSVT is assuming the average age of its population will continue to increase based on one data point (the March 31, 2017 snapshot/cross section). They calculate this impact by extrapolating that this demographic change will continue at the same pace into 2018. I believe a better approach would be as follows:

- 1) Develop a longer-term history of aging trend.
- 2) Demonstrate that the longer-term trend can be supported by demographic modeling.
- 3) Demonstrate how claims will change due to this new demographic profile.

In BCBSVT's June 27, 2017 response to questions posed by the HCA about its aging assumptions, they support their assumptions by referring only to statewide data on the very oldest and youngest age demographics. Specifically, they point to census data that showed the percentage of the Vermont population over age 65 had increased by "approximately 20 percent" and the percentage of the population below age 18 had decreased by "approximately 7 percent" between 2010 and 2015. They also note in their answer that Vermont's statewide GDP grew 0.5% between 2006 and 2016.³

However, the average age of the Vermont population may not be directly related to the BCBSVT's enrollment population. For example, BCBSVT pointed to the fact that a larger portion of the Vermont population is now 65 and above, but they have failed to explain why this adversely impacts commercial rates. A true estimate of aging impact on a commercial health insurance plan is complex and would include considerations such as the rate at which older workers retire and switch to Medicare, the rate at which younger workers come into the workforce, and population health improvements resulting in older individuals staying healthier longer than previous generations. Given BCBSVT's insufficient analysis, I believe it is reasonable to only reflect the aging that has occurred as of March 31, 2017, and not extrapolate a trend into the future.

Finding 4: Single Risk Pool Adverse Selection Spiral

Excessive: I believe that, if implemented, the proposed high rate increase could lead to an adverse selection spiral in the VT market which in turn will lead to even higher rate increases and deteriorating financial performance. Continued large rate increases may only worsen this situation and may not be the best solution for BCBSVT to meet their financial requirements.

³ July 27, 2017, Responses to BCBSVT 2018 Filing Inquiries, pg. 1-2.

2.3 Trend Section

When setting rates for future time periods, actuarial standards require actuaries to adjust for future changes in medical costs. The annual steady change in costs from one period to the next is referred to as Trend. Trend is made up of 3 major components: unit cost inflation, utilization increase (change in number of services), and mix change (change in severity of services). BCBSVT reflects all three components of trend in their rate filing. Their approach, as outlined in pg. 16 to pg. 23 of the Actuarial Memorandum, is as follows:

- 1) Measure and Track Unit Cost: BCBSVT accumulates provider increases and estimates a cost inflationary factor.
- 2) Combine Utilization and Mix Trend: BCBSVT performs an empirical statistical analysis using historic data normalized for unit costs benefits, demographics, and fraud, waste, and abuse. They use historical trends to project future changes in trends.
- 3) Measure Pharmacy Trends Separately: BCBSVT splits trend in drugs by drug tier. They measure utilization of generic and brand together but then develop an additional trend measure for the percent of scripts moving to generic. Further, they project a separate high trend in specialty drugs.
- 4) Dental & Vision Trends: BCBSVT uses the past three years' experience and extrapolates the trend from recent annual data points.

Actuarial Opinion related to trend:

I identified 3 findings related to BCBSVT's trend projections. Two of these findings relate to how BCBSVT's trend estimation leads to excessive rate increases. One finding explains that BCBSVT's trend calculation fails to account for potential management practices that could lead to more efficient operation and thus lower costs. I also noted that the combined BCBSVT trend is much higher than both inflation and wage growth.

Finding 5: Utilization trend

Excessive and Not Supported: I reviewed the BCBSVT utilization trend assumption of 2% and believe that there is no evidence to support the increased level of utilization trend over the competitor's estimate and BCBSVT's own past year filing. In Exhibit 3B of the Actuarial Memorandum, BCBSVT presents statistical regressions which I deemed not predictive by applying statistical best practices. My regression analysis results are presented in Section 3 and Appendix A of this document.

BCBSVT's method and my attempt to validate their results are summarized as follows:

- BCBSVT presents statistical regressions which make it appear that the recent year-over-year utilization trend of 2.3% is much lower than the statistical regressions.
- BCBSVT uses this to select a 2% utilization and severity assumption.
- It is common for actuaries to check the statistics they use to ensure reasonableness of the statistics. I found no evidence that BCBSVT checked these statistics to ensure they predict trend.

- I attempted to validate the BCBSVT statistics by using data from 2013 to 2015 and the BCBSVT regression methodology to predict 2016 trend. I then compared the result to the 2016 actual results.
- The results of my regression analysis: **the BCBSVT regression statistics did not explain actual trends.**

Given the failure of more complex BCBSVT statistics, I believe an approach of using the historical average or the competitor's utilization trend of 0.7% is more appropriate.

Finding 6: Dental Trend

Excessive: The pediatric dental trend proposed is high, representing over a 10% increase. Dental is generally a stable benefit which doesn't experience changes in unit cost or high utilization. BCBSVT presents two years of double digit trend experience. BCBSVT explains this increase as being caused by members learning about the benefit. They then assume that the high trends will continue throughout 2018. I reviewed the 2017 Segal Trend Survey⁴ and on page 5 found anticipated dental trends for various plan designs, which are roughly 4% on average. As BCBSVT did not provide any evidence that adequately supports their assumptions behind the high trend for 2018, I believe the proposed trend is overly conservative and leads to excessive rates.

Finding 7: Lack of Trend Initiatives

Inefficient: As a health plan in Vermont, BCBSVT is responsible for managing costs. I did not see any evidence of activities to reduce cost built into their trend. Effective trend management can alleviate the pressure for extra conservatism in trend or be used to help improve profitability in lieu of contribution to reserve (CTR) assumptions. Some of the items BCBSVT could implement to mitigate trend:

- 1) Reflect Clinical Initiatives: that is, actions to optimize utilization for a given disease or service.
- 2) Reflect Impact of Risk Contracting Strategies: that is, policies that incent providers to perform services in an optimal fashion.
- 3) Reflect Provider Unit Cost Re-contracting Strategy: that is, strategies to reduce payments on any provider who is overpaid.

2.4 One Time Adjustments

Changes to medical costs are not limited to trend and include other items that are one-time in nature and specific to either the experience period or projection period. On pages 14 & 15 of the Actuarial Memorandum BCBSVT makes a series of one-time adjustments including, but not limited to, changes to network, pharmacy discounts, VHC retroactive membership adjustments, and BCBSVT added in the net cost of reinsurance.

Actuarial Opinion related to one-time adjustments:

It is not unusual for an actuary to itemize one-time changes in a rate filing. I found a one-time adjustment for reinsurance cost that appeared to be excessive leading to a higher than needed rate.

⁴ The Segal Trend Survey is a national trend survey conducted by a large employee benefit consulting group.

Finding 8: Net Cost of Reinsurance

Excessive: BCBSVT includes the net cost of reinsurance in their claims adjustment. I recognize reinsurance is important and that some of this money would be reclassified as administrative costs. However, it is a common practice for reinsurers to overestimate the cost of the reinsurance but then pay an experience rebate to the insurance carrier. I believe not including the anticipated experience rebate is an area of conservatism and when combined with other small areas of conservatism could be material and lead to an excessive rate increase.

2.5 ACA Risk Adjustment & 9010 Tax

Since 2014, actuaries have had to reflect components of the Affordable Care Act (ACA) in the rates they set. For BCBSVT this includes reflecting the Section 9010 Health Insurer Tax and ACA Risk Adjustment. BCBSVT developed methodologies to estimate these items using available information from the federal government.

Actuarial Opinion related to ACA Items:

ACA items are complex and they were estimated based on preliminary data and inconsistent with the other carrier in the market. I believe it is the role of the Board actuary to ensure that the impact of these factors are calculated with the most recent data and consistently between the two carriers.

Finding 9: Update to Risk Adjustment & 9010 Tax

Preliminary Data: The rate filing reflects outdated risk adjustment information and inconsistent development of both the risk adjustment and 9010 tax estimates. I believe L&E should recast these factors using more recent information and a consistent methodology.

2.6 Product specific issues

Much of rate development is focused on developing the index rate change, that is, the change in rate of the average member and product. As Vermont does not allow age rating, the major option a consumer has is the plan design (level of copays, coinsurance, and deductibles). BCBSVT has multiple plan offerings. One plan group offers incentives for healthy behavior (Blue Rewards plans). On page 28 of BCBSVT's Actuarial Memorandum, BCBSVT assigns an additional \$3.21 PMPM to pay for the administrative costs of the incentives for this style of plan. In addition to price, BCBSVT presents their testing to ensure the benefit designs meet federal metal level requirements.

Actuarial Opinion related to product issues:

I reviewed and replicated samples of the BCBSVT compliance testing and pricing factors. I identified one potential concern with the pricing.

Finding 10: Reflecting Savings Generated by Rewards

Inefficient: Generally, rewards are in place to incent healthier behavior that leads to both improved quality and cost savings. Typically, a plan expects a return on investment (ROI) to launch a rewards plan. That is, the anticipated cost savings on the medical component is greater than the cost of the incentives. I did not find evidence that BCBSVT itemized a reduction in the cost of medical services for the Blue Rewards plan designs. It appears the rates filed do not reflect any ROI for the rewards.

2.7 Administrative Cost

In setting rates, actuaries need to reflect the cost that the insurer will incur to perform the services promised to the beneficiaries. BCBSVT's approach to administrative costs is to add in historical administrative cost levels plus an inflationary factor to reflect increases in salaries and benefits.

Actuarial Opinion related to administrative cost increase:

BCBSVT used misleading statistics to justify projected administrative costs. Further, BCBSVT's administrative cost increase may be excessive.

Finding 11: BCBSVT Administrative Ratio

Misleading: On slide 6 of the May 11, 2017 presentation to the Board, BCBSVT made statements about the efficiency of their administrative operations. BCBSVT stated that the 6.3% administrative cost in their rate filing is lower than many carriers nationwide. However, it may be misleading to suggest that this low administrative cost is due to organizational efficiency or to suggest that there is a reasonable benchmark comparison for these costs in VT or across the county. For example, nationally most carriers include broker commissions in their administrative cost reporting. BCBSVT does not, making it difficult to make a direct comparison. Another example of a difference could be BCBSVT's exemption from property tax payments.⁵ Second, when comparing BCBSVT's administrative costs to other companies, it must be noted that BCBSVT has high premium rates so the ratio of administrative costs against premium would appear better.

Finding 12: Administrative Cost Increase

Excessive: BCBSVT proposed administrative cost increases is based on assuming merit increases for all employees including senior management and Board compensation. They used an inflator of 3% to reflect employee merit. However, in BCBSVT's June 6, 2017 and June 27, 2017 responses to questions from the Board's actuaries, they identify that, while they historically inflate salaries over 3%, the net per capita employee cost increase results is 1.4%.⁶ My assumption is this reduction is caused by turnover of higher cost employees being replaced by lower cost employees. Further, it is common when companies do not perform well that management does not get compensation increases. The BCBSVT merit assumptions were applied to all employees including senior management. I believe applying the full 3% merit increase to all employees is an example of conservatism and when combined with other small areas of conservatism could be excessive.

2.8 Contribution to Reserves

I reviewed the BCBSVT Contribution to Reserves (CTR) Exhibit in which BCBSVT forecasts the next two years' growth in premium and membership, then imputes the impact on authorized control level.⁷ BCBSVT desires a 700% risk-based capital ratio (RBC).⁸ Their exhibit estimates, after reflecting investment income, the CTR requirement to meet the growth in claims is 3.2%. But in the rate filing, BCBSVT state they are willing to cap this at 2% of premium.⁹ Further, while BCBSVT experienced losses in

⁵ See 8 V.S.A. §4518 and §4590.

⁶ June 6, 2017 Responses to BCBSVT 2018 Filing Inquiries, p. 5; June 27, 2017 Responses to BCBSVT 2018 Filing Inquiries, pg. 5-6.

⁷ BCBSVT 2018 Vermont Qualified Health Plans Rate Filing, Exhibit 7B.

⁸ Risk-based capital ratio is a standardized measure of financial health that many insurance regulators rely on.

⁹ BCBSVT 2018 Vermont Qualified Health Plans Rate Filing, Actuarial Memorandum, pg. 29.

2016, in the recent rate filing it appears all 2016 issues are corrected for in the 2018 rates. Therefore the previous loss should not be a justification to increase CTR beyond the level in the rate filing.

Actuarial Opinion related to trend:

Financial solvency is an important issue and it is in consumers' best interest for the insurers to have sufficient reserves (or also commonly referred to as surplus). That said, too much surplus could indicate rates are excessive. In my review of BCBSVT's CTR approach, I was concerned that two components of the calculation were excessive.

Finding 13: Reduction of CTR

Three adjustments that BCBSVT used in their CTR calculation lead to an excessive rate increase:

- 1) Allocation of more investment income to "Other" lines of business, which could otherwise offset the QHP surplus requirements.
- 2) Targeted 700% RBC ratio which is at the high end of their target.
- 3) Premium is not the basis for the RBC calculations, claims are. BCBSVT uses the proposed premium increase which is much higher than the claims increase leading to a higher surplus need.

BCBSVT stated they target an RBC ratio between 500% and 700%.¹⁰ So their minimum target is at the very top of the Department of Financial Regulation's target range. Due to the high rate increase proposed in this filing, I believe BCBSVT's CTR calculation should use the 500% level as the target in the calculation.

Finding 14: Historic Losses and CTR Impact

BCBSVT identified 3 issues which led to losses in 2016 and in turn lowered their surplus levels. However, BCBSVT has corrected these issues in the current rate filing and BCBSVT should not expect them to impact future operational costs. Items BCBSVT identified as drivers of loss are:

- Pricing plan Actuarial Values (AV) more than the rate filing expectations.
- VHC retrospective membership issues.
- Lower than anticipated ACA Risk Transfer and ACA Reinsurance collectibles.

BCBSVT had the ability to restate the AV factors and adjust the experience to correct for the VHC membership. Additionally, ACA Reinsurance is no longer an assumption in the rate filing as the program has expired. Risk Transfer is still a risk but this is a reason to hold surplus not a justification to increase it.

Section 3: Recommended Actions Based on Findings

In this section, I recommend what actions should be taken given my findings from my review of BCBSVT's rate filing and explain how my recommendations impact the rates. In support of this section, I included Appendix A, B, C, & D which provide sufficient detail of my calculations to allow actuaries at L&E or BCBSVT to adjust the proposed rates to be in line with my recommendations. In addition, I outline reasons why I believe BCBSVT can maintain its financial strength even with lower rate increases.

¹⁰ June 27, 2017 Responses to BCBSVT 2018 Filing Inquiries, pg. 5.

The key recommended actions are:

- 1) **Reduce overall rates nearly 4%:** BCBSVT's rate should be reduced to reflect findings of excessive rate adjustments for Aging, Utilization Trend, Contribution to Reserve, and the compounding impact of minor conservative actuarial assumptions.
- 2) **Refresh calculations for the IBNR and the ACA items** (Risk Transfer and 9010 Tax): It is important to recast the IBNR to make sure that it was not overstated (doing so would lead to excessive rates). It is important to recast the ACA items to reflect the recent release of CMS data and ensure both carriers in the market are treated consistently.
- 3) **Evaluate misleading information:** Some of BCBSVT's statements about administrative cost efficiency appear to be supported by misleading statistics that may have been presented by BCBSVT out of context. These statistics should not be used to support rate increases.
- 4) **Note available cost-saving options:** There are actions that BCBSVT management can undertake to lower rates and/or to improve BCBSVT's financial position through means other than rate increases.

In the remainder of this section, I detail the rationale for my recommendations.

3.1 Action Recommended: Reduce Rates Due to Excessive Rate Adjustments

Many of the findings in the prior section indicate that BCBSVT's actuarial conclusions were excessive and if corrected could lead to a lower rate increase. Specifically, **I identified 4 material and quantifiable concerns that led to an excessive rate increase.** I recommend the following items be adjusted in the BCBSVT rate proposal:

- Finding 3: Excessive Aging Trend - BCBSVT assumes their average age factor will continue to increase from March 2017 to the experience period in 2018. BCBSVT did not perform appropriate demographic modeling to justify how it projected the impact of demographic shift on rates.
- Finding 5: Excessive Utilization Trend - BCBSVT assumes the average count or severity of medical services will increase on a per capita basis, beyond what is justified by the data or the level their competitor includes in its rate filing.
- Finding 13: Excessive CTR (Contribution to Surplus) – BCBSVT requests a CTR of 2%. I believe a CTR of less than 1% is justified given my analysis of the data.
- Findings 6, 8, & 12: Compounding of 3 higher than necessary rate adjustments (Dental Trend, Reinsurance, and Administrative increase) materially impact the overall rates and lead to an excessive rate increase.

I estimate the quantifiable impact of each of these items on the overall rate and include detailed explanations of my impact assessments in Appendices A, B, C, and D. **Combined, these 4 items lead me to conclude that BCBSVT's proposed rate should be reduced by nearly 4 percentage points (an overall lowering of nearly 33%). I itemize how each of my findings contribute to this reduction below:**

- Finding 3: Aging = 0.5% reduction as outlined in Appendix A
- Finding 5: Utilization Trend = 1.9% reduction as outlined in Appendix B
- Finding 13: CTR = 1.2% reduction as outlined in Appendix C
- Compounding Conservatism = 0.3% to 0.5% reduction as outlined in Appendix D

The material in Appendices A to D show that BCBSVT's proposed rate increase should be lowered. In the next sub-section, I detail other findings which justify a refreshed calculation using available data.

3.2 Action Recommended: Refresh IBNR and ACA Calculations with Recent Data

In my review, I identified 2 items which require a refreshed calculation based on the best data currently available.

I recommend that L&E refresh BCBSVT's IBNR estimate before finalizing rates. The improved data will create more reliable results, protecting against potentially excessive rates.

I recommend that L&E refresh the risk transfer to reflect the data available from the actual 2016 CMS assessment. L&E should calculate the Risk transfer and 9010 tax calculation under similar methodologies to ensure consistency in approach across carriers.

These are recalculations that are easy to implement. L&E can use their existing models but update assumptions to reflect the best available information.

3.3 Action Recommended: Evaluate Misleading Information

BCBSVT's presentation of its administrative cost ratio is misleading and appears to justify a higher than necessary administrative cost level. As I outlined in Finding 11 of my opinion of BCBSVT's May 11, 2017 presentation, BCBSVT uses statistics that takes the data out of context. They then rely on this problematic information to incorrectly assert that BCBSVT is operating at or near optimal administrative efficiency. BCBSVT should use more appropriate statistics when comparing their administrative costs to other companies. Otherwise, the Board should take caution when using this information to assess a reasonable and fair administrative cost level.

In addition to administrative cost, BCBSVT has other levers to mitigate rate increases which I outline in the next sub-section.

3.4 Action Recommended: Note Available Cost-Saving Options

Given the fact that I am proposing lower rates which in turn would increase the risk of adverse financial performance, I identified levers BCBSVT has available to them over the next two years to create additional margin in the rates through management actions. Financial health of BCBSVT is important to consumers. In my review, I believe BCBSVT is currently within their desired range of financial strength and well above regulatory minimums. Further, through the remaining findings, I identified 5 practices that BCBSVT could implement to improve financial strength without passing through additional rate increases to consumers:

- Expanded use of risk contracts which penalize providers for high utilization would protect BCBSVT from higher than anticipated utilization trend.
- BCBSVT should evaluate and/or model how to avoid an adverse selection spiral. Such a spiral will lead to ever declining participation of healthy consumers and ever increasing rates. Avoiding such a spiral is in the clear interest of consumers and the Board.
- BCBSVT should implement the trend mitigation activities listed in section 2.3. Such an action would improve financial performance and reduce rate increases in future periods.
- BCBSVT should develop programs which provide a return on investment of the rewards paid to members. Such programs lower future medical costs borne by the insurer and reduce rate increases in future periods.
- BCBSVT identified historic issues that lead to financial losses in 2016 which I outlined in Section 2.8. I reviewed the rate filings and believe that by using the actual 2016 claims to project future costs, the 2018 rate filing corrects for historic issues which drove BCBSVT losses in 2016 without additional need to increase the trend. I believe the proposed rates with the reductions I outlined in 3.1 are adequate for BCBSVT to cover anticipated claims costs, anticipated administrative costs, and still retain a positive margin for contribution to surplus.¹¹

¹¹ To illustrate using simple numbers: if an insurer expected to pay \$100 worth of claims costs in 2016, but it actually paid \$110 in claims costs, the insurer can account for the loss by using 2016 as the base experience period and as such the starting point of rates is now \$110. The question an actuary might raise is if the extra \$10 is a trend or is it an isolated one time issue. The causes of BCBSVT's 2016 losses are not likely to be repeated in 2017 or 2018, hence not a trend. These issues should be treated as a one-time issue as doing otherwise would be double counting. In my review I identified that the BCBSVT calculations are based on actual 2016 claims, therefore, taking into account BCBSVT's 2016 losses.

Appendix A: Impact of Excessive Aging Trend

In section 2.2, I explained that the aging trend in BCBSVT’s filing is unsupported by evidence. My recommendation is to assume age demographics will remain at their March 31, 2017 levels in 2018. The effect of this adjustment on rates can be estimated by updating the table at the bottom of page 12 of the Actuarial Memorandum.

Table A.1 below demonstrates how I estimated the impact of the excessive aging trend, using the BCBSVT formula. When the revised factor is incorporated into the rate models, the proposed rates should be reduced by about 0.5%.

Table A.1 Recast of Aging

Recast Calculation of the Demographic Adjustment		
	BCBS VT	Updated
Experience Period Average Age-Sex Factor	1.2581	1.2581
March 31, 2017 Average Age-Sex Factor	1.2644	1.2644
Projected Period Average Age-Sex Factor	1.2707	1.2644
Demographic Adjustment (1+c3 on Exhibit 5)	1.0100	1.0050
	Rate Impact	-0.5%

BCBSVT and L&E actuaries should apply this change to their rating models. The rating models will adjust for details of the rating formula including adjustment for administrative costs.

Appendix B: Impact of Excessive Utilization Trend

In section 2.3, I explained that BCBSVT did not select statistics which appropriately explain the utilization trend factor used in the filing. I believe that an appropriate trend is between 0% and 1% based on the historical average rolling 12 trend distribution and recommend holding BCBSVT to the 0.7% trend filed by MVP.

This appendix explains my review and recast of the BCBSVT utilization trend factor. I believe L&E and BCBSVT actuaries can replicate this process and adjust their rate models accordingly.

- 1) First, I replicated the BCBSVT regression statistics using data supplied in the rate filing. Specifically, I used the statistics in Exhibit 3B.
- 2) Second, I isolated 2013 to 2015 data and used the BCBSVT regression methods (from the current rate filing) to project 2016 results.

The results of this step did not predict the actual 2016 trend increase of 2.3% - so I deemed these statistics were not reasonable to use in predicting 2018 utilization and severity trend. Thus, they do not justify that the BCBSVT trend should be increased.

Table B.1: Regression Replication and Recast

	PMPM - 36 Months	PMPM - 24 Months	PMPM - 12
BCBS Exhibit	3.1%	4.4%	10.6%
HMA Replication of BCBS	3.1%	4.4%	10.6%
HMA 2013 to 2015 Backcast	-0.9%	4.4%	11.0%
BCBS Reported Actual 2016		2.3%	

- 3) Next, I used three approaches to estimate the appropriate utilization trend:
 - a. I reviewed last year's rate filing: BCBSVT used a utilization trend of 1% in SERFF. I believe this is more reasonable. As it was agreed upon in last year's Board hearing I assume there was valid evidence to support this level. I do not believe BCBSVT has provided any evidence to increase it from this level.
 - b. I evaluated relevant statistics: I believe the utilization and severity trend should fall somewhere between the median historic rolling 12 trend and the mean historic rolling 12 trend. I used the "Rolling 12 Adjusted PMPM" column in Exhibit 3B to calculate the rolling 12 trend (Example [Dec-14 / Dec-13 - 1%]). Table B.2 demonstrates the summary statistics of 25 measurements of rolling 12 trend which can be estimated from the data set. The average trend was below 0% and the median trend around 1%. Using a trend somewhere between the mean and the median would protect BCBSVT's actual trend in most years and still provide some conservatism against historic results.
 - c. Benchmark against competitor's filing: MVP proposes a 0.7% utilization trend for 2018 and includes no adjustment for severity mix.

Table B.2 Statistics Reviewed

Key historical Statistics	
Average	-0.3%
Median	1.0%
Min	-6.6%
Max	3.0%
Competitor Trend	0.7%
HMA Recommendation	0.7%

4) Finally, I calculated the impact to the rates if a 0.7% utilization trend is used in place of BCBSVT's assumption. Table B.3 is the summary of my calculation.

Table B.3 Estimate of Impact

Label	Item	Value	Description
A	2016 Total Claims	\$ 534.77	Source Section 1 URRT - pg 45 SERF
B	2016 Rx Claims	\$ 81.74	Source Section 1 URRT - pg 45 SERF
C	Initial Compounded Trend	1.0404	= 1.02^2 (2% BCBS trend compounded 2 years)
D	Updated Util Trend	1.0140	= 1.007^2 (HMA recommendation compounded)
E	Change in Trend	-2.5%	$E = D / C - 1$
F	% Medical Component	84.7%	$F = [A - B] / A$
G	Impact	-2.1%	$G = E \times F$

5) BCBSVT and L&E actuaries should apply this change in their rating models. The rating models will adjust for details of the rating formula including adjustment for administrative costs. As medical claims are only about 88% of premium, the impact of the utilization change will be closer to 1.9% ($88\% \times 2.1\% = 1.9\%$).

Therefore if my recommendation to lower BCBSVT's utilization trend to 0.7% is implemented, BCBSVT's overall proposed rate increase will decrease by 1.9%.

Appendix C: Impact of Excessive CTR Adjustment

In section 2.8 I explain that the recommended 2% Contribution to Reserves (CTR) is too high. I recast BCBSVT exhibit 7B under assumptions I believe are more reasonable.

- 1) I adjusted the projected premium increase to use the 5.4% medical trend assumption from the BCBSVT URRT. RBC is calculated based on claims rather than premium, so it is more appropriate to use the claims trend.
- 2) I removed all other allocation of the investment results to be more consistent with BCBSVT's stated overhead.
- 3) I targeted 500% RBC ratio which is the low end of the BCBSVT target. This is reasonable given the high rate increase sought.

Table C.1 presents my recast of the BCBSVT exhibit. Please note that there were errors in the BCBSVT exhibit formula labels which I left in Table C.1 to maintain consistency. (I believe these errors were from converting this analysis from Large Group to QHP). While labels were incorrect, the formulas were in line with expectations and I used their formulas to replicate these calculations in Microsoft Excel.

Table C.1: BCBSVT CTR Calculation with Recommended Assumptions

<u>Minimum Required CTR Calculation</u>		2017 Forecast			Restated to Reflect QHP Premium Increases to 2018	
		Share of Capital		Projected	Share of Capital	
<u>BCBSVT Enterprise Totals</u>		Premium	Requirement	Claims Trend	Premium	Requirement
QHP	A	\$417,566,717	84.84%	5.4%	\$440,115,320	85.50%
BCBSVT and TVHP Large Group Insured	B	\$74,631,421	15.16%		\$74,631,421	14.50%
All Other	C					
Investment Income	D		\$4,598,707			\$4,598,707
Tax Rate	E		20%			20%
Investment Income Net of Taxes	F = D x (1-E)		\$3,678,966			\$3,678,966
QHP Share of Investment Income	G = F x B%		\$3,121,128			\$3,145,565
Estimated YE 2017 Authorized Control Level (ACL)	H		\$23,495,304			
Estimated ACL Reflecting QHP Premium Increases to 2018	J		\$24,571,672			
Increase in Capital Required to Maintain Target RBC	K = 500% x (J-H)		\$5,381,839			
Additional Required Grossed Up for FIT	L = K/(1-E)		\$6,727,299			
CTR Required from QHP in 2018	M = L-G		\$3,581,735			
Required QHP Insured CTR Factor to Maintain Target RBC	CTR = M/\$B					0.8%

Appendix D: Impact of Compounding Conservatism

I identified findings related to trend, other adjustments and administrative expense increases which demonstrate BCBSVT uses conservative rating adjustments. I believe the compounding of these 3 items lead to a material impact on rates. In this appendix, I provide the information needed to adjust the rates to remove this excess. Each calculation includes a formula which was performed in Microsoft Excel.

Step 1: Estimate Impact of Finding 6: Excessive Dental Trend

Table D.1 demonstrates the impact of the recommended change in Dental Trend from the 10.3% that BCBSVT estimates and the 4% industry trend. The trend is compounded over 2 years and the difference when applied to the experience PMPM is about \$0.25. To perform this calculation, we relied on information presented by BCBSVT in page 23 of their Actuarial Memorandum

Table D.1 Impact of Dental Trend Adjustment

		BCBS VT	HMA Update
2016 Dental Exp (pg 23 Memo)	A	\$1.82	\$1.82
Trend Projection (2 years)	B	1.217	1.0816
Projected Dental PMPM	C = A x B	\$2.21	\$1.97
	Difference BCBSVT & HMA		(\$0.25)

Step 2: Estimate Impact of Finding 8: Net Cost of Reinsurance

On page 15 of the Actuarial Memorandum BCBSVT states the net cost of reinsurance to be \$1.65 PMPM. There was no back up to justify that the levels of reinsurance are appropriate, whether the rate BCBSVT negotiated was reasonable, or any description of the experience refund from the reinsurer. In my experience, most reinsurers pay an experience refund of 40% to 80% of the cost of reinsurance over the claims paid back to the insurer. As such, I estimate the impact of this item as a range. My recommendation is that BCBSVT apply the terms of their actual reinsurance contract but no less than the minimum range presented.

Table D.2: Estimate of Reinsurer Experience Refund

		Low Range	High Range
Reinsurance in excess of claims	A	\$1.65	\$1.65
Reinsurer anticipated Rebate Level	B	40%	80%
Potential Expected Reduction	C = - A x B	(\$0.66)	(\$1.32)

Step 3: Estimate Impact of Finding 12: Reduction in Administrative Cost Increase

Table D.3 demonstrates the impact of the recommended change in administrative cost increase trend from the 3% merit that BCBSVT estimates and the 1.4% realized increase. I replicated the BCBSVT methodology of reflecting only employee costs in the trend but using half of the 3% BCBSVT used to be

consistent with historical experience. The BCBSVT administrative cost increase is calculated in an exhibit located on page 28 of the Actuarial Memorandum. After reflecting the lower administrative cost increase, that calculation results in an \$0.82 lower administrative PMPM.

Table D.3 Replicated Summary of Base Administrative Charges Calculation

		BCBS VT	HMA Update
Experience Base Administrative Charges	A	\$33.28	\$33.28
Exclusion of non-recurring expenses	B	(\$0.31)	(\$0.31)
Trend Projection (2 years)	C	1.0495	1.0246
Projected Base Administrative Charges	D = (A-B) x C	\$34.60	\$33.78
	Difference		(\$0.82)

Note D = (A + B) x C, but the equation was incorrect in the BCBSVT filing. Table D.3 retains the BCBSVT equation for consistency

Step 4: Summarize the resulting range and estimate a percent of premium.

I summarized the 3 components and developed a range of \$1.72 to \$2.38 PMPM reduction. BCBSVT will make these reductions directly into their rating models but to estimate the impact I divided the PMPM savings by the average 2016 premium of 462.20 shown on the URRT page 45 in the original SERFF filing. This resulted in a reduction of .3% to .5% of premium.

Appendix E: Peter J. Horman Curriculum Vitae

Peter J. Horman, FSA MAAA

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Summary

Peter Horman has close to 20 years of experience in the actuarial and healthcare field with both insurers and provider groups as well as an MS degree in Mathematics from Colorado State University. Peter has expertise in actuarial rate development, including having led development of exchange rate filings on behalf of health insurers while acting as Chief Actuary each year since the inception of the Affordable Care Act (ACA).

In 2015, Peter started Horman Mathematical and Actuarial Solutions, Inc. (HMA Solutions). HMA Solutions is a consulting firm committed to applying complex mathematical, actuarial, and data techniques to solve problems in the healthcare industry. Prior to founding HMA Solutions, Peter was the Chief Actuary of Neighborhood Health Plan, a Partners affiliate, where he was responsible for leading the company through the financial challenges of the ACA transition. At Neighborhood Health Plan, Peter led all actuarial and underwriting functions, including financial forecasting, risk based capital planning, and design of provider risk contracts.

Peter has been active in the Massachusetts health insurance market since 2004 when he started at Harvard Pilgrim Health Care (HPHC). As one of the initial members of the post-receivership HPHC actuarial staff, Peter helped build new actuarial systems, data reporting systems, and the actuarial team. His final role at HPHC was as Corporate Actuary in which he was responsible for provider-facing roles, financial forecasting, and HPHC's Medicare lines of business. Prior to his work with HPHC Peter worked for CIGNA and Milliman, and very early in his career he spent six years in a hospital setting.

Experience

Horman Mathematical & Actuarial Solutions, Needham MA

June 2015 to Present

Owner & Consulting Chief Actuary

- Owner and founder of actuarial consulting firm focused on practical and sustainable solutions for some of the healthcare industry's most complex problems
- Developed a unique market solution to help ACOs understand potential adverse results of their risk contracts and satisfy a new Massachusetts law requiring risk-bearing provider organizations to perform financial simulations of reserve adequacy
- Developed ACA risk transfer model to assist large insurer in understanding and forecasting federal risk transfer models
- As consulting interim Chief Actuary for Neighborhood Health Plan, led core actuarial functions including rating, reserving, financial forecasting, and acted on clients' behalf in external-facing roles with customers, regulators, and provider groups

Neighborhood Health Plan, Boston, MA

June 2013 to May 2015

Chief Actuary (stayed on as Interim Chief Actuary on consulting basis Jun 15 to Oct 16)

- Chief Actuary of regional provider-owned health plan with close to \$2 billion of annual premium revenue in Medicaid and Commercial business lines
- Developed financial, cash, and capital planning through ACA growth transition
- Built Actuarial and Underwriting functional processes including rating, reserving, forecasting, trend, underwriting, and analytic reporting capabilities
- Demonstrated ability to hire, develop, and retain top actuarial and analytical talent
- Appointed Actuary for signing NAIC annual statements
- Developed communications and exhibits to explain complex actuarial principles to senior management, board of directors, and corporate parent
- Developed new and innovative provider payment models to help lead NHP in its transition to risk contracts

Harvard Pilgrim Health Care, Wellesley, MA

August 2004 to May 2013

Corporate Actuary

July 2010 to May 2013

- Directed staff of 11 actuaries/professionals and managed a \$2 million annual department budget
- Led rebuild of trend forecast process to improve responsiveness, reflect clinical insight, improve accuracy, and meet regulatory requirements
- Forecasted medical cost trend used in setting approximately \$3 billion of revenue in HPHC's commercial rating segments across 3 states
- Managed \$100 million block of individual and group supplemental Medicare coverage
- Key executive lead in launch of Medicare Advantage product, including network development, product design, and financial projections
- Qualified actuary responsible for development of claims and premium reserves
- Implemented new actuarial team responsible for corporate forecasting and monitoring responsibilities including supporting senior management in expense, growth, and profit planning
- Responsible for provider education and development of risk contracts

Actuarial Pricing & Modeling Manager

Sept 2007 to July 2010

- Managed team of four professionals, responsible for supporting rating area in product pricing and rating strategies
- Actively involved in corporate IT strategy including product data management system and new enterprise data warehouse integration
- Led initial product strategy for tiered and limited network plan designs

Actuarial Associate/Analyst

August 2004 to August 2007

- Built actuarial cost and utilization reporting application which became the foundation of plan pricing, trend development, Medicare pricing, and rate development

Colorado State University, Fort Collins, CO

Fall 2003 & Spring 2004

Mathematics Instructor & Tutor

- Independently taught a Matrices and Linear Equations course which included relevant pricing topics such as regression and Markov Chains

Milliman USA Denver Health, Denver, CO

March 2001 to August 2003

Actuarial Assistant

- Supported clients with actuarial rating, reserving, and trends analysis for government bids and new products
- Team member in building of large commercial carrier rating and pricing system
- Team member in developing Medical Underwriting guidelines which were one of the earliest forms of risk adjustment
- Responsible for understanding and analyzing Medicare and other provider fee schedules

CIGNA, Hartford, CT

June 1999 to February 2001

Consulting Actuary, Actuarial Development Program

- Employee benefits consultant and actuarial data analyst supporting actuaries and clients in pension and retiree medical plans
- Member of system conversion team which converted a legacy pension system to a more modern system designed to support web-enabled access

Education & Memberships

Colorado State University, M.S. Mathematics 2004

Thesis: Monte Carlo Integration-Convergence, Computing, & Improving

University of Connecticut, B.S. Actuarial Science 1999

Honors: 1999 New England Scholar and graduated cum laude

Fellow of the Society of Actuaries since 2008

Member of the American Academy of Actuaries since 2006

AHIP Executive Leader (Completed June 2013)

Publications

SOA Health Watch:

Articles can be found at <https://www.soa.org/sections/health/health-newsletter/>

May 2015, Issue 78, pg. 1: "A Modern Approach to Traditional Reserving"

May 2009, Issue 61, pg. 6: "Design and Pricing of Tiered Network Health Plans"¹²

¹² Previously Included on Society of Actuaries exam syllabus

Presentations

- Society of Actuaries, Health Meeting, June 2015, “Technical Approaches to ACO Risk”
- Society of Actuaries, Health Meeting, June 2015, “Revisiting Actuarial Opinions” (repeated in August 2015 at Society of Actuaries Valuation Symposium)
- Society of Actuaries, Health Meeting, June 2011, “Provider Network Strategy”

Recent Participation in Public Rate Hearings

Jan 11, 2016 Massachusetts Rate Hearing: Participated as the Chief Actuary on behalf of Neighborhood Health Plan. Testified before the Massachusetts Division of Insurance. The link below is to the hearing notice and proposed schedule.

- <http://www.mass.gov/ocabr/docs/doi/healthcare-2016-informational-hearing.pdf>

Sept 24, 2012 Public Hearing Concerning Premium Rates In Health Insurance Market: Participated as the Corporate Actuary on behalf of Harvard Pilgrim. Testified before the New Hampshire Insurance Department. The hearing was focused on items driving premium rate increases. The link below is to a transcript of the hearing.

- https://www.nh.gov/insurance/consumers/documents/2012_rate_hearing.pdf

Appendix F: Actuarial Standards of Practice & Signature

This appendix includes Actuarial Standards of Practice (ASOPs) which I believe are relevant to my review. I used these ASOPs in constructing my actuarial opinion reflected in this document.

ASOPs

ASOP No. 5, Incurred Health and Disability Claims: Outlines adjustments which are appropriate for evaluating and projecting health claims.

ASOP No. 17, Expert Testimony by Actuaries: Outlines professional standards in place when an actuary acts as an expert witness. This ASOP defines actuarial opinion as, "A conclusion drawn by an actuary from actuarial knowledge or from the application of one or more actuarial methods to a body of data."

ASOP No. 23, Data Quality: I relied on data supplied by BCBSVT and other sources during this review. ASOP 23 outlines an actuary's responsibility when relying on data from other sources.

ASOP No. 41, Actuarial Communications: Outlines appropriate terms of an actuarial communication representing a statement of actuarial opinion.

Signature

This document reflects my Actuarial Opinion.



Signed on 7/11/2017

Peter Horman, FSA MAAA
Owner & Consulting Chief Actuary
Horman Mathematical & Actuarial Solutions, Inc.