

May 15, 2020

Mr. Kevin Ruggeberg, A.S.A., M.A.A.A.  
Consulting Actuary  
Lewis & Ellis, Inc.

**Subject: Your 05/06/2020 Questions re: Blue Cross and Blue Shield of Vermont  
3Q 2020 Large Group Rating Program Filing (SERFF Tracking #: BCVT-131835151) and  
re: The Vermont Health Plan 3Q 2020 Large Group Rating Program Filing (SERFF Tracking  
#: BCVT-131835292)**

Dear Mr. Ruggeberg:

In response to your requests dated May 6, 2020, here are *your questions* and our answers:

*1. How do the utilization trends in Vermont compare to the Blue Trend Survey or other nationwide utilization trends?*

According to one survey released prior to the onset of the COVID-19 pandemic, medical trend was expected to increase in 2020<sup>1</sup>. One of the reasons listed for an escalation in trend was the utilization of services from individuals with chronic conditions.

A proprietary source notes increasing trends, with a listed source of medical utilization increases being the greater use of diagnostic tests and treatments.

Particular to Vermont, we note that in its large group filing, CIGNA developed both national and Vermont-specific medical trends<sup>2</sup>. The 2020 Vermont trend is 7.96 percent, compared to the national trend of 6.75 percent. While CIGNA commented they set their utilization and mix-of-service trend nationally, they noted, "In 2019, nationally as well in VT, we saw increased utilization above previous trends and expected forecasts leading to an increase vs. plan."<sup>3</sup>

In comparison, the filed medical utilization trend on this filing is lower than the approved trend on the Q3 2019 filing, which is favorable relative to the national trends noted above.

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<sup>1</sup> Medical Cost Trend: Behind the Numbers 2020, page 10  
<https://www.pwc.com/us/en/industries/health-industries/assets/pwc-hri-behind-the-numbers-2020.pdf>

<sup>2</sup> GMCB-001-20rr.

<sup>3</sup> Response to Objection 7:  
[https://ratereview.vermont.gov/sites/dfr/files/Objection%20Letter%20Cigna%20Responses%204\\_8\\_20\\_v2.pdf](https://ratereview.vermont.gov/sites/dfr/files/Objection%20Letter%20Cigna%20Responses%204_8_20_v2.pdf)

2. *Provide quantitative support for the unit cost trends on page 10 of the Actuarial Memorandum*

This question involves confidential and proprietary information and has been provided under separate cover.

In preparing the response to this objection, we discovered a formula error in the unit cost trend development. The correct BCBSVT Non-Managed Care unit cost trend is 4.4 percent rather than the reported 4.3 percent. The BCBSVT Managed Care and TVHP Managed Care trends remain 4.4 percent.

3. *Please provide Exhibits 2B, 2D, and 2E in excel format.*

Please see the attached file *Response to Q3 2020 LG Filing 05.06.2020 Inquiry - Q3.xlsx* for the requested exhibits.

4. *It appears that no adjustments were made to the experience for potential impacts of COVID-19 on future costs. Please describe the Company's rationale for not incorporating an impact.*

The COVID-19 pandemic introduces unique and immense uncertainty into actuarial projections of 2021 claims costs. The underlying demand for services that is reflected in our baseline trends certainly exists; however, it is far from clear whether the supply of those services will be affected by the pandemic or its fallout, thereby impacting utilization. Furthermore, there is little to no clarity related to additional costs that should be expected due to COVID-19 and with respect to the deferral of non-emergent care while social distancing measures are in effect.

There are four main categories of considerations regarding the cost of health care services in 2021.

Direct costs of COVID-19 treatment: Information is emerging on the cost of treating a COVID-19 patient experiencing varying degrees of severity and in different settings. However, the overall infection rate remains murky. While the current wave of infection seems to be diminishing, it is possible that additional waves will follow when social distancing is relaxed, at the onset of the winter flu season, or even as a continual challenge fueled by a lower but steady rate of transmission. It is likely that infection will continue until a vaccine is available. The intermediate-term cost of follow-up care for patients who have recovered from an initial bout with COVID-19 could be considerable. These additional costs will be countered by additional deferrals of non-emergent care should social distancing measures become necessary into 2021. It cannot be predicted with any degree of certainty which directional impact will be greater in 2021.

Costs of COVID-19 preventive services: Most experts suggest that the fastest a vaccine could reach the market is within 12 to 18 months. This time frame would place vaccine availability squarely within the time period covered by this filing. While there has been some speculation as to the potential cost of administering the vaccine, estimates vary widely. Current law would require that insurers cover these costs with no member liability. Depending upon their availability and the extent to which they play a role in the

government response to the pandemic, antibody tests may be pervasively used as well. These, too, would be covered at zero cost share. Future government actions will dictate the extent to which these costs impact insurer liability in 2021.

Impact of the deferral of non-emergent care: Some portion of deferred care will be foregone altogether, while other services will have only been delayed. The timing of the return of the delayed care will depend upon the timing and severity of additional waves of infection and periods of social distancing. It seems likely that many providers will be operating at or above capacity for at least a portion, and perhaps a significant portion, of 2021 as they endeavor to meet demand and to make up for lost revenue during periods of social distancing. Furthermore, there are concerns about a worsening of the health status of the population following the delay or elimination of preventive and other care. Mental health is of particular concern given the additional stress generated by the health and financial crisis. It is clear that population health will worsen as a result of the pandemic, but the magnitude of the deterioration is difficult to predict.

Impact of economic factors: The covered population itself may change substantially from the currently-enrolled population. It seems likely that continued unemployment will reduce the size of the large group market. There are some selection concerns inasmuch as younger, presumably healthier, employees may be more likely to be let go. Naturally, there is a revenue impact here as well, as uncollectible premium may increase.

The various impacts of the COVID-19 pandemic will impact 2020 and 2021 costs, and they will do so in both an upward and a downward direction. Based on information currently available, it is difficult to so much as predict an overall directional impact for the time period covered by this filing, particularly because future government actions will drive the timing and magnitude of many of the above considerations. We believe that it is entirely reasonable to forecast that the ongoing pandemic will increase claims costs beyond the levels projected within this filing. BCBSVT has long maintained that a pandemic is one reason to hold surplus. Given that the designed function of policyholder reserves is to weather the types of uncertainties created by a pandemic without resorting to extreme rate fluctuations, any increased cost due to the COVID-19 pandemic will be funded through policyholder reserves. Therefore, at the direction of management, the addition of a COVID-related factor of any magnitude would be offset by a reduction in CTR of equal and opposite magnitude, resulting in no change to the large group rates calculated based upon the formula and factors herein. Furthermore, based on information known at the time of filing, we see no reason to believe that the best estimate of the pandemic impact is a *decrease* in 2021 claims costs. BCBSVT senior management views BCBSVT's primary responsibility to Vermonters for the duration of the COVID-19 crisis as maintaining continuity of coverage and claims payments. This necessitates that BCBSVT continues to rate appropriately in order to provide flexibility to customers and providers who are struggling financially. We therefore include a COVID-19 impact of zero within these formulae and factors.

5. *Please confirm that the proposed rates for BCBSVT and TVHP differ only in relation to the network differences, or describe and support all other differences*

We confirm the proposed rates between BCBSVT and TVHP differ only in relation to network differences.

6. *Explain the apparent discrepancy between the "Impact of Formula and Factor Change" table in the memorandum and the "Manual Rate Development" table. The first shows a manual rate increase of 1.4% and an overall claims increase of 3.0%. The latter shows the manual rate increasing by about 9%.*

The "Impact of Formula and Factor Change" shows the total premium change attributable to the change in the manual rate. While the manual rate is increasing 9.0 percent, it affects the total premium to a lesser degree due to blending with experience and non-claim premium components.

7. *Please clarify the precise meaning of the values in "Impact of Formula and Factor Change".*
- What is the credibility of the hypothetical group use to calculate these figures?*
  - Provide the change in manual rate claims for a (hypothetical) 0% credibility group.*
  - The description says that it reflects "the impact of the trend factors outlined in this filing on experience claims". Does the 1.6% include the anticipated impact of changes to experience claims themselves? If not, please quantify this impact.*

This filing establishes the formula and factors used to rate fully insured large groups. As such, the primary effect of this filing on fully insured large groups are the formula and factors outlined in this filing. A predominant driver of the rate change for every group is the change in each group's underlying experience between when rates were developed for in-force premium and when rates will be developed for the subsequent rating period. Given this, each group will have a different rate change that is dependent on this experience. The increase outlined in the "Impact of Formula and Factor Change" section shows the increase a group with average credibility would see due to the changes in formulas and factors. Each group's specific experience change, which is based on factual data, will impact their rate as well. By removing the impact of the change in underlying experience, we remove the effect of the change in each group's experience over time, which will occur irrespective of this filing, and instead illustrate the impact of the change of formula and factors.

- The average credibility for large groups we expect to renew in 2021 is 78.6 percent.
  - For a hypothetical 0% credibility group, the change in manual claims is 9.0 percent, as reported in memo section 6.1. We note that there are no zero-credibility groups in our book.
  - As described above, the 1.6 percent does not include the impact of changes in any group's experience, as this quantity is unknowable prior to the time of rating and is particular to each group.
8. *Please list all differences between the prior rating manual and the proposed rating manual affecting insured groups, including age factor changes, etc.*

There are two changes to the rating manual:

- We updated the benefit relativity model to consider non-single contract tiers when calculating the actuarial value for a given plan design.
- We used simulated paid claims in the base data used to generate aggregate stop loss factors. We previously used allowed claims, which we believe underestimated the variance.

9. *For the insured groups affected by this filing in aggregate, compare the actual 2019 claims experience to the expected 2019 claims experience implied by last year's rate filing.*

The Q3 2019 rate filings are predominately used to develop rates for 2020. To develop a 2019 implied claim experience cost, we can remove a year of trend from the Q3 2019 manual rate. However, certain components of trend, such as unit cost increases and pharmacy discount factors, are not linear. To compute the 2019 experience implied by last year's rate filing, we divide the manual rate by the 12-month paid trend.

2019 Implied Claims Experience PMPM		
Q3 2019 Manual Rate	A	\$548.01
Q3 2019 Paid Trend	B	1.0831
2019 Implied Claims Experience PMPM	$C = A / B$	\$505.95

Based on the 2020 manual rate, we expected \$505.95 PMPM in claims for 2019. The actual 2019 experience of groups affected by this filing serves as the experience base for the manual rate proposed in this filing. Using the information provided in the manual rate development, we calculate a 2019 paid claims amount in the table below.

2019 Actual Paid Claims PMPM		
Incurred and Paid Experience Paid Claims, capped at \$350,000	A	\$53,035,577
Estimated IBNR	B	\$399,235
Expected Claims between \$350,000 and \$1,000,000	C	\$1,620,270
Total Member Months	D	108,619
2019 Actual Paid Claims PMPM	$E = (A + B + C) / D$	\$506.99
2019 Implied Claims Experience PMPM	F	\$505.95
2019 Actual to Implied Variance	$G = E / F$	0.2%

10. *Please confirm that the "Facility" and "Professional" claims used to develop utilization and unit cost trends exclude claims relating to pharmaceuticals covered by the medical benefit.*

We confirm the facility and professional claims in utilization and unit cost trend exclude pharmaceuticals covered by the medical benefit.

11. *Provide actual administrative costs PMPM for 2019.*

The experience period used to develop the administrative charges in the filing was January through November 2019. The experience PMPM for the large group lines of business was \$47.41. The administrative expenses including December 2019 are \$47.73 PMPM.

While answering this question, we discovered that we inadvertently neglected to remove the costs associated with GMCB billback charges for TVHP from the base experience. Doing so reduces the experience PMPM from the filing to \$46.96. Including December 2019 in the

experience, the PMPM is \$47.25. At the end of the review process, we will update the administrative charges to reflect the removal of the GMCB billback amounts for TVHP.

Please let us know if you have any further questions, or if we can provide additional clarity on any of the items above.

Sincerely,

A handwritten signature in black ink, appearing to read "Paul Schultz", with a long horizontal flourish extending to the right.

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Paul Schultz, F.S.A., M.A.A.A.

MEDICAL UTILIZATION TREND CALCULATION

Month	Membership	Original Allowed Claims (adjusted to the VHP network)			Adjusted Claims - Normalized for Contract Changes			ASF Normalization Factors		Working Day Normalization Factor		Adjusted Allowed Claims		
		Facility	Professional	Total Allowed Claims	Facility	Professional	Total Allowed Claims	Monthly ASF	ASF Normalization	Working Days	Working Day Normalization	Facility PMPM	Professional PMPM	Total PMPM
Nov-15	57,692										\$316.72	\$138.69	\$455.41	
Dec-15	57,890										\$272.01	\$126.86	\$398.88	
Jan-16	52,944										\$282.00	\$127.21	\$409.21	
Feb-16	52,655										\$284.86	\$126.25	\$411.11	
Mar-16	52,655										\$263.10	\$120.68	\$383.78	
Apr-16	52,628										\$270.52	\$121.65	\$392.17	
May-16	52,040										\$256.29	\$125.21	\$381.51	
Jun-16	52,000										\$266.93	\$122.52	\$389.46	
Jul-16	51,849										\$272.31	\$117.22	\$389.53	
Aug-16	51,743										\$253.14	\$117.81	\$370.95	
Sep-16	51,752										\$303.10	\$128.51	\$431.61	
Oct-16	51,944										\$285.76	\$131.79	\$417.55	
Nov-16	51,926										\$311.53	\$141.71	\$453.23	
Dec-16	51,220										\$301.27	\$137.09	\$438.36	
Jan-17	54,466										\$276.58	\$131.98	\$408.56	
Feb-17	54,376										\$253.40	\$122.58	\$375.98	
Mar-17	54,286										\$261.20	\$123.58	\$384.78	
Apr-17	54,315										\$261.18	\$129.27	\$390.45	
May-17	54,511										\$272.85	\$130.10	\$402.95	
Jun-17	54,564										\$265.26	\$124.99	\$390.25	
Jul-17	54,781										\$309.21	\$132.88	\$442.08	
Aug-17	54,843										\$236.42	\$118.57	\$354.99	
Sep-17	54,384										\$262.14	\$130.44	\$392.58	
Oct-17	54,362										\$292.42	\$133.33	\$425.75	
Nov-17	54,513										\$288.40	\$144.00	\$432.41	
Dec-17	54,478										\$316.92	\$136.47	\$453.39	
Jan-18	52,507										\$297.59	\$137.07	\$434.66	
Feb-18	52,433										\$294.54	\$137.20	\$431.74	
Mar-18	52,332										\$259.13	\$131.45	\$390.58	
Apr-18	52,560										\$295.32	\$134.77	\$430.08	
May-18	52,733										\$271.99	\$136.62	\$408.61	
Jun-18	52,720										\$266.88	\$129.44	\$396.32	
Jul-18	53,446										\$266.21	\$130.33	\$396.55	
Aug-18	53,468										\$266.07	\$122.69	\$388.75	
Sep-18	53,278										\$309.27	\$140.30	\$449.57	
Oct-18	53,566										\$284.91	\$139.38	\$424.29	
Nov-18	53,900										\$282.84	\$140.20	\$423.04	
Dec-18	53,803										\$323.57	\$150.72	\$474.29	
Jan-19	54,540										\$297.87	\$136.52	\$434.39	
Feb-19	54,495										\$295.40	\$135.15	\$430.55	
Mar-19	54,459										\$302.63	\$140.46	\$443.09	
Apr-19	54,100										\$272.02	\$134.38	\$406.40	
May-19	53,986										\$284.05	\$134.84	\$418.89	
Jun-19	53,631										\$299.13	\$134.94	\$434.07	
Jul-19	52,969										\$304.12	\$135.34	\$439.46	
Aug-19	52,672										\$271.78	\$125.85	\$397.63	
Sep-19	52,492										\$267.79	\$129.76	\$397.55	
Oct-19	52,336										\$320.69	\$143.89	\$464.58	

REDACTED

YE 201910 Average:  Annual Trend:  3.04%  1.38%  2.50%

MEDICAL UTILIZATION TREND CALCULATION

Utilization Trend Calculation - Facility - 48 Month

Month	Membership	Adjusted Allowed Claims PMPM	Logistic Regression		Linear Regression		Holt-Winters' Multiplicative		Holt-Winters' Additive		Double Exp Smoothing	
			Fitted PMPM	Rolling 12 PMPM	Fitted PMPM	Rolling 12 PMPM	Fitted PMPM	Rolling 12 PMPM	Fitted PMPM	Rolling 12 PMPM	Fitted PMPM	Rolling 12 PMPM
Nov-15	57,692	\$316.72	\$273.37		\$273.97							
Dec-15	57,890	\$272.01	\$273.72		\$273.72						\$316.72	
Jan-16	52,944	\$282.00	\$274.09		\$274.71						\$300.66	
Feb-16	52,655	\$284.86	\$274.46		\$275.09						\$293.94	
Mar-16	52,655	\$263.10	\$274.80		\$275.45						\$290.65	
Apr-16	52,628	\$270.52	\$275.17		\$275.82						\$280.73	
May-16	52,040	\$256.29	\$275.53		\$276.19						\$277.02	
Jun-16	52,000	\$266.93	\$275.90		\$276.57						\$269.54	
Jul-16	51,849	\$272.31	\$276.26		\$276.94						\$268.55	
Aug-16	51,743	\$253.14	\$276.63		\$277.31						\$269.86	
Sep-16	51,752	\$303.10	\$277.00		\$277.69						\$263.80	
Oct-16	51,944	\$285.76	\$277.36	\$275.32	\$278.06	\$275.97					\$277.87	
Nov-16	51,926	\$311.53	\$277.73	\$275.70	\$278.44	\$276.36	\$316.72		\$316.72		\$280.67	
Dec-16	51,220	\$301.27	\$278.09	\$276.07	\$278.80	\$276.75	\$271.91		\$271.91		\$291.72	
Jan-17	54,466	\$276.58	\$278.47	\$276.45	\$279.18	\$277.13	\$282.56		\$282.59		\$295.12	
Feb-17	54,376	\$253.40	\$278.84	\$276.82	\$279.56	\$277.51	\$285.58		\$285.61		\$288.44	
Mar-17	54,286	\$261.20	\$279.18	\$277.20	\$279.90	\$277.89	\$263.29		\$263.23		\$275.83	
Apr-17	54,315	\$261.18	\$279.55	\$277.57	\$280.28	\$278.26	\$270.52		\$270.52		\$270.53	
May-17	54,511	\$272.85	\$279.92	\$277.94	\$280.64	\$278.64	\$255.94		\$255.71		\$267.13	
Jun-17	54,564	\$265.26	\$280.29	\$278.30	\$281.02	\$279.01	\$266.71		\$266.47		\$269.14	
Jul-17	54,781	\$309.21	\$280.66	\$278.67	\$281.39	\$279.38	\$271.98		\$271.70		\$267.70	
Aug-17	54,843	\$236.42	\$281.04	\$279.04	\$281.77	\$279.75	\$253.58		\$253.42		\$282.56	
Sep-17	54,384	\$262.14	\$281.41	\$279.40	\$282.14	\$280.12	\$303.55		\$303.31		\$265.95	
Oct-17	54,362	\$292.42	\$281.78	\$279.76	\$282.51	\$280.49	\$285.41	\$277.17	\$285.00	\$277.02	\$264.53	\$276.52
Nov-17	54,513	\$288.40	\$282.16	\$280.13	\$282.89	\$280.85	\$314.14	\$277.11	\$313.75	\$276.93	\$274.50	\$276.02
Dec-17	54,478	\$316.92	\$282.52	\$280.49	\$283.25	\$281.21	\$282.19	\$277.94	\$281.42	\$277.70	\$279.45	\$275.07
Jan-18	52,507	\$297.59	\$282.90	\$280.85	\$283.63	\$281.58	\$278.74	\$277.62	\$278.04	\$277.32	\$292.88	\$274.83
Feb-18	52,433	\$294.54	\$283.28	\$281.21	\$284.01	\$281.94	\$271.74	\$276.48	\$271.13	\$276.13	\$294.55	\$275.29
Mar-18	52,332	\$259.13	\$283.63	\$281.58	\$284.35	\$282.31	\$262.39	\$276.44	\$261.77	\$276.05	\$294.52	\$276.79
Apr-18	52,560	\$295.32	\$284.01	\$281.95	\$284.73	\$282.68	\$267.29	\$276.20	\$266.75	\$275.77	\$281.79	\$277.73
May-18	52,733	\$271.99	\$284.38	\$282.32	\$285.10	\$283.05	\$264.32	\$276.94	\$263.86	\$276.49	\$286.61	\$279.35
Jun-18	52,720	\$266.88	\$284.76	\$282.69	\$285.48	\$283.42	\$268.67	\$277.13	\$268.40	\$276.67	\$281.33	\$280.38
Jul-18	53,446	\$266.21	\$285.13	\$283.07	\$285.84	\$283.79	\$290.10	\$278.65	\$289.56	\$278.17	\$276.10	\$281.11
Aug-18	53,468	\$266.07	\$285.51	\$283.44	\$286.22	\$284.17	\$249.46	\$278.36	\$249.55	\$277.90	\$272.51	\$280.26
Sep-18	53,278	\$309.27	\$285.90	\$283.82	\$286.60	\$284.54	\$291.44	\$277.30	\$291.16	\$276.85	\$270.15	\$280.64
Oct-18	53,566	\$284.91	\$286.27	\$284.20	\$286.96	\$284.92	\$294.22	\$278.03	\$293.84	\$277.58	\$284.16	\$282.31
Nov-18	53,900	\$282.84	\$286.65	\$284.58	\$287.34	\$285.30	\$311.45	\$277.77	\$310.90	\$277.30	\$284.40	\$283.15
Dec-18	53,803	\$323.57	\$287.02	\$284.97	\$287.71	\$285.68	\$303.95	\$279.61	\$303.20	\$279.14	\$283.81	\$283.52
Jan-19	54,540	\$297.87	\$287.41	\$285.34	\$288.09	\$286.05	\$294.70	\$280.97	\$294.40	\$280.53	\$298.06	\$283.99
Feb-19	54,495	\$295.40	\$287.80	\$285.72	\$288.46	\$286.42	\$289.53	\$282.45	\$289.49	\$282.06	\$297.98	\$284.32
Mar-19	54,459	\$302.63	\$288.15	\$286.10	\$288.81	\$286.79	\$269.60	\$282.99	\$270.33	\$282.72	\$297.03	\$286.23
Apr-19	54,100	\$272.02	\$288.53	\$286.47	\$289.18	\$287.16	\$288.59	\$284.74	\$288.80	\$284.53	\$299.02	\$286.01
May-19	53,986	\$284.05	\$288.91	\$286.85	\$289.55	\$287.53	\$277.06	\$285.77	\$277.76	\$285.66	\$289.31	\$286.23
Jun-19	53,631	\$299.13	\$289.30	\$287.22	\$289.93	\$287.90	\$278.03	\$286.52	\$278.87	\$286.50	\$287.39	\$286.73
Jul-19	52,969	\$304.12	\$289.67	\$287.59	\$290.29	\$288.26	\$292.19	\$286.69	\$292.52	\$286.74	\$291.58	\$288.01
Aug-19	52,672	\$271.78	\$290.06	\$287.97	\$290.67	\$288.63	\$267.67	\$288.22	\$269.48	\$288.41	\$296.06	\$289.95
Sep-19	52,492	\$267.79	\$290.45	\$288.34	\$291.05	\$288.99	\$312.77	\$289.95	\$312.42	\$290.14	\$287.32	\$291.37
Oct-19	52,336	\$320.69	\$290.83	\$288.72	\$291.42	\$289.36	\$303.97	\$290.74	\$303.86	\$290.95	\$280.27	\$291.07
Nov-19	52,336		\$291.22	\$289.09	\$291.79	\$289.73	\$314.88	\$290.97	\$314.28	\$291.18	\$294.76	\$291.93
Dec-19	52,336		\$291.60	\$289.47	\$292.16	\$290.10	\$327.94	\$292.90	\$326.45	\$293.05	\$294.74	\$292.84
Jan-20	52,336		\$291.99	\$289.85	\$292.54	\$290.47	\$311.75	\$294.29	\$311.35	\$294.43	\$294.72	\$292.55
Feb-20	52,336		\$292.38	\$290.24	\$292.92	\$290.84	\$307.87	\$295.82	\$307.80	\$295.96	\$294.70	\$292.26
Mar-20	52,336		\$292.75	\$290.63	\$293.27	\$291.22	\$298.33	\$298.28	\$299.14	\$298.42	\$294.68	\$292.05
Apr-20	52,336		\$293.14	\$291.01	\$293.65	\$291.59	\$297.49	\$299.04	\$298.15	\$299.22	\$294.66	\$291.67
May-20	52,336		\$293.52	\$291.40	\$294.01	\$291.97	\$295.40	\$300.62	\$296.42	\$300.83	\$294.64	\$292.12
Jun-20	52,336		\$293.92	\$291.79	\$294.39	\$292.34	\$302.23	\$302.68	\$302.93	\$302.87	\$294.62	\$292.73
Jul-20	52,336		\$294.30	\$292.18	\$294.76	\$292.72	\$312.92	\$304.42	\$312.77	\$304.57	\$294.60	\$292.98
Aug-20	52,336		\$294.69	\$292.57	\$295.14	\$293.09	\$283.41	\$305.75	\$285.64	\$305.94	\$294.57	\$292.86
Sep-20	52,336		\$295.09	\$292.95	\$295.52	\$293.46	\$310.22	\$305.53	\$310.04	\$305.74	\$294.55	\$293.46
Oct-20	52,336		\$295.47	\$293.34	\$295.88	\$293.84	\$327.01	\$307.45	\$326.05	\$307.59	\$294.53	\$294.65
Nov-20	52,336		\$295.87	\$293.73	\$296.26	\$294.21	\$331.34	\$308.83	\$329.75	\$308.87	\$294.51	\$294.63
Dec-20	52,336		\$296.26	\$294.12	\$296.63	\$294.58	\$345.02	\$310.25	\$341.91	\$310.16	\$294.49	\$294.61
Jan-21	52,336		\$296.65	\$294.50	\$297.00	\$294.95	\$327.92	\$311.60	\$326.82	\$311.45	\$294.47	\$294.59
Feb-21	52,336		\$297.05	\$294.89	\$297.38	\$295.32	\$323.76	\$312.92	\$323.27	\$312.74	\$294.45	\$294.56
Mar-21	52,336		\$297.41	\$295.28	\$297.72	\$295.70	\$313.66	\$314.20	\$314.60	\$314.03	\$294.43	\$294.54
Apr-21	52,336		\$297.81	\$295.67	\$298.10	\$296.07	\$312.72	\$315.47	\$313.62	\$315.32	\$294.41	\$294.52
May-21	52,336		\$298.20	\$296.06	\$298.47	\$296.44	\$310.46	\$316.72	\$311.89	\$316.61	\$294.39	\$294.50
Jun-21	52,336		\$298.60	\$296.45	\$298.85	\$296.81	\$317.56	\$318.00	\$318.40	\$317.90	\$294.37	\$294.48
Jul-21	52,336		\$298.99	\$296.84	\$299.21	\$297.18	\$328.73	\$319.32	\$328.24	\$319.19	\$294.35	\$294.46
Aug-21	52,336		\$299.39	\$297.23	\$299.59	\$297.55	\$297.67	\$320.51	\$301.10	\$320.47	\$294.33	\$294.44
Sep-21	52,336		\$299.79	\$297.62	\$299.97	\$297.92	\$325.77	\$321.80	\$325.50	\$321.76	\$294.31	\$294.42
Oct-21	52,336		\$300.18	\$298.02	\$300.33	\$298.29	\$343.33	\$323.16	\$341.52	\$323.05	\$294.29	\$294.40
Nov-21	52,336		\$300.58	\$298.41	\$300.71	\$298.66	\$347.81	\$324.53	\$345.21	\$324.34	\$294.27	\$294.38
Dec-21	52,336		\$300.98	\$298.80	\$301.08	\$299.04	\$362.09	\$325.96	\$357.38	\$325.63	\$294.25	\$294.36
Utilization Trend			1.60%		1.53%		5.42%		5.34%		0.52%	
RMSE (root mean square error)			18.41		18.25		21.22		21.20		22.44	

MEDICAL UTILIZATION TREND CALCULATION

Utilization Trend Calculation - Facility - 36 Month

Month	Membership	Adjusted Allowed Claims PMPM	Logistic Regression		Linear Regression		Holt-Winters' Multiplicative		Holt-Winters' Additive		Double Exp Smoothing	
			Fitted PMPM	Rolling 12 PMPM	Fitted PMPM	Rolling 12 PMPM	Fitted PMPM	Rolling 12 PMPM	Fitted PMPM	Rolling 12 PMPM	Fitted PMPM	Rolling 12 PMPM
Nov-16	51,926	\$311.53	\$274.64		\$275.48							
Dec-16	51,220	\$301.27	\$275.14		\$275.99						\$311.53	
Jan-17	54,466	\$276.58	\$275.67		\$276.52						\$307.95	
Feb-17	54,376	\$253.40	\$276.19		\$277.04						\$296.99	
Mar-17	54,286	\$261.20	\$276.67		\$277.52						\$281.75	
Apr-17	54,315	\$261.18	\$277.19		\$278.05						\$274.55	
May-17	54,511	\$272.85	\$277.71		\$278.56						\$269.84	
Jun-17	54,564	\$265.26	\$278.23		\$279.08						\$270.85	
Jul-17	54,781	\$309.21	\$278.75		\$279.59						\$268.86	
Aug-17	54,843	\$236.42	\$279.28		\$280.12						\$282.91	
Sep-17	54,384	\$262.14	\$279.81		\$280.65						\$266.64	
Oct-17	54,362	\$292.42	\$280.33	\$277.49	\$281.16	\$278.34					\$265.03	
Nov-17	54,513	\$288.40	\$280.86	\$278.00	\$281.68	\$278.85	\$311.53	\$311.53			\$274.55	\$280.80
Dec-17	54,478	\$316.92	\$281.38	\$278.51	\$282.19	\$279.35	\$300.78	\$300.78			\$279.35	\$278.27
Jan-18	52,507	\$297.59	\$281.91	\$279.02	\$282.72	\$279.86	\$276.24		\$276.05		\$292.44	\$276.93
Feb-18	52,433	\$294.54	\$282.45	\$279.53	\$283.25	\$280.37	\$253.45		\$253.47		\$294.22	\$276.65
Mar-18	52,332	\$259.13	\$282.94	\$280.05	\$283.72	\$280.87	\$262.33		\$262.79		\$294.31	\$277.65
Apr-18	52,560	\$295.32	\$283.48	\$280.56	\$284.25	\$281.39	\$262.86		\$263.41		\$282.01	\$278.26
May-18	52,733	\$271.99	\$284.00	\$281.09	\$284.76	\$281.90	\$275.96		\$276.81		\$286.63	\$279.66
Jun-18	52,720	\$266.88	\$284.54	\$281.61	\$285.29	\$282.42	\$269.15		\$270.20		\$281.49	\$280.56
Jul-18	53,446	\$266.21	\$285.06	\$282.15	\$285.80	\$282.94	\$314.74		\$315.11		\$276.36	\$281.21
Aug-18	53,468	\$266.07	\$285.61	\$282.68	\$286.32	\$283.47	\$240.63		\$241.78		\$272.78	\$280.36
Sep-18	53,278	\$309.27	\$286.15	\$283.21	\$286.85	\$283.99	\$267.85		\$268.85		\$270.40	\$280.69
Oct-18	53,566	\$284.91	\$286.68	\$283.75	\$287.36	\$284.51	\$300.62	\$278.21	\$300.92	\$278.64	\$283.93	\$282.30
Nov-18	53,900	\$282.84	\$287.22	\$284.29	\$287.89	\$285.04	\$312.51	\$278.26	\$312.37	\$278.68	\$284.25	\$283.13
Dec-18	53,803	\$323.57	\$287.75	\$284.83	\$288.40	\$285.57	\$317.41	\$279.64	\$316.52	\$280.00	\$283.73	\$283.50
Jan-19	54,540	\$297.87	\$288.30	\$285.37	\$288.92	\$286.09	\$294.83	\$281.22	\$294.56	\$281.57	\$297.62	\$283.97
Feb-19	54,495	\$295.40	\$288.85	\$285.90	\$289.45	\$286.61	\$279.19	\$283.32	\$279.28	\$283.68	\$297.69	\$284.30
Mar-19	54,459	\$302.63	\$289.35	\$286.44	\$289.93	\$287.12	\$271.55	\$284.03	\$272.15	\$284.40	\$296.88	\$284.55
Apr-19	54,100	\$272.02	\$289.90	\$286.97	\$290.45	\$287.64	\$286.90	\$286.00	\$286.99	\$286.33	\$298.87	\$285.96
May-19	53,986	\$284.05	\$290.43	\$287.50	\$290.96	\$288.15	\$286.27	\$286.84	\$286.26	\$287.10	\$289.48	\$286.20
Jun-19	53,631	\$299.13	\$290.99	\$288.03	\$291.49	\$288.66	\$280.08	\$287.72	\$280.34	\$287.92	\$287.57	\$286.70
Jul-19	52,969	\$304.12	\$291.52	\$288.56	\$292.00	\$289.17	\$310.62	\$287.37	\$309.53	\$287.44	\$291.58	\$287.95
Aug-19	52,672	\$271.78	\$292.08	\$289.10	\$292.53	\$289.68	\$262.79	\$289.23	\$264.52	\$289.35	\$295.94	\$289.86
Sep-19	52,492	\$267.79	\$292.63	\$289.63	\$293.05	\$290.19	\$298.02	\$291.71	\$297.74	\$291.75	\$287.49	\$291.28
Oct-19	52,336	\$320.69	\$293.17	\$290.16	\$293.56	\$290.70	\$309.39	\$292.41	\$307.97	\$292.30	\$280.59	\$291.02
Nov-19	52,336		\$293.73	\$290.70	\$294.09	\$291.21	\$316.93	\$292.72	\$315.24	\$292.49	\$294.56	\$291.88
Dec-19	52,336		\$294.27	\$291.24	\$294.60	\$291.72	\$336.81	\$294.25	\$333.78	\$293.84	\$294.54	\$292.78
Jan-20	52,336		\$294.83	\$291.78	\$295.13	\$292.24	\$312.14	\$295.67	\$310.82	\$295.17	\$294.53	\$292.51
Feb-20	52,336		\$295.40	\$292.33	\$295.65	\$292.76	\$301.07	\$297.53	\$300.57	\$296.98	\$294.51	\$292.23
Mar-20	52,336		\$295.92	\$292.89	\$296.15	\$293.29	\$298.75	\$299.86	\$298.57	\$299.24	\$294.50	\$292.02
Apr-20	52,336		\$296.49	\$293.44	\$296.67	\$293.81	\$296.52	\$300.69	\$296.18	\$300.04	\$294.48	\$291.63
May-20	52,336		\$297.03	\$294.00	\$297.18	\$294.33	\$300.90	\$301.94	\$300.37	\$301.25	\$294.46	\$292.05
Jun-20	52,336		\$297.60	\$294.55	\$297.71	\$294.86	\$302.63	\$303.86	\$302.15	\$303.10	\$294.45	\$292.64
Jul-20	52,336		\$298.15	\$295.11	\$298.22	\$295.38	\$324.42	\$305.01	\$322.01	\$304.14	\$294.43	\$292.87
Aug-20	52,336		\$298.71	\$295.66	\$298.75	\$295.90	\$279.99	\$306.46	\$281.56	\$305.58	\$294.42	\$292.75
Sep-20	52,336		\$299.28	\$296.22	\$299.27	\$296.42	\$301.46	\$306.75	\$300.92	\$305.85	\$294.40	\$293.32
Oct-20	52,336		\$299.83	\$296.77	\$299.78	\$296.93	\$329.91	\$308.46	\$327.35	\$307.46	\$294.38	\$294.47
Nov-20	52,336		\$300.41	\$297.33	\$300.31	\$297.45	\$333.26	\$309.82	\$329.77	\$308.67	\$294.37	\$294.46
Dec-20	52,336		\$300.96	\$297.88	\$300.82	\$297.97	\$354.09	\$311.26	\$348.31	\$309.88	\$294.35	\$294.44
Jan-21	52,336		\$301.53	\$298.44	\$301.35	\$298.49	\$328.09	\$312.59	\$325.35	\$311.09	\$294.34	\$294.42
Feb-21	52,336		\$302.11	\$299.00	\$301.87	\$299.01	\$316.39	\$313.87	\$315.10	\$312.30	\$294.32	\$294.41
Mar-21	52,336		\$302.63	\$299.56	\$302.35	\$299.52	\$313.89	\$315.13	\$313.10	\$313.51	\$294.30	\$294.39
Apr-21	52,336		\$303.20	\$300.12	\$302.88	\$300.04	\$311.48	\$316.38	\$310.71	\$314.73	\$294.29	\$294.38
May-21	52,336		\$303.76	\$300.68	\$303.39	\$300.56	\$316.02	\$317.64	\$314.90	\$315.94	\$294.27	\$294.36
Jun-21	52,336		\$304.34	\$301.24	\$303.91	\$301.08	\$317.77	\$318.90	\$316.68	\$317.15	\$294.25	\$294.34
Jul-21	52,336		\$304.90	\$301.81	\$304.42	\$301.59	\$340.58	\$320.24	\$336.54	\$318.36	\$294.24	\$294.33
Aug-21	52,336		\$305.48	\$302.37	\$304.95	\$302.11	\$293.88	\$321.40	\$296.09	\$319.57	\$294.22	\$294.31
Sep-21	52,336		\$306.06	\$302.93	\$305.48	\$302.63	\$316.36	\$322.64	\$315.45	\$320.78	\$294.21	\$294.30
Oct-21	52,336		\$306.63	\$303.50	\$305.99	\$303.14	\$346.15	\$324.00	\$341.88	\$321.99	\$294.19	\$294.28
Nov-21	52,336		\$307.21	\$304.07	\$306.51	\$303.66	\$349.60	\$325.36	\$344.30	\$323.20	\$294.17	\$294.26
Dec-21	52,336		\$307.78	\$304.64	\$307.02	\$304.18	\$371.38	\$326.80	\$362.84	\$324.41	\$294.16	\$294.25
Utilization Trend				2.27%		2.11%		5.27%		4.93%		0.51%
RMSE (root mean square error)				18.22		18.11		23.18		23.05		23.04

MEDICAL UTILIZATION TREND CALCULATION

Utilization Trend Calculation - Facility - 24 Month

Month	Membership	Adjusted Allowed Claims PMPM	Logistic Regression		Linear Regression		Holt-Winters' Multiplicative		Holt-Winters' Additive		Double Exp Smoothing	
			Fitted PMPM	Rolling 12 PMPM	Fitted PMPM	Rolling 12 PMPM	Fitted PMPM	Rolling 12 PMPM	Fitted PMPM	Rolling 12 PMPM	Fitted PMPM	Rolling 12 PMPM
Nov-17	54,513	\$288.40	\$285.76		286.28627							
Dec-17	54,478	\$316.92	\$286.00		\$286.53						\$288.40	
Jan-18	52,507	\$297.59	\$286.25		\$286.78						\$288.43	
Feb-18	52,433	\$294.54	\$286.50		\$287.04						\$288.44	
Mar-18	52,332	\$259.13	\$286.72		\$287.26						\$288.45	
Apr-18	52,560	\$295.32	\$286.97		\$287.52						\$288.42	
May-18	52,733	\$271.99	\$287.21		\$287.76						\$288.43	
Jun-18	52,720	\$266.88	\$287.46		\$288.01						\$288.41	
Jul-18	53,446	\$266.21	\$287.70		\$288.26						\$288.39	
Aug-18	53,468	\$266.07	\$287.94		\$288.51						\$288.37	
Sep-18	53,278	\$309.27	\$288.19		\$288.76						\$288.34	
Oct-18	53,566	\$284.91	\$288.43	\$287.09	\$289.01	\$287.64					\$288.36	
Nov-18	53,900	\$282.84	\$288.68	\$287.34	\$289.26	\$287.89	\$288.40		\$288.40		\$288.36	\$288.40
Dec-18	53,803	\$323.57	\$288.92	\$287.59	\$289.50	\$288.15	\$316.77		\$316.73		\$288.36	\$288.40
Jan-19	54,540	\$297.87	\$289.17	\$287.83	\$289.76	\$288.40	\$297.54		\$297.54		\$288.39	\$288.39
Feb-19	54,495	\$295.40	\$289.42	\$288.08	\$290.01	\$288.65	\$294.50		\$294.52		\$288.40	\$288.39
Mar-19	54,459	\$302.63	\$289.65	\$288.32	\$290.24	\$288.89	\$259.13		\$259.17		\$288.41	\$288.39
Apr-19	54,100	\$272.02	\$289.90	\$288.57	\$290.49	\$289.14	\$296.55		\$296.91		\$288.42	\$288.39
May-19	53,986	\$284.05	\$290.14	\$288.81	\$290.73	\$289.38	\$273.15		\$273.51		\$288.41	\$288.39
Jun-19	53,631	\$299.13	\$290.39	\$289.05	\$290.99	\$289.63	\$268.57		\$269.13		\$288.40	\$288.38
Jul-19	52,969	\$304.12	\$290.64	\$289.29	\$291.23	\$289.87	\$269.07		\$270.05		\$288.41	\$288.39
Aug-19	52,672	\$271.78	\$290.89	\$289.53	\$291.48	\$290.12	\$270.58		\$272.15		\$288.43	\$288.39
Sep-19	52,492	\$267.79	\$291.14	\$289.77	\$291.73	\$290.36	\$315.97		\$317.00		\$288.41	\$288.40
Oct-19	52,336	\$320.69	\$291.38	\$290.02	\$291.98	\$290.61	\$291.33	\$286.78	\$292.59	\$287.28	\$288.39	\$288.40
Nov-19	52,336		\$291.63	\$290.26	\$292.23	\$290.85	\$290.78	\$286.97	\$292.39	\$287.60	\$288.42	\$288.40
Dec-19	52,336		\$291.88	\$290.51	\$292.48	\$291.10	\$333.93	\$288.30	\$334.37	\$288.98	\$288.42	\$288.41
Jan-20	52,336		\$292.13	\$290.75	\$292.73	\$291.35	\$308.60	\$289.18	\$309.93	\$289.97	\$288.42	\$288.41
Feb-20	52,336		\$292.38	\$291.00	\$292.98	\$291.60	\$307.20	\$290.20	\$308.71	\$291.12	\$288.42	\$288.41
Mar-20	52,336		\$292.62	\$291.25	\$293.22	\$291.85	\$315.22	\$294.94	\$316.38	\$295.95	\$288.42	\$288.41
Apr-20	52,336		\$292.87	\$291.50	\$293.47	\$292.10	\$284.18	\$293.91	\$286.76	\$295.11	\$288.42	\$288.41
May-20	52,336		\$293.11	\$291.75	\$293.71	\$292.35	\$297.38	\$295.98	\$299.50	\$297.32	\$288.42	\$288.41
Jun-20	52,336		\$293.37	\$292.00	\$293.97	\$292.60	\$313.40	\$299.76	\$314.77	\$301.17	\$288.42	\$288.42
Jul-20	52,336		\$293.61	\$292.25	\$294.21	\$292.85	\$318.38	\$303.90	\$319.38	\$305.31	\$288.42	\$288.42
Aug-20	52,336		\$293.87	\$292.50	\$294.46	\$293.10	\$284.32	\$305.06	\$286.71	\$306.54	\$288.42	\$288.42
Sep-20	52,336		\$294.12	\$292.75	\$294.72	\$293.35	\$280.50	\$302.10	\$283.26	\$303.73	\$288.42	\$288.42
Oct-20	52,336		\$294.37	\$293.00	\$294.96	\$293.59	\$335.76	\$305.80	\$336.08	\$307.35	\$288.42	\$288.42
Nov-20	52,336		\$294.62	\$293.25	\$295.21	\$293.84	\$304.42	\$306.94	\$307.81	\$308.64	\$288.42	\$288.42
Dec-20	52,336		\$294.87	\$293.49	\$295.46	\$294.09	\$349.53	\$308.24	\$349.79	\$309.92	\$288.42	\$288.42
Jan-21	52,336		\$295.12	\$293.74	\$295.71	\$294.34	\$322.96	\$309.44	\$325.35	\$311.21	\$288.42	\$288.42
Feb-21	52,336		\$295.38	\$293.99	\$295.96	\$294.59	\$321.44	\$310.62	\$324.13	\$312.49	\$288.42	\$288.42
Mar-21	52,336		\$295.61	\$294.24	\$296.19	\$294.84	\$329.78	\$311.84	\$331.80	\$313.78	\$288.42	\$288.42
Apr-21	52,336		\$295.86	\$294.49	\$296.44	\$295.08	\$297.25	\$312.93	\$302.18	\$315.06	\$288.42	\$288.42
May-21	52,336		\$296.11	\$294.74	\$296.69	\$295.33	\$311.00	\$314.06	\$314.92	\$316.35	\$288.42	\$288.42
Jun-21	52,336		\$296.37	\$294.99	\$296.94	\$295.58	\$327.71	\$315.25	\$330.19	\$317.63	\$288.42	\$288.42
Jul-21	52,336		\$296.61	\$295.24	\$297.18	\$295.83	\$332.85	\$316.46	\$334.80	\$318.92	\$288.42	\$288.42
Aug-21	52,336		\$296.87	\$295.49	\$297.44	\$296.07	\$297.20	\$317.53	\$302.13	\$320.20	\$288.42	\$288.42
Sep-21	52,336		\$297.13	\$295.74	\$297.69	\$296.32	\$293.16	\$318.59	\$298.68	\$321.49	\$288.42	\$288.42
Oct-21	52,336		\$297.37	\$295.99	\$297.93	\$296.57	\$350.85	\$319.85	\$351.50	\$322.77	\$288.42	\$288.42
Nov-21	52,336		\$297.63	\$296.24	\$298.18	\$296.82	\$318.06	\$320.98	\$323.23	\$324.06	\$288.42	\$288.42
Dec-21	52,336		\$297.88	\$296.49	\$298.43	\$297.06	\$365.13	\$322.28	\$365.21	\$325.34	\$288.42	\$288.42
Utilization Trend				1.02%		1.02%		5.54%		5.91%		0.00%
RMSE (root mean square error)				18.02		17.92		25.88		25.77		18.67

MEDICAL UTILIZATION TREND CALCULATION

Utilization Trend Calculation - Professional - 48 Month

Month	Membership	Adjusted Allowed Claims PMPM	Logistic Regression		Linear Regression		Holt-Winters' Multiplicative		Holt-Winters' Additive		Double Exp Smoothing	
			Fitted PMPM	Rolling 12 PMPM	Fitted PMPM	Rolling 12 PMPM	Fitted PMPM	Rolling 12 PMPM	Fitted PMPM	Rolling 12 PMPM	Fitted PMPM	Rolling 12 PMPM
			Nov-15	57,692	\$138.69	\$125.28	\$125.38					
Dec-15	57,890	\$126.86	\$125.54	\$125.65								\$138.69
Jan-16	52,944	\$127.21	\$125.80	\$125.92								\$131.16
Feb-16	52,655	\$126.25	\$126.07	\$126.20								\$128.63
Mar-16	52,655	\$120.68	\$126.32	\$126.45								\$127.11
Apr-16	52,628	\$121.65	\$126.58	\$126.73								\$123.00
May-16	52,040	\$125.21	\$126.84	\$126.99								\$122.12
Jun-16	52,000	\$122.52	\$127.11	\$127.27								\$124.07
Jul-16	51,849	\$117.22	\$127.37	\$127.54								\$123.07
Aug-16	51,743	\$117.81	\$127.64	\$127.81								\$119.33
Sep-16	51,752	\$128.51	\$127.90	\$128.09								\$118.34
Oct-16	51,944	\$131.79	\$128.16	\$128.35	\$126.84							\$124.80
Nov-16	51,926	\$141.71	\$128.43	\$128.63	\$127.12	\$138.69		\$138.69				\$129.24
Dec-16	51,220	\$137.09	\$128.70	\$128.89	\$127.40	\$127.05		\$127.07				\$137.17
Jan-17	54,466	\$131.98	\$128.97	\$129.17	\$127.68	\$128.18		\$128.23				\$137.12
Feb-17	54,376	\$122.58	\$129.24	\$129.44	\$127.95	\$127.92		\$128.00				\$133.84
Mar-17	54,286	\$123.58	\$129.48	\$129.69	\$128.23	\$122.46		\$122.64				\$126.66
Apr-17	54,315	\$129.27	\$129.76	\$129.97	\$128.50	\$123.89		\$124.07				\$124.69
May-17	54,511	\$130.10	\$130.02	\$130.23	\$128.77	\$128.32		\$128.44				\$127.59
Jun-17	54,564	\$124.99	\$130.30	\$130.51	\$129.05	\$126.28		\$126.48				\$129.18
Jul-17	54,781	\$132.88	\$130.56	\$130.77	\$129.32	\$121.35		\$121.75				\$126.50
Aug-17	54,843	\$118.57	\$130.84	\$131.05	\$129.58	\$123.35		\$123.75				\$130.55
Sep-17	54,384	\$130.44	\$131.11	\$129.65	\$131.32	\$129.85		\$135.26				\$122.91
Oct-17	54,362	\$133.33	\$131.38	\$129.91	\$131.59	\$130.12	\$139.30	\$128.46	\$138.88	\$128.55	\$127.69	\$129.39
Nov-17	54,513	\$144.00	\$131.65	\$130.17	\$131.86	\$130.38	\$148.31	\$129.31	\$147.29	\$129.31	\$131.27	\$129.56
Dec-17	54,478	\$136.47	\$131.92	\$130.44	\$132.13	\$130.65	\$139.20	\$130.31	\$138.56	\$130.26	\$139.37	\$129.78
Jan-18	52,507	\$137.07	\$132.20	\$130.70	\$132.41	\$130.91	\$136.96	\$131.03	\$136.55	\$130.94	\$137.53	\$129.79
Feb-18	52,433	\$137.20	\$132.48	\$130.97	\$132.68	\$131.18	\$132.14	\$131.38	\$132.17	\$131.28	\$137.23	\$130.05
Mar-18	52,332	\$131.45	\$132.73	\$131.23	\$132.93	\$131.44	\$129.73	\$131.99	\$129.86	\$131.89	\$137.21	\$130.92
Apr-18	52,560	\$134.77	\$133.01	\$131.50	\$133.20	\$131.71	\$133.27	\$132.77	\$133.16	\$132.65	\$133.54	\$131.65
May-18	52,733	\$136.62	\$133.28	\$131.77	\$133.47	\$131.98	\$136.12	\$133.43	\$135.92	\$133.27	\$134.32	\$132.22
Jun-18	52,720	\$129.44	\$133.56	\$132.05	\$133.74	\$132.25	\$132.44	\$133.95	\$132.59	\$133.80	\$135.78	\$132.77
Jul-18	53,446	\$130.33	\$133.83	\$132.32	\$134.01	\$132.52	\$132.79	\$134.93	\$132.83	\$134.74	\$131.74	\$133.22
Aug-18	53,468	\$122.69	\$134.12	\$132.60	\$134.29	\$132.79	\$126.46	\$135.22	\$127.09	\$135.05	\$130.84	\$133.25
Sep-18	53,278	\$140.30	\$134.40	\$132.88	\$134.56	\$133.07	\$138.26	\$135.47	\$138.11	\$135.30	\$125.64	\$133.49
Oct-18	53,566	\$139.38	\$134.67	\$133.15	\$134.83	\$133.34	\$141.77	\$135.67	\$141.44	\$135.51	\$134.97	\$134.11
Nov-18	53,900	\$140.20	\$134.96	\$133.43	\$135.10	\$133.62	\$151.69	\$135.94	\$150.69	\$135.78	\$137.77	\$134.66
Dec-18	53,803	\$150.72	\$135.23	\$133.72	\$135.37	\$133.89	\$142.21	\$136.19	\$141.74	\$136.05	\$139.32	\$134.65
Jan-19	54,540	\$136.52	\$135.52	\$133.99	\$135.64	\$134.16	\$141.41	\$136.58	\$141.12	\$136.44	\$146.58	\$135.43
Feb-19	54,495	\$135.15	\$135.80	\$134.27	\$135.92	\$134.43	\$138.17	\$137.07	\$138.15	\$136.94	\$140.18	\$135.69
Mar-19	54,459	\$140.46	\$136.06	\$134.55	\$136.17	\$134.70	\$133.39	\$137.36	\$133.61	\$137.23	\$136.98	\$135.68
Apr-19	54,100	\$134.38	\$136.35	\$134.82	\$136.44	\$134.97	\$136.73	\$137.64	\$136.76	\$137.52	\$139.19	\$136.15
May-19	53,986	\$134.84	\$136.62	\$135.10	\$136.71	\$135.24	\$138.56	\$137.84	\$138.52	\$137.74	\$136.13	\$136.29
Jun-19	53,631	\$134.94	\$136.91	\$135.38	\$136.98	\$135.51	\$132.53	\$137.84	\$132.82	\$137.75	\$135.30	\$136.25
Jul-19	52,969	\$135.34	\$137.19	\$135.65	\$137.25	\$135.77	\$132.86	\$137.85	\$133.06	\$137.77	\$135.07	\$136.53
Aug-19	52,672	\$125.85	\$137.48	\$135.93	\$137.52	\$136.04	\$125.82	\$137.81	\$126.42	\$137.73	\$135.24	\$136.90
Sep-19	52,492	\$129.76	\$137.77	\$136.20	\$137.80	\$136.30	\$140.22	\$137.97	\$140.11	\$137.89	\$129.26	\$137.20
Oct-19	52,336	\$143.89	\$138.05	\$136.48	\$138.06	\$136.57	\$140.84	\$137.89	\$140.67	\$137.82	\$129.57	\$136.77
Nov-19	52,336		\$138.34	\$136.76	\$138.34	\$136.84	\$146.66	\$137.44	\$146.25	\$137.43	\$138.68	\$136.84
Dec-19	52,336		\$138.62	\$137.04	\$138.61	\$137.10	\$146.09	\$137.75	\$145.59	\$137.74	\$138.68	\$136.78
Jan-20	52,336		\$138.91	\$137.33	\$138.88	\$137.38	\$138.97	\$137.54	\$138.74	\$137.53	\$138.68	\$136.10
Feb-20	52,336		\$139.21	\$137.61	\$139.16	\$137.65	\$136.56	\$137.40	\$136.40	\$137.38	\$138.68	\$135.96
Mar-20	52,336		\$139.48	\$137.90	\$139.41	\$137.92	\$136.15	\$137.64	\$135.90	\$137.58	\$138.68	\$136.10
Apr-20	52,336		\$139.77	\$138.19	\$139.69	\$138.19	\$134.95	\$137.50	\$134.70	\$137.42	\$138.68	\$136.05
May-20	52,336		\$140.06	\$138.48	\$139.95	\$138.47	\$136.07	\$137.29	\$135.77	\$137.18	\$138.68	\$136.26
Jun-20	52,336		\$140.35	\$138.77	\$140.23	\$138.74	\$132.73	\$137.32	\$132.46	\$137.16	\$138.68	\$136.54
Jul-20	52,336		\$140.64	\$139.05	\$140.49	\$139.01	\$132.85	\$137.32	\$132.49	\$137.12	\$138.68	\$136.85
Aug-20	52,336		\$140.93	\$139.34	\$140.77	\$139.28	\$124.52	\$137.22	\$124.34	\$136.95	\$138.68	\$137.13
Sep-20	52,336		\$141.23	\$139.63	\$141.04	\$139.55	\$134.08	\$136.71	\$133.80	\$136.43	\$138.68	\$137.92
Oct-20	52,336		\$141.52	\$139.92	\$141.31	\$139.82	\$140.86	\$136.71	\$140.38	\$136.40	\$138.68	\$138.68
Nov-20	52,336		\$141.82	\$140.21	\$141.59	\$140.09	\$145.23	\$136.59	\$144.54	\$136.26	\$138.68	\$138.68
Dec-20	52,336		\$142.11	\$140.50	\$141.85	\$140.36	\$144.66	\$136.47	\$143.87	\$136.12	\$138.68	\$138.68
Jan-21	52,336		\$142.41	\$140.79	\$142.13	\$140.64	\$137.62	\$136.36	\$137.03	\$135.97	\$138.68	\$138.68
Feb-21	52,336		\$142.70	\$141.08	\$142.40	\$140.91	\$135.23	\$136.25	\$134.68	\$135.83	\$138.68	\$138.68
Mar-21	52,336		\$142.98	\$141.38	\$142.65	\$141.18	\$134.82	\$136.14	\$134.18	\$135.69	\$138.69	\$138.68
Apr-21	52,336		\$143.28	\$141.67	\$142.93	\$141.45	\$133.63	\$136.03	\$132.99	\$135.54	\$138.69	\$138.68
May-21	52,336		\$143.57	\$141.96	\$143.19	\$141.72	\$134.73	\$135.91	\$134.06	\$135.40	\$138.69	\$138.68
Jun-21	52,336		\$143.87	\$142.25	\$143.47	\$141.99	\$131.43	\$135.81	\$130.74	\$135.26	\$138.69	\$138.68
Jul-21	52,336		\$144.16	\$142.55	\$143.73	\$142.25	\$131.55	\$135.70	\$130.78	\$135.12	\$138.69	\$138.68
Aug-21	52,336		\$144.47	\$142.84	\$144.01	\$142.52	\$123.30	\$135.60	\$122.62	\$134.97	\$138.69	\$138.69
Sep-21	52,336		\$144.77	\$143.14	\$144.28	\$142.79	\$132.76	\$135.49	\$132.09	\$134.83	\$138.69	\$138.69
Oct-21	52,336		\$145.07	\$143.43	\$144.55	\$143.06	\$139.48	\$135.37	\$138.67	\$134.69	\$138.69	\$138.69
Nov-21	52,336		\$145.37	\$143.73	\$144.82	\$143.33	\$143.80	\$135.25	\$142.82	\$134.54	\$138.69	\$138.69
Dec-21	52,336		\$145.67	\$144.03	\$145.09	\$143.60	\$143.24	\$135.13	\$142.16	\$134.40	\$138.69	\$138.69
Utilization Trend			2.51%		2.35%		-0.93%		-1.15%		0.65%	
RMSE (root mean square error)			6.68		6.66		5.10		4.98		6.82	

MEDICAL UTILIZATION TREND CALCULATION

Utilization Trend Calculation - Professional - 36 Month

Month	Membership	Adjusted Allowed Claims PMPM	Logistic Regression		Linear Regression		Holt-Winters' Multiplicative		Holt-Winters' Additive		Double Exp Smoothing	
			Fitted PMPM	Rolling 12 PMPM	Fitted PMPM	Rolling 12 PMPM	Fitted PMPM	Rolling 12 PMPM	Fitted PMPM	Rolling 12 PMPM	Fitted PMPM	Rolling 12 PMPM
Nov-16	51,926	\$141.71	\$130.37		\$130.53							
Dec-16	51,220	\$137.09	\$130.55		\$130.71						\$141.71	
Jan-17	54,466	\$131.98	\$130.74		\$130.91						\$139.24	
Feb-17	54,376	\$122.58	\$130.93		\$131.10						\$135.36	
Mar-17	54,286	\$123.58	\$131.11		\$131.28						\$128.54	
Apr-17	54,315	\$129.27	\$131.30		\$131.47						\$125.88	
May-17	54,511	\$130.10	\$131.48		\$131.66						\$127.67	
Jun-17	54,564	\$124.99	\$131.68		\$131.85						\$128.95	
Jul-17	54,781	\$132.88	\$131.86		\$132.04						\$126.82	
Aug-17	54,843	\$118.57	\$132.06		\$132.23						\$130.04	
Sep-17	54,384	\$130.44	\$132.25		\$132.42						\$123.91	
Oct-17	54,362	\$133.33	\$132.44	\$131.41	\$132.61	\$131.57					\$127.38	
Nov-17	54,513	\$144.00	\$132.63	\$131.59	\$132.80	\$131.76	\$141.71		\$141.71		\$130.54	\$130.45
Dec-17	54,478	\$136.47	\$132.82	\$131.77	\$132.99	\$131.95	\$137.38		\$137.38		\$137.71	\$130.17
Jan-18	52,507	\$137.07	\$133.01	\$131.96	\$133.18	\$132.13	\$132.15		\$132.18		\$137.05	\$129.97
Feb-18	52,433	\$137.20	\$133.20	\$132.15	\$133.38	\$132.32	\$123.33		\$123.49		\$137.05	\$130.09
Mar-18	52,332	\$131.45	\$133.38	\$132.33	\$133.55	\$132.51	\$126.17		\$126.47		\$137.13	\$130.79
Apr-18	52,560	\$134.77	\$133.58	\$132.52	\$133.74	\$132.69	\$132.80		\$132.98		\$134.09	\$131.47
May-18	52,733	\$136.62	\$133.76	\$132.71	\$133.93	\$132.88	\$134.04		\$134.22		\$134.45	\$132.03
Jun-18	52,720	\$129.44	\$133.96	\$132.90	\$134.12	\$133.07	\$129.23		\$129.61		\$135.60	\$132.59
Jul-18	53,446	\$130.33	\$134.15	\$133.09	\$134.31	\$133.26	\$137.58		\$137.64		\$132.31	\$133.06
Aug-18	53,468	\$122.69	\$134.35	\$133.29	\$134.50	\$133.46	\$122.08		\$122.48		\$131.25	\$133.16
Sep-18	53,278	\$140.30	\$134.54	\$133.48	\$134.70	\$133.65	\$134.51		\$134.50		\$126.67	\$133.41
Oct-18	53,566	\$139.38	\$134.73	\$133.67	\$134.88	\$133.84	\$138.38	\$132.50	\$138.35	\$132.64	\$133.93	\$133.97
Nov-18	53,900	\$140.20	\$134.93	\$133.87	\$135.08	\$134.03	\$148.14	\$133.03	\$147.68	\$133.13	\$136.83	\$134.50
Dec-18	53,803	\$150.72	\$135.12	\$134.07	\$135.26	\$134.23	\$141.46	\$133.37	\$141.26	\$133.45	\$138.62	\$134.58
Jan-19	54,540	\$136.52	\$135.32	\$134.26	\$135.46	\$134.42	\$139.38	\$133.99	\$139.27	\$134.05	\$145.08	\$135.27
Feb-19	54,495	\$135.15	\$135.51	\$134.45	\$135.65	\$134.61	\$132.28	\$134.71	\$132.16	\$134.76	\$140.52	\$135.57
Mar-19	54,459	\$140.46	\$135.69	\$134.64	\$135.83	\$134.80	\$131.02	\$135.10	\$131.28	\$135.14	\$137.65	\$135.62
Apr-19	54,100	\$134.38	\$135.89	\$134.84	\$136.02	\$134.99	\$137.33	\$135.47	\$137.55	\$135.52	\$139.15	\$136.04
May-19	53,986	\$134.84	\$136.08	\$135.03	\$136.21	\$135.17	\$138.25	\$135.82	\$138.35	\$135.86	\$136.60	\$136.22
Jun-19	53,631	\$134.94	\$136.28	\$135.22	\$136.40	\$135.36	\$131.85	\$136.03	\$132.23	\$136.07	\$135.65	\$136.22
Jul-19	52,969	\$135.34	\$136.48	\$135.41	\$136.59	\$135.55	\$138.34	\$136.09	\$138.68	\$136.15	\$135.27	\$136.47
Aug-19	52,672	\$125.85	\$136.67	\$135.60	\$136.78	\$135.74	\$125.60	\$136.39	\$126.25	\$136.48	\$135.30	\$136.80
Sep-19	52,492	\$129.76	\$136.87	\$135.79	\$136.97	\$135.92	\$140.06	\$136.85	\$139.84	\$136.91	\$130.25	\$137.11
Oct-19	52,336	\$143.89	\$137.07	\$135.99	\$137.16	\$136.11	\$140.41	\$137.01	\$140.14	\$137.06	\$129.98	\$136.79
Nov-19	52,336		\$137.27	\$136.18	\$137.35	\$136.30	\$147.70	\$136.95	\$147.42	\$137.01	\$137.39	\$136.84
Dec-19	52,336		\$137.46	\$136.37	\$137.54	\$136.49	\$147.50	\$137.43	\$146.84	\$137.46	\$137.38	\$136.73
Jan-20	52,336		\$137.66	\$136.57	\$137.73	\$136.68	\$140.29	\$137.50	\$140.08	\$137.52	\$137.38	\$136.07
Feb-20	52,336		\$137.86	\$136.77	\$137.93	\$136.87	\$135.29	\$137.76	\$134.96	\$137.76	\$137.38	\$135.80
Mar-20	52,336		\$138.05	\$136.96	\$138.11	\$137.06	\$135.73	\$138.17	\$135.39	\$138.13	\$137.37	\$135.77
Apr-20	52,336		\$138.25	\$137.16	\$138.30	\$137.25	\$136.86	\$138.14	\$136.83	\$138.07	\$137.37	\$135.61
May-20	52,336		\$138.45	\$137.36	\$138.49	\$137.44	\$137.95	\$138.11	\$137.90	\$138.03	\$137.36	\$135.67
Jun-20	52,336		\$138.65	\$137.56	\$138.68	\$137.63	\$133.98	\$138.30	\$133.98	\$138.19	\$137.36	\$135.81
Jul-20	52,336		\$138.85	\$137.76	\$138.87	\$137.83	\$138.11	\$138.28	\$138.29	\$138.15	\$137.36	\$135.99
Aug-20	52,336		\$139.05	\$137.96	\$139.06	\$138.02	\$126.66	\$138.38	\$127.10	\$138.23	\$137.35	\$136.16
Sep-20	52,336		\$139.25	\$138.16	\$139.25	\$138.21	\$137.75	\$138.19	\$137.97	\$138.08	\$137.35	\$136.75
Oct-20	52,336		\$139.45	\$138.36	\$139.44	\$138.40	\$143.87	\$138.47	\$143.58	\$138.36	\$137.34	\$137.37
Nov-20	52,336		\$139.66	\$138.55	\$139.63	\$138.59	\$149.70	\$138.64	\$149.28	\$138.52	\$137.34	\$137.36
Dec-20	52,336		\$139.85	\$138.75	\$139.82	\$138.78	\$149.49	\$138.81	\$148.71	\$138.67	\$137.34	\$137.36
Jan-21	52,336		\$140.06	\$138.95	\$140.02	\$138.97	\$142.18	\$138.96	\$141.94	\$138.83	\$137.33	\$137.35
Feb-21	52,336		\$140.26	\$139.15	\$140.21	\$139.16	\$137.11	\$139.12	\$136.83	\$138.98	\$137.33	\$137.35
Mar-21	52,336		\$140.45	\$139.35	\$140.38	\$139.35	\$137.56	\$139.27	\$137.26	\$139.14	\$137.32	\$137.35
Apr-21	52,336		\$140.65	\$139.55	\$140.58	\$139.54	\$138.70	\$139.42	\$138.70	\$139.30	\$137.32	\$137.34
May-21	52,336		\$140.85	\$139.75	\$140.76	\$139.73	\$139.80	\$139.58	\$139.77	\$139.45	\$137.32	\$137.34
Jun-21	52,336		\$141.06	\$139.95	\$140.96	\$139.92	\$135.78	\$139.73	\$135.85	\$139.61	\$137.31	\$137.33
Jul-21	52,336		\$141.26	\$140.15	\$141.14	\$140.11	\$139.97	\$139.88	\$140.15	\$139.76	\$137.31	\$137.33
Aug-21	52,336		\$141.46	\$140.35	\$141.34	\$140.29	\$128.36	\$140.02	\$128.97	\$139.92	\$137.30	\$137.33
Sep-21	52,336		\$141.67	\$140.56	\$141.53	\$140.48	\$139.59	\$140.18	\$139.83	\$140.07	\$137.30	\$137.32
Oct-21	52,336		\$141.87	\$140.76	\$141.72	\$140.67	\$145.80	\$140.34	\$145.44	\$140.23	\$137.30	\$137.32
Nov-21	52,336		\$142.08	\$140.96	\$141.91	\$140.86	\$151.70	\$140.50	\$151.15	\$140.38	\$137.29	\$137.31
Dec-21	52,336		\$142.28	\$141.16	\$142.10	\$141.05	\$151.48	\$140.67	\$150.57	\$140.54	\$137.29	\$137.31
Utilization Trend				1.74%		1.66%		1.22%		1.16%		0.18%
RMSE (root mean square error)				6.56		6.54		5.63		5.56		6.91

MEDICAL UTILIZATION TREND CALCULATION

Utilization Trend Calculation - Professional - 24 Month

Month	Membership	Adjusted Allowed Claims PMPM	Logistic Regression		Linear Regression		Holt-Winters' Multiplicative		Holt-Winters' Additive		Double Exp Smoothing	
			Fitted PMPM	Rolling 12 PMPM	Fitted PMPM	Rolling 12 PMPM	Fitted PMPM	Rolling 12 PMPM	Fitted PMPM	Rolling 12 PMPM	Fitted PMPM	Rolling 12 PMPM
Nov-17	54,513	\$144.00	\$136.43		136.52735							
Dec-17	54,478	\$136.47	\$136.37		\$136.47							\$144.00
Jan-18	52,507	\$137.07	\$136.32		\$136.42							\$140.66
Feb-18	52,433	\$137.20	\$136.26		\$136.36							\$139.07
Mar-18	52,332	\$131.45	\$136.21		\$136.31							\$138.23
Apr-18	52,560	\$134.77	\$136.15		\$136.26							\$135.22
May-18	52,733	\$136.62	\$136.09		\$136.21							\$135.01
Jun-18	52,720	\$129.44	\$136.04		\$136.15							\$135.72
Jul-18	53,446	\$130.33	\$135.98		\$136.10							\$132.93
Aug-18	53,468	\$122.69	\$135.92		\$136.04							\$131.77
Sep-18	53,278	\$140.30	\$135.86		\$135.99							\$127.73
Oct-18	53,566	\$139.38	\$135.81	\$136.12	\$135.93	\$136.23						\$133.29
Nov-18	53,900	\$140.20	\$135.75	\$136.06	\$135.88	\$136.18	\$144.00		\$144.00		\$135.98	\$135.80
Dec-18	53,803	\$150.72	\$135.69	\$136.00	\$135.83	\$136.12	\$136.45		\$136.44		\$137.84	\$135.27
Jan-19	54,540	\$136.52	\$135.64	\$135.95	\$135.77	\$136.07	\$137.12		\$137.14		\$143.55	\$135.54
Feb-19	54,495	\$135.15	\$135.58	\$135.89	\$135.72	\$136.01	\$137.28		\$137.31		\$140.43	\$135.66
Mar-19	54,459	\$140.46	\$135.53	\$135.83	\$135.67	\$135.96	\$131.54		\$131.58		\$138.09	\$135.66
Apr-19	54,100	\$134.38	\$135.47	\$135.78	\$135.61	\$135.91	\$134.93		\$135.00		\$139.13	\$135.99
May-19	53,986	\$134.84	\$135.41	\$135.72	\$135.56	\$135.85	\$136.83		\$136.92		\$137.02	\$136.15
Jun-19	53,631	\$134.94	\$135.36	\$135.67	\$135.50	\$135.80	\$129.67		\$129.79		\$136.05	\$136.18
Jul-19	52,969	\$135.34	\$135.30	\$135.61	\$135.45	\$135.75	\$130.64		\$130.78		\$135.55	\$136.40
Aug-19	52,672	\$125.85	\$135.24	\$135.55	\$135.40	\$135.69	\$123.05		\$123.25		\$135.45	\$136.70
Sep-19	52,492	\$129.76	\$135.19	\$135.50	\$135.34	\$135.64	\$140.80		\$140.98		\$131.18	\$136.99
Oct-19	52,336	\$143.89	\$135.13	\$135.44	\$135.29	\$135.59	\$139.89	\$135.19	\$140.07	\$135.28	\$130.54	\$136.78
Nov-19	52,336		\$135.07	\$135.39	\$135.23	\$135.53	\$140.90	\$134.92	\$141.01	\$135.01	\$136.45	\$136.82
Dec-19	52,336		\$135.02	\$135.33	\$135.18	\$135.48	\$151.03	\$136.11	\$151.55	\$136.25	\$136.44	\$136.70
Jan-20	52,336		\$134.96	\$135.27	\$135.12	\$135.42	\$137.18	\$136.11	\$137.40	\$136.26	\$136.43	\$136.09
Feb-20	52,336		\$134.90	\$135.22	\$135.07	\$135.37	\$135.89	\$135.99	\$136.07	\$136.16	\$136.42	\$135.75
Mar-20	52,336		\$134.85	\$135.16	\$135.02	\$135.32	\$140.94	\$136.78	\$141.38	\$136.98	\$136.42	\$135.60
Apr-20	52,336		\$134.79	\$135.10	\$134.96	\$135.26	\$135.09	\$136.80	\$135.32	\$137.02	\$136.41	\$135.37
May-20	52,336		\$134.74	\$135.05	\$134.91	\$135.21	\$135.61	\$136.70	\$135.80	\$136.92	\$136.40	\$135.31
Jun-20	52,336		\$134.68	\$134.99	\$134.85	\$135.15	\$135.53	\$137.20	\$135.90	\$137.45	\$136.39	\$135.34
Jul-20	52,336		\$134.62	\$134.93	\$134.80	\$135.10	\$135.93	\$137.65	\$136.27	\$137.91	\$136.39	\$135.41
Aug-20	52,336		\$134.57	\$134.88	\$134.75	\$135.04	\$126.42	\$137.93	\$126.76	\$138.21	\$136.38	\$135.49
Sep-20	52,336		\$134.51	\$134.82	\$134.69	\$134.99	\$130.73	\$137.10	\$130.70	\$137.35	\$136.37	\$135.92
Oct-20	52,336		\$134.45	\$134.76	\$134.64	\$134.94	\$144.53	\$137.48	\$144.81	\$137.75	\$136.37	\$136.41
Nov-20	52,336		\$134.40	\$134.71	\$134.58	\$134.88	\$141.63	\$137.54	\$141.93	\$137.82	\$136.36	\$136.40
Dec-20	52,336		\$134.34	\$134.65	\$134.53	\$134.83	\$151.81	\$137.61	\$152.47	\$137.90	\$136.35	\$136.39
Jan-21	52,336		\$134.28	\$134.59	\$134.47	\$134.77	\$137.90	\$137.67	\$138.32	\$137.98	\$136.34	\$136.38
Feb-21	52,336		\$134.23	\$134.54	\$134.42	\$134.72	\$136.59	\$137.73	\$137.00	\$138.06	\$136.34	\$136.38
Mar-21	52,336		\$134.18	\$134.48	\$134.37	\$134.66	\$141.67	\$137.79	\$142.30	\$138.13	\$136.33	\$136.37
Apr-21	52,336		\$134.12	\$134.43	\$134.31	\$134.61	\$135.79	\$137.85	\$136.25	\$138.21	\$136.32	\$136.36
May-21	52,336		\$134.06	\$134.37	\$134.26	\$134.56	\$136.31	\$137.90	\$136.72	\$138.29	\$136.31	\$136.35
Jun-21	52,336		\$134.01	\$134.31	\$134.21	\$134.50	\$136.23	\$137.96	\$136.82	\$138.36	\$136.31	\$136.35
Jul-21	52,336		\$133.95	\$134.26	\$134.15	\$134.45	\$136.63	\$138.02	\$137.20	\$138.44	\$136.30	\$136.34
Aug-21	52,336		\$133.89	\$134.20	\$134.10	\$134.39	\$127.08	\$138.08	\$127.68	\$138.52	\$136.29	\$136.33
Sep-21	52,336		\$133.84	\$134.15	\$134.04	\$134.34	\$131.41	\$138.13	\$131.62	\$138.59	\$136.28	\$136.33
Oct-21	52,336		\$133.78	\$134.09	\$133.99	\$134.29	\$145.28	\$138.19	\$145.73	\$138.67	\$136.28	\$136.32
Nov-21	52,336		\$133.73	\$134.03	\$133.93	\$134.23	\$142.37	\$138.26	\$142.86	\$138.75	\$136.27	\$136.31
Dec-21	52,336		\$133.67	\$133.98	\$133.88	\$134.18	\$152.60	\$138.32	\$153.40	\$138.83	\$136.26	\$136.30
Utilization Trend			-0.50%		-0.48%		1.06%		1.20%		-0.16%	
RMSE (root mean square error)			6.24		6.21		6.47		6.47		6.64	

MEDICAL UTILIZATION TREND CALCULATION

Utilization Trend Calculation - Total - 48 Month

Month	Membership	Adjusted Allowed Claims PMPM	Logistic Regression		Linear Regression		Holt-Winters' Multiplicative		Holt-Winters' Additive		Double Exp Smoothing	
			Fitted PMPM	Rolling 12 PMPM	Fitted PMPM	Rolling 12 PMPM	Fitted PMPM	Rolling 12 PMPM	Fitted PMPM	Rolling 12 PMPM	Fitted PMPM	Rolling 12 PMPM
Nov-15	57,692	\$455.41	\$398.74		\$399.35							
Dec-15	57,890	\$398.88	\$399.35		\$399.98							\$455.41
Jan-16	52,944	\$409.21	\$399.99		\$400.64							\$430.62
Feb-16	52,655	\$411.11	\$400.62		\$401.29							\$421.20
Mar-16	52,655	\$383.78	\$401.21		\$401.90							\$416.74
Apr-16	52,628	\$392.17	\$401.85		\$402.55							\$402.25
May-16	52,040	\$381.51	\$402.46		\$403.19							\$397.77
Jun-16	52,000	\$389.46	\$403.10		\$403.84							\$390.58
Jul-16	51,849	\$389.53	\$403.72		\$404.47							\$390.02
Aug-16	51,743	\$370.95	\$404.36		\$405.12							\$389.74
Sep-16	51,752	\$431.61	\$405.00		\$405.78							\$381.43
Oct-16	51,944	\$417.55	\$405.62	\$402.10	\$406.41	\$402.81						\$403.37
Nov-16	51,926	\$453.23	\$406.26	\$402.75	\$407.06	\$403.47	\$455.41	\$455.41				\$409.54
Dec-16	51,220	\$438.36	\$406.88	\$403.40	\$407.69	\$404.14	\$398.83	\$398.83	\$455.41	\$404.19		\$428.66
Jan-17	54,466	\$408.56	\$407.53	\$404.05	\$408.35	\$404.80	\$410.04	\$410.04	\$410.24			\$432.89
Feb-17	54,376	\$375.98	\$408.17	\$404.70	\$409.00	\$405.46	\$412.34	\$412.34	\$412.54			\$422.19
Mar-17	54,286	\$384.78	\$408.76	\$405.34	\$409.59	\$406.12	\$384.56	\$384.56	\$384.61			\$401.89
Apr-17	54,315	\$390.45	\$409.41	\$405.98	\$410.24	\$406.77	\$392.98	\$392.98	\$392.99			\$394.33
May-17	54,511	\$402.95	\$410.03	\$406.61	\$410.88	\$407.41	\$382.26	\$382.26	\$382.25			\$392.57
Jun-17	54,564	\$390.25	\$410.68	\$407.25	\$411.53	\$408.06	\$390.68	\$390.68	\$390.75			\$397.06
Jul-17	54,781	\$442.08	\$411.31	\$407.88	\$412.16	\$408.70	\$390.95	\$390.95	\$391.01			\$394.02
Aug-17	54,843	\$354.99	\$411.96	\$408.51	\$412.81	\$409.34	\$373.59	\$373.59	\$374.07			\$415.04
Sep-17	54,384	\$392.58	\$412.62	\$409.14	\$413.47	\$409.97	\$435.06	\$435.06	\$435.02			\$388.66
Oct-17	54,362	\$425.75	\$413.25	\$409.77	\$414.10	\$410.60	\$420.58	\$403.74	\$420.35	\$403.80		\$390.31
Nov-17	54,513	\$432.41	\$413.90	\$410.39	\$414.75	\$411.23	\$458.10	\$404.17	\$457.55	\$404.19		\$405.17
Dec-17	54,478	\$453.39	\$414.54	\$411.01	\$415.38	\$411.86	\$418.14	\$405.75	\$417.62	\$405.73		\$417.42
Jan-18	52,507	\$434.66	\$415.19	\$411.64	\$416.04	\$412.49	\$412.23	\$405.91	\$411.84	\$405.84		\$433.16
Feb-18	52,433	\$431.74	\$415.85	\$412.27	\$416.69	\$413.12	\$400.44	\$404.93	\$400.30	\$404.83		\$433.80
Mar-18	52,332	\$390.58	\$416.45	\$412.90	\$417.28	\$413.75	\$389.27	\$405.38	\$389.51	\$405.29		\$432.87
Apr-18	52,560	\$430.08	\$417.10	\$413.54	\$417.93	\$414.38	\$397.54	\$405.78	\$397.74	\$405.71		\$414.30
May-18	52,733	\$408.61	\$417.74	\$414.18	\$418.57	\$415.02	\$398.06	\$407.14	\$398.49	\$407.10		\$411.73
Jun-18	52,720	\$396.32	\$418.41	\$414.82	\$419.22	\$415.66	\$398.79	\$407.85	\$399.33	\$407.86		\$415.64
Jul-18	53,446	\$396.55	\$419.05	\$415.48	\$419.85	\$416.31	\$421.95	\$410.47	\$421.99	\$410.47		\$407.13
Aug-18	53,468	\$388.75	\$419.71	\$416.13	\$420.50	\$416.96	\$374.19	\$410.60	\$375.24	\$410.65		\$402.44
Sep-18	53,278	\$449.57	\$420.38	\$416.78	\$421.16	\$417.61	\$428.10	\$409.98	\$427.78	\$410.00		\$396.39
Oct-18	53,566	\$424.29	\$421.02	\$417.44	\$421.79	\$418.26	\$435.60	\$411.22	\$435.28	\$411.24		\$419.65
Nov-18	53,900	\$423.04	\$421.69	\$418.10	\$422.44	\$418.91	\$462.26	\$411.53	\$460.91	\$411.48		\$421.65
Dec-18	53,803	\$474.29	\$422.33	\$418.76	\$423.08	\$419.57	\$447.97	\$414.04	\$446.95	\$413.95		\$422.23
Jan-19	54,540	\$434.39	\$423.00	\$419.42	\$423.73	\$420.21	\$437.25	\$416.17	\$436.70	\$416.07		\$445.03
Feb-19	54,495	\$430.55	\$423.67	\$420.07	\$424.38	\$420.86	\$429.20	\$418.57	\$429.00	\$418.46		\$440.36
Mar-19	54,459	\$443.09	\$424.28	\$420.72	\$424.97	\$421.50	\$404.73	\$419.78	\$405.58	\$419.72		\$436.04
Apr-19	54,100	\$406.40	\$424.95	\$421.37	\$425.62	\$422.13	\$427.88	\$422.28	\$428.04	\$422.22		\$439.12
May-19	53,986	\$418.89	\$425.60	\$422.02	\$426.26	\$422.77	\$418.48	\$423.94	\$418.91	\$423.88		\$424.75
Jun-19	53,631	\$434.07	\$426.27	\$422.67	\$426.91	\$423.40	\$413.54	\$425.12	\$414.19	\$425.07		\$422.15
Jul-19	52,969	\$439.46	\$426.93	\$423.32	\$427.54	\$424.03	\$428.30	\$425.65	\$428.26	\$425.59		\$427.35
Aug-19	52,672	\$397.63	\$427.60	\$423.97	\$428.20	\$424.67	\$396.77	\$427.55	\$398.85	\$427.58		\$432.63
Sep-19	52,492	\$397.55	\$428.28	\$424.62	\$428.85	\$425.30	\$456.34	\$429.85	\$455.11	\$429.81		\$417.26
Oct-19	52,336	\$464.58	\$428.94	\$425.27	\$429.48	\$425.93	\$448.78	\$430.91	\$447.44	\$430.78		\$408.58
Nov-19	52,336		\$429.62	\$425.92	\$430.13	\$426.56	\$464.78	\$431.04	\$462.38	\$430.83		\$433.09
Dec-19	52,336		\$430.28	\$426.58	\$430.77	\$427.20	\$478.92	\$433.53	\$476.25	\$433.19		\$433.07
Jan-20	52,336		\$430.96	\$427.25	\$431.42	\$427.84	\$454.93	\$434.97	\$453.42	\$434.55		\$433.05
Feb-20	52,336		\$431.64	\$427.91	\$432.07	\$428.49	\$448.47	\$436.57	\$447.43	\$436.08		\$433.03
Mar-20	52,336		\$432.28	\$428.59	\$432.68	\$429.14	\$438.92	\$439.50	\$438.84	\$438.93		\$433.01
Apr-20	52,336		\$432.96	\$429.26	\$433.34	\$429.79	\$436.47	\$440.25	\$435.97	\$439.62		\$432.99
May-20	52,336		\$433.63	\$429.94	\$433.97	\$430.43	\$436.21	\$441.78	\$435.95	\$441.09		\$432.97
Jun-20	52,336		\$434.31	\$430.61	\$434.62	\$431.08	\$439.57	\$444.00	\$439.30	\$443.23		\$432.95
Jul-20	52,336		\$434.98	\$431.29	\$435.25	\$431.73	\$450.28	\$445.85	\$449.11	\$444.98		\$432.93
Aug-20	52,336		\$435.67	\$431.96	\$435.91	\$432.37	\$412.47	\$447.18	\$413.91	\$446.26		\$432.91
Sep-20	52,336		\$436.36	\$432.63	\$436.56	\$433.02	\$448.20	\$446.50	\$446.51	\$445.54		\$432.89
Oct-20	52,336		\$437.03	\$433.31	\$437.19	\$433.66	\$473.14	\$448.53	\$470.71	\$447.48		\$432.87
Nov-20	52,336		\$437.72	\$433.98	\$437.85	\$434.30	\$482.74	\$450.03	\$478.32	\$448.81		\$432.85
Dec-20	52,336		\$438.39	\$434.66	\$438.48	\$434.95	\$497.38	\$451.57	\$492.20	\$450.14		\$432.83
Jan-21	52,336		\$439.08	\$435.34	\$439.13	\$435.59	\$472.40	\$453.02	\$469.36	\$451.47		\$432.81
Feb-21	52,336		\$439.78	\$436.02	\$439.78	\$436.23	\$465.64	\$454.45	\$463.37	\$452.80		\$432.79
Mar-21	52,336		\$440.41	\$436.69	\$440.37	\$436.87	\$455.67	\$455.85	\$454.78	\$454.12		\$432.77
Apr-21	52,336		\$441.11	\$437.37	\$441.03	\$437.51	\$453.08	\$457.23	\$451.91	\$455.45		\$432.75
May-21	52,336		\$441.78	\$438.05	\$441.66	\$438.15	\$452.76	\$458.61	\$451.90	\$456.78		\$432.73
Jun-21	52,336		\$442.48	\$438.73	\$442.31	\$438.79	\$456.19	\$460.00	\$455.24	\$458.11		\$432.71
Jul-21	52,336		\$443.16	\$439.41	\$442.94	\$439.43	\$467.25	\$461.41	\$465.05	\$459.44		\$432.68
Aug-21	52,336		\$443.86	\$440.10	\$443.60	\$440.08	\$427.97	\$462.70	\$429.85	\$460.77		\$432.66
Sep-21	52,336		\$444.56	\$440.78	\$444.25	\$440.72	\$464.99	\$464.10	\$462.45	\$462.10		\$432.64
Oct-21	52,336		\$445.25	\$441.46	\$444.88	\$441.36	\$490.81	\$465.57	\$486.65	\$463.42		\$432.62
Nov-21	52,336		\$445.95	\$442.15	\$445.54	\$442.00	\$500.71	\$467.07	\$494.27	\$464.75		\$432.60
Dec-21	52,336		\$446.63	\$442.84	\$446.17	\$442.64	\$515.83	\$468.61	\$508.14	\$466.08		\$432.58
Utilization Trend				1.89%		1.79%		3.95%		3.70%		0.48%
RMSE (root mean square error)				24.07		23.92		25.03		24.91		28.25

MEDICAL UTILIZATION TREND CALCULATION

Utilization Trend Calculation - Total - 36 Month

Month	Membership	Adjusted Allowed Claims PMPM	Logistic Regression		Linear Regression		Holt-Winters' Multiplicative		Holt-Winters' Additive		Double Exp Smoothing	
			Fitted PMPM	Rolling 12 PMPM	Fitted PMPM	Rolling 12 PMPM	Fitted PMPM	Rolling 12 PMPM	Fitted PMPM	Rolling 12 PMPM	Fitted PMPM	Rolling 12 PMPM
			Nov-16	51,926	\$453.23	\$405.10		\$406.01				
Dec-16	51,220	\$438.36	\$405.79		\$406.70						\$453.23	
Jan-17	54,466	\$408.56	\$406.50		\$407.42						\$447.07	
Feb-17	54,376	\$375.98	\$407.22		\$408.14						\$431.10	
Mar-17	54,286	\$384.78	\$407.87		\$408.79						\$408.23	
Apr-17	54,315	\$390.45	\$408.58		\$409.51						\$398.46	
May-17	54,511	\$402.95	\$409.28		\$410.21						\$395.09	
Jun-17	54,564	\$390.25	\$410.00		\$410.93						\$398.29	
Jul-17	54,781	\$442.08	\$410.70		\$411.63						\$394.90	
Aug-17	54,843	\$354.99	\$411.42		\$412.35						\$414.40	
Sep-17	54,384	\$392.58	\$412.15		\$413.07						\$389.74	
Oct-17	54,362	\$425.75	\$412.85	\$408.99	\$413.77	\$409.91					\$390.85	
Nov-17	54,513	\$432.41	\$413.58	\$409.68	\$414.49	\$410.61	\$453.23	\$453.23		\$405.26	\$410.34	
Dec-17	54,478	\$453.39	\$414.28	\$410.37	\$415.18	\$411.29	\$437.83	\$437.83	\$437.65	\$416.46	\$407.49	
Jan-18	52,507	\$434.66	\$415.01	\$411.07	\$415.90	\$411.99	\$408.25	\$408.25	\$408.11	\$431.73	\$406.13	
Feb-18	52,433	\$431.74	\$415.74	\$411.77	\$416.62	\$412.68	\$376.29	\$376.29	\$376.37	\$432.93	\$406.21	
Mar-18	52,332	\$390.58	\$416.40	\$412.47	\$417.27	\$413.38	\$386.82	\$386.82	\$387.33	\$432.42	\$408.15	
Apr-18	52,560	\$430.08	\$417.13	\$413.17	\$417.99	\$414.08	\$393.44	\$393.44	\$394.12	\$415.05	\$409.53	
May-18	52,733	\$408.61	\$417.85	\$413.89	\$418.69	\$414.78	\$407.93	\$407.93	\$408.90	\$421.25	\$411.71	
Jun-18	52,720	\$396.32	\$418.58	\$414.60	\$419.41	\$415.49	\$396.34	\$396.34	\$397.72	\$415.98	\$413.20	
Jul-18	53,446	\$396.55	\$419.29	\$415.32	\$420.11	\$416.21	\$450.41	\$450.41	\$451.03	\$407.79	\$414.31	
Aug-18	53,468	\$388.75	\$420.03	\$416.05	\$420.83	\$416.92	\$361.68	\$361.68	\$363.60	\$403.09	\$413.37	
Sep-18	53,278	\$449.57	\$420.77	\$416.78	\$421.55	\$417.64	\$401.52	\$401.52	\$402.83	\$397.10	\$414.02	
Oct-18	53,566	\$424.29	\$421.49	\$417.51	\$422.24	\$418.35	\$437.99	\$409.57	\$438.71	\$410.22	\$418.79	\$416.39
Nov-18	53,900	\$423.04	\$422.23	\$418.24	\$422.96	\$419.07	\$459.38	\$410.05	\$459.72	\$410.73	\$421.04	\$417.74
Dec-18	53,803	\$474.29	\$422.95	\$418.98	\$423.66	\$419.79	\$459.26	\$411.83	\$458.71	\$412.48	\$421.84	\$418.20
Jan-19	54,540	\$434.39	\$423.69	\$419.71	\$424.38	\$420.51	\$434.36	\$414.05	\$434.51	\$414.72	\$443.55	\$419.25
Feb-19	54,495	\$430.55	\$424.44	\$420.44	\$425.10	\$421.21	\$413.43	\$417.08	\$413.89	\$417.79	\$439.74	\$419.87
Mar-19	54,459	\$443.09	\$425.11	\$421.16	\$425.75	\$421.92	\$403.50	\$418.39	\$405.19	\$419.20	\$435.92	\$420.21
Apr-19	54,100	\$406.40	\$425.86	\$421.88	\$426.47	\$422.62	\$425.16	\$421.00	\$425.77	\$421.80	\$438.88	\$422.20
May-19	53,986	\$418.89	\$426.59	\$422.61	\$427.17	\$423.32	\$425.21	\$422.42	\$426.16	\$423.21	\$425.40	\$422.54
Jun-19	53,631	\$434.07	\$427.34	\$423.33	\$427.89	\$424.02	\$413.02	\$423.76	\$414.53	\$424.57	\$422.68	\$423.09
Jul-19	52,969	\$439.46	\$428.07	\$424.05	\$428.59	\$424.72	\$448.49	\$423.59	\$448.98	\$424.39	\$427.37	\$424.70
Aug-19	52,672	\$397.63	\$428.82	\$424.77	\$429.31	\$425.42	\$390.08	\$425.98	\$392.99	\$426.86	\$432.36	\$427.12
Sep-19	52,492	\$397.55	\$429.58	\$425.49	\$430.03	\$426.11	\$440.66	\$429.20	\$440.51	\$429.96	\$417.94	\$428.85
Oct-19	52,336	\$464.58	\$430.31	\$426.22	\$430.72	\$426.81	\$452.01	\$430.32	\$451.37	\$430.97	\$409.46	\$428.11
Nov-19	52,336		\$431.07	\$426.95	\$431.44	\$427.51	\$465.61	\$430.76	\$464.59	\$431.30	\$432.26	\$429.05
Dec-19	52,336		\$431.80	\$427.68	\$432.14	\$428.21	\$487.31	\$432.99	\$484.09	\$433.31	\$432.24	\$429.91
Jan-20	52,336		\$432.56	\$428.42	\$432.86	\$428.92	\$455.10	\$434.68	\$453.92	\$434.90	\$432.22	\$428.94
Feb-20	52,336		\$433.32	\$429.17	\$433.58	\$429.63	\$440.30	\$436.97	\$439.69	\$437.09	\$432.20	\$428.28
Mar-20	52,336		\$434.03	\$429.92	\$434.25	\$430.34	\$438.71	\$439.98	\$438.47	\$439.94	\$432.18	\$427.94
Apr-20	52,336		\$434.80	\$430.67	\$434.97	\$431.06	\$436.64	\$440.98	\$436.47	\$440.87	\$432.16	\$427.36
May-20	52,336		\$435.54	\$431.42	\$435.67	\$431.78	\$441.80	\$442.39	\$441.46	\$442.18	\$432.14	\$427.92
Jun-20	52,336		\$436.31	\$432.18	\$436.39	\$432.49	\$440.07	\$444.71	\$439.72	\$444.33	\$432.12	\$428.72
Jul-20	52,336		\$437.05	\$432.93	\$437.09	\$433.20	\$464.17	\$446.01	\$462.53	\$445.45	\$432.10	\$429.11
Aug-20	52,336		\$437.82	\$433.68	\$437.81	\$433.91	\$409.79	\$447.68	\$411.66	\$447.04	\$432.08	\$429.09
Sep-20	52,336		\$438.59	\$434.43	\$438.53	\$434.62	\$441.53	\$447.75	\$441.04	\$447.08	\$432.06	\$430.27
Oct-20	52,336		\$439.34	\$435.18	\$439.23	\$435.33	\$476.64	\$449.81	\$473.79	\$448.95	\$432.04	\$432.15
Nov-20	52,336		\$440.11	\$435.94	\$439.95	\$436.04	\$485.47	\$451.46	\$481.84	\$450.39	\$432.02	\$432.13
Dec-20	52,336		\$440.86	\$436.69	\$440.64	\$436.75	\$508.02	\$453.19	\$501.35	\$451.83	\$432.00	\$432.11
Jan-21	52,336		\$441.64	\$437.45	\$441.36	\$437.46	\$474.37	\$454.79	\$471.17	\$453.27	\$431.98	\$432.09
Feb-21	52,336		\$442.41	\$438.21	\$442.08	\$438.16	\$458.88	\$456.34	\$456.94	\$454.70	\$431.96	\$432.07
Mar-21	52,336		\$443.12	\$438.96	\$442.73	\$438.87	\$457.16	\$457.88	\$455.72	\$456.14	\$431.94	\$432.05
Apr-21	52,336		\$443.90	\$439.72	\$443.45	\$439.58	\$454.93	\$459.40	\$453.72	\$457.58	\$431.92	\$432.03
May-21	52,336		\$444.65	\$440.48	\$444.15	\$440.28	\$460.25	\$460.94	\$458.71	\$459.02	\$431.90	\$432.01
Jun-21	52,336		\$445.44	\$441.24	\$444.87	\$440.99	\$458.38	\$462.47	\$456.98	\$460.45	\$431.88	\$431.99
Jul-21	52,336		\$446.19	\$442.01	\$445.57	\$441.70	\$483.42	\$464.07	\$479.78	\$461.89	\$431.86	\$431.97
Aug-21	52,336		\$446.98	\$442.77	\$446.29	\$442.40	\$426.73	\$465.48	\$428.91	\$463.33	\$431.84	\$431.95
Sep-21	52,336		\$447.77	\$443.53	\$447.01	\$443.11	\$459.71	\$467.00	\$458.29	\$464.77	\$431.83	\$431.93
Oct-21	52,336		\$448.53	\$444.30	\$447.70	\$443.82	\$496.20	\$468.63	\$491.05	\$466.21	\$431.81	\$431.91
Nov-21	52,336		\$449.32	\$445.07	\$448.42	\$444.52	\$505.33	\$470.28	\$499.09	\$467.64	\$431.79	\$431.89
Dec-21	52,336		\$450.08	\$445.84	\$449.12	\$445.23	\$528.73	\$472.01	\$518.60	\$469.08	\$431.77	\$431.87
Utilization Trend			2.10%		1.97%		4.36%		3.99%		0.40%	
RMSE (root mean square error)			23.98		23.85		27.64		27.38		28.9	

MEDICAL UTILIZATION TREND CALCULATION

Utilization Trend Calculation - Total - 24 Month

Month	Membership	Adjusted Allowed Claims PMPM	Logistic Regression		Linear Regression		Holt-Winters' Multiplicative		Holt-Winters' Additive		Double Exp Smoothing	
			Fitted PMPM	Rolling 12 PMPM	Fitted PMPM	Rolling 12 PMPM	Fitted PMPM	Rolling 12 PMPM	Fitted PMPM	Rolling 12 PMPM	Fitted PMPM	Rolling 12 PMPM
			Nov-17	54,513	\$432.41	\$422.32		422.81362				
Dec-17	54,478	\$453.39	\$422.50		\$423.00						\$432.41	
Jan-18	52,507	\$434.66	\$422.69		\$423.20						\$433.11	
Feb-18	52,433	\$431.74	\$422.87		\$423.40						\$433.17	
Mar-18	52,332	\$390.58	\$423.04		\$423.58						\$433.12	
Apr-18	52,560	\$430.08	\$423.23		\$423.78						\$431.69	
May-18	52,733	\$408.61	\$423.41		\$423.97						\$431.63	
Jun-18	52,720	\$396.32	\$423.59		\$424.16						\$430.86	
Jul-18	53,446	\$396.55	\$423.77		\$424.36						\$429.70	
Aug-18	53,468	\$388.75	\$423.96		\$424.55						\$428.58	
Sep-18	53,278	\$449.57	\$424.15		\$424.75						\$427.24	
Oct-18	53,566	\$424.29	\$424.33	\$423.32	\$424.94	\$423.87					\$427.98	
Nov-18	53,900	\$423.04	\$424.51	\$423.51	\$425.14	\$424.07	\$432.41		\$432.41		\$427.85	\$430.60
Dec-18	53,803	\$474.29	\$424.70	\$423.69	\$425.33	\$424.27	\$453.17		\$453.17		\$427.69	\$430.20
Jan-19	54,540	\$434.39	\$424.88	\$423.88	\$425.53	\$424.46	\$434.80		\$434.80		\$429.25	\$429.88
Feb-19	54,495	\$430.55	\$425.07	\$424.06	\$425.72	\$424.66	\$431.99		\$432.13		\$429.42	\$429.57
Mar-19	54,459	\$443.09	\$425.24	\$424.24	\$425.90	\$424.85	\$390.89		\$391.10		\$429.45	\$429.27
Apr-19	54,100	\$406.40	\$425.43	\$424.43	\$426.10	\$425.04	\$431.84		\$432.39		\$429.91	\$429.13
May-19	53,986	\$418.89	\$425.61	\$424.61	\$426.29	\$425.24	\$410.46		\$411.07		\$429.12	\$428.92
Jun-19	53,631	\$434.07	\$425.79	\$424.79	\$426.49	\$425.43	\$398.73		\$399.58		\$428.77	\$428.75
Jul-19	52,969	\$439.46	\$425.97	\$424.97	\$426.68	\$425.62	\$400.29		\$401.57		\$428.94	\$428.69
Aug-19	52,672	\$397.63	\$426.16	\$425.15	\$426.88	\$425.81	\$394.23		\$396.19		\$429.29	\$428.75
Sep-19	52,492	\$397.55	\$426.35	\$425.33	\$427.07	\$426.00	\$457.56				\$428.23	\$428.83
Oct-19	52,336	\$464.58	\$426.53	\$425.51	\$427.27	\$426.19	\$432.05	\$422.35	\$433.50	\$423.04	\$427.19	\$428.77
Nov-19	52,336		\$426.72	\$425.70	\$427.46	\$426.38	\$432.51	\$422.34	\$434.27	\$423.17	\$428.44	\$428.82
Dec-19	52,336		\$426.90	\$425.88	\$427.65	\$426.58	\$486.13	\$424.96	\$486.67	\$425.85	\$428.44	\$428.88
Jan-20	52,336		\$427.09	\$426.06	\$427.85	\$426.77	\$446.40	\$425.88	\$447.97	\$426.89	\$428.44	\$428.81
Feb-20	52,336		\$427.28	\$426.25	\$428.05	\$426.97	\$443.62	\$426.81	\$445.35	\$427.96	\$428.43	\$428.73
Mar-20	52,336		\$427.45	\$426.43	\$428.23	\$427.16	\$456.97	\$432.39	\$458.23	\$433.63	\$428.43	\$428.64
Apr-20	52,336		\$427.64	\$426.62	\$428.43	\$427.36	\$419.94	\$431.41	\$422.42	\$432.80	\$428.42	\$428.51
May-20	52,336		\$427.82	\$426.81	\$428.62	\$427.55	\$433.46	\$433.37	\$435.56	\$434.89	\$428.42	\$428.45
Jun-20	52,336		\$428.01	\$426.99	\$428.82	\$427.75	\$449.36	\$437.65	\$450.86	\$439.23	\$428.42	\$428.43
Jul-20	52,336		\$428.19	\$427.18	\$429.01	\$427.95	\$454.64	\$442.22	\$455.79	\$443.78	\$428.41	\$428.38
Aug-20	52,336		\$428.38	\$427.36	\$429.21	\$428.14	\$411.09	\$443.65	\$413.52	\$445.25	\$428.41	\$428.31
Sep-20	52,336		\$428.57	\$427.55	\$429.41	\$428.33	\$411.40	\$439.80	\$413.99	\$441.51	\$428.40	\$428.32
Oct-20	52,336		\$428.75	\$427.73	\$429.60	\$428.53	\$480.60	\$443.84	\$480.93	\$445.46	\$428.40	\$428.42
Nov-20	52,336		\$428.94	\$427.92	\$429.79	\$428.72	\$447.42	\$445.09	\$450.65	\$446.83	\$428.40	\$428.42
Dec-20	52,336		\$429.12	\$428.10	\$429.99	\$428.92	\$502.84	\$446.48	\$503.05	\$448.19	\$428.39	\$428.41
Jan-21	52,336		\$429.31	\$428.29	\$430.18	\$429.11	\$461.70	\$447.75	\$464.35	\$449.56	\$428.39	\$428.41
Feb-21	52,336		\$429.50	\$428.48	\$430.38	\$429.31	\$458.78	\$449.02	\$461.73	\$450.92	\$428.38	\$428.41
Mar-21	52,336		\$429.67	\$428.66	\$430.56	\$429.50	\$472.54	\$450.31	\$474.61	\$452.29	\$428.38	\$428.40
Apr-21	52,336		\$429.86	\$428.85	\$430.76	\$429.69	\$434.21	\$451.50	\$438.80	\$453.65	\$428.38	\$428.40
May-21	52,336		\$430.04	\$429.03	\$430.95	\$429.89	\$448.15	\$452.73	\$451.94	\$455.02	\$428.37	\$428.39
Jun-21	52,336		\$430.23	\$429.22	\$431.14	\$430.08	\$464.55	\$453.99	\$467.24	\$456.38	\$428.37	\$428.39
Jul-21	52,336		\$430.42	\$429.40	\$431.34	\$430.27	\$469.96	\$455.27	\$472.17	\$457.75	\$428.37	\$428.39
Aug-21	52,336		\$430.61	\$429.59	\$431.53	\$430.47	\$424.90	\$456.42	\$429.90	\$459.11	\$428.36	\$428.38
Sep-21	52,336		\$430.80	\$429.77	\$431.73	\$430.66	\$425.18	\$457.57	\$430.38	\$460.48	\$428.36	\$428.38
Oct-21	52,336		\$430.98	\$429.96	\$431.92	\$430.86	\$496.66	\$458.91	\$497.31	\$461.84	\$428.35	\$428.38
Nov-21	52,336		\$431.17	\$430.14	\$432.12	\$431.05	\$462.33	\$460.15	\$467.03	\$463.21	\$428.35	\$428.37
Dec-21	52,336		\$431.35	\$430.33	\$432.31	\$431.24	\$519.55	\$461.54	\$519.43	\$464.57	\$428.35	\$428.37
Utilization Trend				0.52%		0.55%		4.18%		4.42%		-0.04%
RMSE (root mean square error)				23.54		23.42		30.87		30.73		24.43

MEDICAL UTILIZATION TREND CALCULATION

Pure Premium Trend - Pharmaceuticals Processed through the Medical Benefit

Month	MONTHLY DATA			ROLLING 12		
	Members	Contract Adjusted Allowed Charges	Total Specialty PMPM	Members	Contract Adjusted Allowed Charges	Rolling 12 PMPM
Nov-15	57,692	\$ 1,929,844	\$33.45			
Dec-15	57,890	\$ 2,090,382	\$36.11			
Jan-16	52,944	\$ 1,642,972	\$31.03			
Feb-16	52,655	\$ 1,672,271	\$31.76			
Mar-16	52,655	\$ 1,721,443	\$32.69			
Apr-16	52,628	\$ 1,588,606	\$30.19			
May-16	52,040	\$ 1,808,895	\$34.76			
Jun-16	52,000	\$ 2,349,159	\$45.18			
Jul-16	51,849	\$ 1,819,940	\$35.10			
Aug-16	51,743	\$ 1,958,948	\$37.86			
Sep-16	51,752	\$ 2,117,894	\$40.92			
Oct-16	51,944	\$ 2,129,461	\$41.00	637,792	\$ 22,829,813	\$35.80
Nov-16	51,926	\$ 2,301,534	\$44.32	632,026	\$ 23,201,503	\$36.71
Dec-16	51,220	\$ 1,755,070	\$34.27	625,356	\$ 22,866,191	\$36.57
Jan-17	54,466	\$ 1,710,079	\$31.40	626,878	\$ 22,933,299	\$36.58
Feb-17	54,376	\$ 1,819,245	\$33.46	628,599	\$ 23,080,273	\$36.72
Mar-17	54,286	\$ 1,863,763	\$34.33	630,230	\$ 23,222,593	\$36.85
Apr-17	54,315	\$ 1,548,511	\$28.51	631,917	\$ 23,182,497	\$36.69
May-17	54,511	\$ 1,982,522	\$36.37	634,388	\$ 23,356,125	\$36.82
Jun-17	54,564	\$ 1,917,788	\$35.15	636,952	\$ 22,924,755	\$35.99
Jul-17	54,781	\$ 1,837,081	\$33.53	639,884	\$ 22,941,895	\$35.85
Aug-17	54,843	\$ 2,110,904	\$38.49	642,984	\$ 23,093,852	\$35.92
Sep-17	54,384	\$ 2,080,184	\$38.25	645,616	\$ 23,056,142	\$35.71
Oct-17	54,362	\$ 2,325,316	\$42.77	648,034	\$ 23,251,997	\$35.88
Nov-17	54,513	\$ 2,377,450	\$43.61	650,621	\$ 23,327,914	\$35.85
Dec-17	54,478	\$ 2,121,689	\$38.95	653,879	\$ 23,694,533	\$36.24
Jan-18	52,507	\$ 2,669,130	\$50.83	651,920	\$ 24,653,584	\$37.82
Feb-18	52,433	\$ 2,215,209	\$42.25	649,977	\$ 25,049,548	\$38.54
Mar-18	52,332	\$ 2,597,267	\$49.63	648,023	\$ 25,783,052	\$39.79
Apr-18	52,560	\$ 2,113,872	\$40.22	646,268	\$ 26,348,413	\$40.77
May-18	52,733	\$ 2,526,707	\$47.92	644,490	\$ 26,892,598	\$41.73
Jun-18	52,720	\$ 2,018,324	\$38.28	642,646	\$ 26,993,134	\$42.00
Jul-18	53,446	\$ 2,331,045	\$43.61	641,311	\$ 27,487,098	\$42.86
Aug-18	53,468	\$ 2,268,543	\$42.43	639,936	\$ 27,644,737	\$43.20
Sep-18	53,278	\$ 2,009,757	\$37.72	638,830	\$ 27,574,310	\$43.16
Oct-18	53,566	\$ 2,335,503	\$43.60	638,034	\$ 27,584,497	\$43.23
Nov-18	53,900	\$ 2,712,278	\$50.32	637,421	\$ 27,919,325	\$43.80
Dec-18	53,803	\$ 2,378,696	\$44.21	636,746	\$ 28,176,332	\$44.25
Jan-19	54,540	\$ 2,648,395	\$48.56	638,779	\$ 28,155,597	\$44.08
Feb-19	54,495	\$ 2,170,804	\$39.83	640,841	\$ 28,111,193	\$43.87
Mar-19	54,459	\$ 2,484,915	\$45.63	642,968	\$ 27,998,841	\$43.55
Apr-19	54,100	\$ 2,451,851	\$45.32	644,508	\$ 28,336,819	\$43.97
May-19	53,986	\$ 2,911,812	\$53.94	645,761	\$ 28,721,924	\$44.48
Jun-19	53,631	\$ 2,466,694	\$45.99	646,672	\$ 29,170,293	\$45.11
Jul-19	52,969	\$ 2,637,390	\$49.79	646,195	\$ 29,476,638	\$45.62
Aug-19	52,672	\$ 2,668,101	\$50.66	645,399	\$ 29,876,196	\$46.29
Sep-19	52,492	\$ 2,728,500	\$51.98	644,613	\$ 30,594,939	\$47.46
Oct-19	52,336	\$ 2,702,579	\$51.64	643,383	\$ 30,962,014	\$48.12

Pure Premium Trend

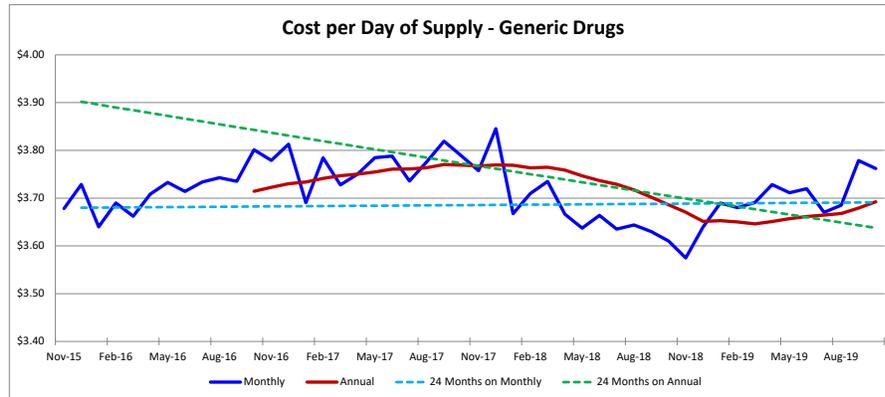
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PHARMACY TREND DEVELOPMENT FOR ESI CLAIMS

GENERIC DRUGS - COST TREND

Incurred Date	MONTHLY DATA				ROLLING 12			EXPONENTIAL FIT	
	Supply	AWP Cost	Cost/ Supply	Monthly Cost Trend	Supply	Adjusted Allowed Charge	Rolling 12 Cost Trend	Monthly Data	Rolling 12 Data
Nov-15	1,409,298	\$5,183,691	\$3.68						
Dec-15	1,591,712	\$5,934,947	\$3.73					\$3.68	\$3.90
Jan-16	1,262,298	\$4,594,783	\$3.64					\$3.68	\$3.90
Feb-16	1,256,328	\$4,635,929	\$3.69					\$3.68	\$3.89
Mar-16	1,373,082	\$5,028,527	\$3.66					\$3.68	\$3.88
Apr-16	1,284,625	\$4,764,149	\$3.71					\$3.68	\$3.88
May-16	1,300,908	\$4,856,287	\$3.73					\$3.68	\$3.87
Jun-16	1,329,245	\$4,936,589	\$3.71					\$3.68	\$3.87
Jul-16	1,281,364	\$4,784,181	\$3.73					\$3.68	\$3.86
Aug-16	1,334,789	\$4,995,914	\$3.74					\$3.68	\$3.85
Sep-16	1,310,879	\$4,896,533	\$3.74					\$3.68	\$3.85
Oct-16	1,338,459	\$5,087,901	\$3.80		16,072,987	\$59,699,430	\$3.71	\$3.68	\$3.84
Nov-16	1,319,442	\$4,986,389	\$3.78	2.7%	15,983,131	\$59,502,128	\$3.72	\$3.68	\$3.84
Dec-16	1,385,091	\$5,281,115	\$3.81	2.3%	15,776,510	\$58,848,297	\$3.73	\$3.68	\$3.83
Jan-17	1,360,948	\$5,022,766	\$3.69	1.4%	15,875,160	\$59,276,280	\$3.73	\$3.68	\$3.83
Feb-17	1,207,752	\$4,570,607	\$3.78	2.6%	15,826,584	\$59,210,958	\$3.74	\$3.68	\$3.82
Mar-17	1,366,361	\$5,093,620	\$3.73	1.8%	15,819,863	\$59,276,052	\$3.75	\$3.68	\$3.81
Apr-17	1,246,700	\$4,675,406	\$3.75	1.1%	15,781,938	\$59,187,310	\$3.75	\$3.68	\$3.81
May-17	1,330,444	\$5,035,245	\$3.78	1.4%	15,811,474	\$59,366,267	\$3.75	\$3.68	\$3.80
Jun-17	1,260,883	\$4,776,244	\$3.79	2.0%	15,743,112	\$59,205,922	\$3.76	\$3.68	\$3.80
Jul-17	1,222,858	\$4,568,241	\$3.74	0.1%	15,684,606	\$58,989,981	\$3.76	\$3.68	\$3.79
Aug-17	1,288,361	\$4,865,383	\$3.78	0.9%	15,638,178	\$58,859,451	\$3.76	\$3.68	\$3.78
Sep-17	1,158,472	\$4,424,365	\$3.82	2.2%	15,485,771	\$58,387,282	\$3.77	\$3.69	\$3.78
Oct-17	1,255,779	\$4,757,527	\$3.79	-0.3%	15,403,091	\$58,056,908	\$3.77	\$3.69	\$3.77
Nov-17	1,225,377	\$4,604,450	\$3.76	-0.6%	15,309,026	\$57,674,969	\$3.77	\$3.69	\$3.77
Dec-17	1,218,854	\$4,687,087	\$3.85	0.9%	15,142,789	\$57,080,941	\$3.77	\$3.69	\$3.76
Jan-18	1,157,515	\$4,245,081	\$3.67	-0.6%	14,939,356	\$56,303,255	\$3.77	\$3.69	\$3.76
Feb-18	1,014,396	\$3,763,326	\$3.71	-2.0%	14,746,000	\$55,495,974	\$3.76	\$3.69	\$3.75
Mar-18	1,106,472	\$4,132,462	\$3.73	0.2%	14,486,111	\$54,534,816	\$3.76	\$3.69	\$3.74
Apr-18	1,056,401	\$3,872,957	\$3.67	-2.2%	14,295,812	\$53,732,367	\$3.76	\$3.69	\$3.74
May-18	1,107,939	\$4,029,696	\$3.64	-3.9%	14,073,307	\$52,726,818	\$3.75	\$3.69	\$3.73
Jun-18	1,023,335	\$3,749,404	\$3.66	-3.3%	13,835,759	\$51,699,978	\$3.74	\$3.69	\$3.73
Jul-18	1,070,647	\$3,891,834	\$3.64	-2.7%	13,683,548	\$51,023,572	\$3.73	\$3.69	\$3.72
Aug-18	1,091,241	\$3,976,164	\$3.64	-3.5%	13,486,428	\$50,134,352	\$3.72	\$3.69	\$3.72
Sep-18	980,218	\$3,558,349	\$3.63	-4.9%	13,308,174	\$49,268,336	\$3.70	\$3.69	\$3.71
Oct-18	1,100,202	\$3,972,050	\$3.61	-4.7%	13,152,597	\$48,482,859	\$3.69	\$3.69	\$3.70
Nov-18	1,055,794	\$3,774,273	\$3.57	-4.9%	12,983,014	\$47,652,682	\$3.67	\$3.69	\$3.70
Dec-18	1,074,026	\$3,908,910	\$3.64	-5.4%	12,838,186	\$46,874,505	\$3.65	\$3.69	\$3.69
Jan-19	1,038,419	\$3,831,537	\$3.69	0.6%	12,719,090	\$46,460,961	\$3.65	\$3.69	\$3.69
Feb-19	927,070	\$3,411,587	\$3.68	-0.8%	12,631,764	\$46,109,222	\$3.65	\$3.69	\$3.68
Mar-19	1,014,495	\$3,744,481	\$3.69	-1.2%	12,539,787	\$45,721,240	\$3.65	\$3.69	\$3.68
Apr-19	1,008,472	\$3,759,893	\$3.73	1.7%	12,491,858	\$45,608,176	\$3.65	\$3.69	\$3.67
May-19	1,001,705	\$3,717,564	\$3.71	2.0%	12,385,624	\$45,296,044	\$3.66	\$3.69	\$3.67
Jun-19	945,839	\$3,518,182	\$3.72	1.5%	12,308,128	\$45,064,822	\$3.66	\$3.69	\$3.66
Jul-19	974,438	\$3,576,397	\$3.67	1.0%	12,211,919	\$44,749,384	\$3.66	\$3.69	\$3.65
Aug-19	930,989	\$3,430,996	\$3.69	1.1%	12,051,667	\$44,204,216	\$3.67	\$3.69	\$3.65
Sep-19	896,811	\$3,388,689	\$3.78	4.1%	11,968,260	\$44,034,557	\$3.68	\$3.69	\$3.64
Oct-19	971,467	\$3,654,616	\$3.76	4.2%	11,839,525	\$43,717,124	\$3.69	\$3.69	\$3.64

Exponential Trend: 0.1% -1.8%



Regressions

24 Months on Monthly	
1.000	3.357
0.000	0.697
0.001	0.017
0.018	22.000

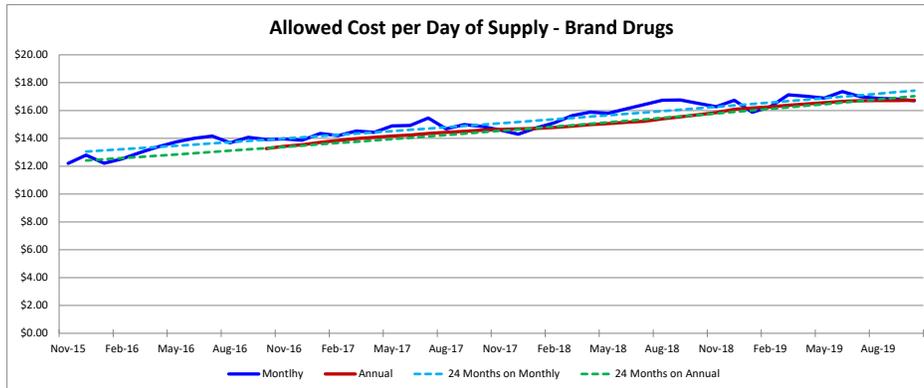
24 Months on Annual	
1.000	32.513
0.000	0.278
0.736	0.007
61.181	22.000

PHARMACY TREND DEVELOPMENT FOR ESI CLAIMS

BRAND DRUGS - COST TREND

Incurred Date	MONTHLY DATA				ROLLING 12				EXPONENTIAL FIT	
	Supply	AWP Cost	Cost/ Supply	Monthly Cost Trend	Supply	Adjusted Allowed Charge	Cost/ Supply	Rolling 12 Cost Trend	Monthly Data	Rolling 12 Data
Nov-15	193,387	\$2,359,863	\$12.20							
Dec-15	230,665	\$2,951,543	\$12.80						\$13.05	\$12.41
Jan-16	158,992	\$1,941,403	\$12.21						\$13.14	\$12.50
Feb-16	153,872	\$1,928,780	\$12.53						\$13.22	\$12.59
Mar-16	181,756	\$2,360,185	\$12.99						\$13.30	\$12.67
Apr-16	163,802	\$2,193,980	\$13.39						\$13.38	\$12.76
May-16	159,135	\$2,186,871	\$13.74						\$13.47	\$12.85
Jun-16	155,558	\$2,178,666	\$14.01						\$13.55	\$12.94
Jul-16	149,643	\$2,119,906	\$14.17						\$13.64	\$13.02
Aug-16	160,800	\$2,200,072	\$13.68		1,707,610	\$22,421,270			\$13.73	\$13.12
Sep-16	160,832	\$2,264,218	\$14.08		1,868,442	\$24,685,488			\$13.81	\$13.21
Oct-16	163,355	\$2,273,318	\$13.92		2,031,797	\$26,958,807	\$13.27		\$13.90	\$13.30
Nov-16	161,881	\$2,259,520	\$13.96	14.4%	2,000,291	\$26,858,465	\$13.43		\$13.99	\$13.39
Dec-16	179,104	\$2,483,200	\$13.86	8.4%	1,948,730	\$26,390,121	\$13.54		\$14.08	\$13.48
Jan-17	155,052	\$2,226,005	\$14.36	17.6%	1,944,790	\$26,674,724	\$13.72		\$14.17	\$13.58
Feb-17	139,030	\$1,974,655	\$14.20	13.3%	1,929,948	\$26,720,598	\$13.85		\$14.26	\$13.67
Mar-17	164,438	\$2,388,714	\$14.53	11.9%	1,912,630	\$26,749,127	\$13.99		\$14.34	\$13.76
Apr-17	146,119	\$2,108,734	\$14.43	7.7%	1,894,947	\$26,663,881	\$14.07		\$14.43	\$13.86
May-17	161,626	\$2,408,086	\$14.90	8.4%	1,897,438	\$26,885,095	\$14.17		\$14.52	\$13.95
Jun-17	153,671	\$2,294,212	\$14.93	6.6%	1,895,551	\$27,000,641	\$14.24		\$14.62	\$14.05
Jul-17	152,218	\$2,353,698	\$15.46	9.2%	1,898,126	\$27,234,434	\$14.35		\$14.71	\$14.14
Aug-17	158,257	\$2,322,810	\$14.68	7.3%	1,895,583	\$27,357,172	\$14.43		\$14.80	\$14.24
Sep-17	149,909	\$2,246,461	\$14.99	6.4%	1,884,660	\$27,339,415	\$14.51		\$14.90	\$14.34
Oct-17	171,371	\$2,545,223	\$14.85	6.7%	1,892,676	\$27,611,319	\$14.59	9.9%	\$14.99	\$14.44
Nov-17	168,063	\$2,453,949	\$14.60	4.6%	1,898,858	\$27,805,748	\$14.64	9.1%	\$15.08	\$14.54
Dec-17	178,975	\$2,558,667	\$14.30	3.1%	1,898,729	\$27,881,215	\$14.68	8.4%	\$15.18	\$14.64
Jan-18	145,807	\$2,151,613	\$14.76	2.8%	1,889,484	\$27,806,823	\$14.72	7.3%	\$15.28	\$14.74
Feb-18	132,077	\$1,996,457	\$15.12	6.4%	1,882,531	\$27,828,625	\$14.78	6.8%	\$15.37	\$14.85
Mar-18	149,696	\$2,340,884	\$15.64	7.6%	1,867,789	\$27,780,795	\$14.87	6.4%	\$15.46	\$14.94
Apr-18	146,263	\$2,323,523	\$15.89	10.1%	1,867,933	\$27,995,584	\$14.99	6.5%	\$15.56	\$15.05
May-18	149,357	\$2,359,910	\$15.80	6.0%	1,855,664	\$27,947,407	\$15.06	6.3%	\$15.66	\$15.15
Jun-18	148,045	\$2,386,125	\$16.12	8.0%	1,850,038	\$28,039,320	\$15.16	6.4%	\$15.76	\$15.26
Jul-18	142,956	\$2,349,378	\$16.43	6.3%	1,840,776	\$28,034,999	\$15.23	6.1%	\$15.86	\$15.36
Aug-18	157,222	\$2,631,964	\$16.74	14.1%	1,839,741	\$28,344,152	\$15.41	6.8%	\$15.96	\$15.47
Sep-18	146,843	\$2,460,224	\$16.75	11.8%	1,836,675	\$28,557,916	\$15.55	7.2%	\$16.06	\$15.58
Oct-18	169,677	\$2,801,050	\$16.51	11.2%	1,834,981	\$28,813,743	\$15.70	7.6%	\$16.16	\$15.68
Nov-18	165,903	\$2,700,336	\$16.28	11.5%	1,832,821	\$29,060,130	\$15.86	8.3%	\$16.27	\$15.79
Dec-18	173,010	\$2,895,461	\$16.74	17.1%	1,826,856	\$29,396,924	\$16.09	9.6%	\$16.37	\$15.90
Jan-19	154,103	\$2,445,875	\$15.87	7.6%	1,835,152	\$29,691,186	\$16.18	9.9%	\$16.47	\$16.01
Feb-19	141,370	\$2,300,257	\$16.27	7.6%	1,844,445	\$29,994,986	\$16.26	10.0%	\$16.58	\$16.13
Mar-19	145,897	\$2,498,521	\$17.13	9.5%	1,840,646	\$30,152,624	\$16.38	10.1%	\$16.67	\$16.23
Apr-19	149,585	\$2,546,919	\$17.03	7.2%	1,843,968	\$30,376,020	\$16.47	9.9%	\$16.78	\$16.34
May-19	152,532	\$2,577,280	\$16.90	6.9%	1,847,143	\$30,593,390	\$16.56	10.0%	\$16.89	\$16.45
Jun-19	142,549	\$2,475,173	\$17.36	7.7%	1,841,647	\$30,682,438	\$16.66	9.9%	\$16.99	\$16.57
Jul-19	150,535	\$2,558,589	\$17.00	3.4%	1,849,226	\$30,891,649	\$16.71	9.7%	\$17.10	\$16.68
Aug-19	146,209	\$2,467,491	\$16.88	0.8%	1,838,213	\$30,727,176	\$16.72	8.5%	\$17.21	\$16.80
Sep-19	152,635	\$2,568,925	\$16.83	0.5%	1,844,005	\$30,835,876	\$16.72	7.5%	\$17.32	\$16.92
Oct-19	163,796	\$2,736,614	\$16.71	1.2%	1,838,124	\$30,771,440	\$16.74	6.6%	\$17.43	\$17.03

Exponential Trend: 7.8% 8.6%



Regressions

24 Months on Monthly	
1.000	0.002
0.000	1.259
0.697	0.030
50.690	22.000

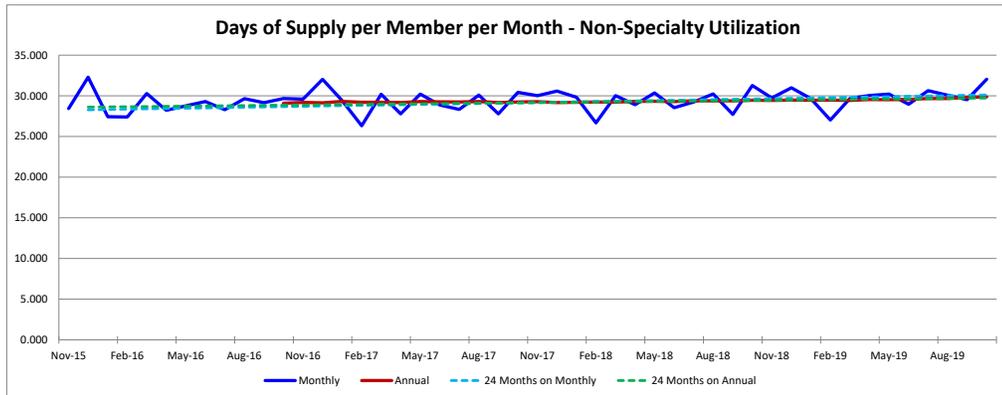
24 Months on Annual	
1.000	0.001
0.000	0.325
0.976	0.008
912.288	22.000

PHARMACY TREND DEVELOPMENT FOR ESI CLAIMS

NON-SPECIALTY DRUGS - UTILIZATION TREND

Incurred Date	MONTHLY DATA				ROLLING 12				EXPONENTIAL FIT	
	Membership	Supply	Supply per Member	Monthly Utilization Trend	Membership	Supply	Supply per Member	Rolling 12 Utilization Trend	Monthly Data	Rolling 12 Data
Nov-15	57,692	1,640,435	28.434							
Dec-15	57,890	1,869,201	32.289						28.279	28.620
Jan-16	52,944	1,452,347	27.432						28.318	28.644
Feb-16	52,655	1,442,268	27.391						28.357	28.668
Mar-16	52,655	1,594,572	30.283						28.394	28.690
Apr-16	52,628	1,485,341	28.223						28.433	28.714
May-16	52,040	1,496,796	28.762						28.472	28.737
Jun-16	52,000	1,523,092	29.290						28.511	28.762
Jul-16	51,849	1,467,167	28.297						28.549	28.785
Aug-16	51,743	1,534,199	29.650						28.589	28.809
Sep-16	51,752	1,509,054	29.159						28.629	28.833
Oct-16	51,944	1,540,850	29.664		637,792	18,555,322	29.093		28.667	28.856
Nov-16	51,926	1,537,234	29.604	4.1%	632,026	18,452,121	29.195		28.707	28.880
Dec-16	51,220	1,639,971	32.018	-0.8%	625,356	18,222,891	29.140		28.746	28.904
Jan-17	54,466	1,602,157	29.416	7.2%	626,878	18,372,701	29.308		28.786	28.928
Feb-17	54,376	1,431,326	26.323	-3.9%	628,599	18,361,759	29.211		28.826	28.952
Mar-17	54,286	1,639,452	30.200	-0.3%	630,230	18,406,639	29.206		28.862	28.974
Apr-17	54,315	1,509,577	27.793	-1.5%	631,917	18,430,874	29.167		28.902	28.998
May-17	54,511	1,647,314	30.220	5.1%	634,388	18,581,392	29.290		28.941	29.022
Jun-17	54,564	1,575,938	28.882	-1.4%	636,952	18,634,239	29.255		28.981	29.046
Jul-17	54,781	1,551,527	28.322	0.1%	639,884	18,718,599	29.253		29.020	29.069
Aug-17	54,843	1,650,615	30.097	1.5%	642,984	18,835,015	29.293		29.060	29.094
Sep-17	54,384	1,510,575	27.776	-4.7%	645,616	18,836,536	29.176		29.101	29.118
Oct-17	54,362	1,653,491	30.416	2.5%	648,034	18,949,177	29.241	0.5%	29.140	29.141
Nov-17	54,513	1,636,687	30.024	1.4%	650,621	19,048,630	29.278	0.3%	29.180	29.166
Dec-17	54,478	1,666,506	30.590	-4.5%	653,879	19,075,165	29.172	0.1%	29.219	29.189
Jan-18	52,507	1,566,328	29.831	1.4%	651,920	19,039,336	29.205	-0.4%	29.260	29.214
Feb-18	52,433	1,399,107	26.684	1.4%	649,977	19,007,117	29.243	0.1%	29.301	29.238
Mar-18	52,332	1,570,601	30.012	-0.6%	648,023	18,938,266	29.225	0.1%	29.337	29.260
Apr-18	52,560	1,520,012	28.920	4.1%	646,268	18,948,701	29.320	0.5%	29.378	29.285
May-18	52,733	1,600,801	30.357	0.5%	644,490	18,902,188	29.329	0.1%	29.418	29.308
Jun-18	52,720	1,505,017	28.547	-1.2%	642,646	18,831,267	29.303	0.2%	29.458	29.333
Jul-18	53,446	1,562,703	29.239	3.2%	641,311	18,842,443	29.381	0.4%	29.498	29.357
Aug-18	53,468	1,616,437	30.232	0.4%	639,936	18,808,265	29.391	0.3%	29.539	29.381
Sep-18	53,278	1,476,631	27.716	-0.2%	638,830	18,774,321	29.389	0.7%	29.580	29.406
Oct-18	53,566	1,674,986	31.270	2.8%	638,034	18,795,816	29.459	0.7%	29.620	29.429
Nov-18	53,900	1,602,977	29.740	-0.9%	637,421	18,762,106	29.434	0.5%	29.661	29.454
Dec-18	53,803	1,666,853	30.981	1.3%	636,746	18,762,453	29.466	1.0%	29.701	29.478
Jan-19	54,540	1,617,145	29.651	-0.6%	638,779	18,813,270	29.452	0.8%	29.742	29.502
Feb-19	54,495	1,472,715	27.025	1.3%	640,841	18,886,878	29.472	0.8%	29.783	29.527
Mar-19	54,459	1,616,407	29.681	-1.1%	642,968	18,932,684	29.446	0.8%	29.821	29.549
Apr-19	54,100	1,624,808	30.033	3.9%	644,508	19,037,480	29.538	0.7%	29.862	29.574
May-19	53,986	1,630,699	30.206	-0.5%	645,761	19,067,378	29.527	0.7%	29.902	29.598
Jun-19	53,631	1,553,564	28.968	1.5%	646,672	19,115,925	29.560	0.9%	29.944	29.623
Jul-19	52,969	1,622,817	30.637	4.8%	646,195	19,176,039	29.675	1.0%	29.984	29.647
Aug-19	52,672	1,583,669	30.067	-0.5%	645,399	19,143,271	29.661	0.9%	30.026	29.671
Sep-19	52,492	1,549,724	29.523	6.5%	644,613	19,216,364	29.811	1.4%	30.067	29.696
Oct-19	52,336	1,676,800	32.039	2.5%	643,383	19,218,178	29.871	1.4%	30.108	29.720

Exponential Trend: 1.6% 1.0%



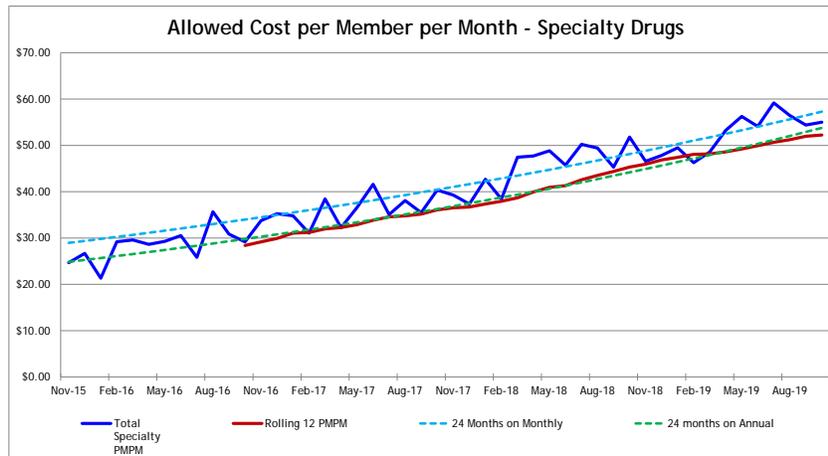
Regressions	24 Months on Monthly	24 Months on Annual
	1.000	4.248
	0.000	1.789
	0.051	0.042
	1.180	22.000
	1.000	9.146
	0.000	0.087
	0.891	0.002
	180.417	22.000

PHARMACY TREND DEVELOPMENT - SPECIALTY TREND CALCULATION

Incurred Date	MONTHLY DATA			ROLLING 12			EXPONENTIAL FIT	
	Members	Contract Adjusted Allowed Charges	Total Specialty PMPM	Members	Contract Adjusted Allowed Charges	Rolling 12 PMPM	Monthly Data	Rolling 12 Data
Nov-15	57,692	\$ 1,423,057	\$24.67				\$28.96	\$24.86
Dec-15	57,890	\$ 1,545,382	\$26.70				\$29.38	\$25.27
Jan-16	52,944	\$ 1,129,447	\$21.33				\$29.81	\$25.69
Feb-16	52,655	\$ 1,538,001	\$29.21				\$30.26	\$26.13
Mar-16	52,655	\$ 1,557,010	\$29.57				\$30.68	\$26.54
Apr-16	52,628	\$ 1,506,423	\$28.62				\$31.14	\$26.98
May-16	52,040	\$ 1,524,654	\$29.30				\$31.59	\$27.43
Jun-16	52,000	\$ 1,587,963	\$30.54				\$32.06	\$27.89
Jul-16	51,849	\$ 1,339,390	\$25.83				\$32.52	\$28.34
Aug-16	51,743	\$ 1,845,901	\$35.67				\$33.00	\$28.82
Sep-16	51,752	\$ 1,596,437	\$30.85				\$33.49	\$29.31
Oct-16	51,944	\$ 1,515,744	\$29.18	637,792	\$ 18,109,410	\$28.39	\$33.98	\$29.78
Nov-16	51,926	\$ 1,751,741	\$33.74	632,026	\$ 18,438,094	\$29.17	\$34.48	\$30.29
Dec-16	51,220	\$ 1,805,763	\$35.26	625,356	\$ 18,698,475	\$29.90	\$34.98	\$30.78
Jan-17	54,466	\$ 1,895,094	\$34.79	626,878	\$ 19,464,121	\$31.05	\$35.50	\$31.30
Feb-17	54,376	\$ 1,689,301	\$31.07	628,599	\$ 19,615,420	\$31.20	\$36.03	\$31.83
Mar-17	54,286	\$ 2,086,737	\$38.44	630,230	\$ 20,145,147	\$31.96	\$36.51	\$32.31
Apr-17	54,315	\$ 1,751,569	\$32.25	631,917	\$ 20,390,293	\$32.27	\$37.06	\$32.86
May-17	54,511	\$ 1,995,508	\$36.61	634,388	\$ 20,861,148	\$32.88	\$37.59	\$33.39
Jun-17	54,564	\$ 2,269,379	\$41.59	636,952	\$ 21,542,563	\$33.82	\$38.15	\$33.96
Jul-17	54,781	\$ 1,921,918	\$35.08	639,884	\$ 22,125,091	\$34.58	\$38.70	\$34.51
Aug-17	54,843	\$ 2,087,950	\$38.07	642,984	\$ 22,367,139	\$34.79	\$39.28	\$35.09
Sep-17	54,384	\$ 1,929,773	\$35.48	645,616	\$ 22,700,475	\$35.16	\$39.86	\$35.68
Oct-17	54,362	\$ 2,194,104	\$40.36	648,034	\$ 23,378,835	\$36.08	\$40.44	\$36.27
Nov-17	54,513	\$ 2,140,552	\$39.27	650,621	\$ 23,767,646	\$36.53	\$41.04	\$36.88
Dec-17	54,478	\$ 2,034,702	\$37.35	653,879	\$ 23,996,585	\$36.70	\$41.63	\$37.48
Jan-18	52,507	\$ 2,241,445	\$42.69	651,920	\$ 24,342,937	\$37.34	\$42.25	\$38.11
Feb-18	52,433	\$ 2,013,417	\$38.40	649,977	\$ 24,667,053	\$37.95	\$42.88	\$38.75
Mar-18	52,332	\$ 2,482,749	\$47.44	648,023	\$ 25,063,065	\$38.68	\$43.46	\$39.34
Apr-18	52,560	\$ 2,507,962	\$47.72	646,268	\$ 25,819,458	\$39.95	\$44.11	\$40.01
May-18	52,733	\$ 2,574,864	\$48.83	644,490	\$ 26,398,814	\$40.96	\$44.74	\$40.66
Jun-18	52,720	\$ 2,410,671	\$45.73	642,646	\$ 26,540,106	\$41.30	\$45.41	\$41.35
Jul-18	53,446	\$ 2,683,764	\$50.21	641,311	\$ 27,301,952	\$42.57	\$46.06	\$42.02
Aug-18	53,468	\$ 2,643,020	\$49.43	639,936	\$ 27,857,022	\$43.53	\$46.75	\$42.73
Sep-18	53,278	\$ 2,413,642	\$45.30	638,830	\$ 28,340,891	\$44.36	\$47.45	\$43.45
Oct-18	53,566	\$ 2,774,897	\$51.80	638,034	\$ 28,921,684	\$45.33	\$48.13	\$44.16
Nov-18	53,900	\$ 2,509,540	\$46.56	637,421	\$ 29,290,672	\$45.95	\$48.85	\$44.90
Dec-18	53,803	\$ 2,573,877	\$47.84	636,746	\$ 29,829,847	\$46.85	\$49.55	\$45.64
Jan-19	54,540	\$ 2,699,520	\$49.50	638,779	\$ 30,287,922	\$47.42	\$50.29	\$46.41
Feb-19	54,495	\$ 2,521,749	\$46.27	640,841	\$ 30,796,254	\$48.06	\$51.04	\$47.19
Mar-19	54,459	\$ 2,645,803	\$48.58	642,968	\$ 30,959,308	\$48.15	\$51.72	\$47.91
Apr-19	54,100	\$ 2,880,408	\$53.24	644,508	\$ 31,331,754	\$48.61	\$52.49	\$48.72
May-19	53,986	\$ 3,036,501	\$56.25	645,761	\$ 31,793,391	\$49.23	\$53.25	\$49.51
Jun-19	53,631	\$ 2,900,913	\$54.09	646,672	\$ 32,283,633	\$49.92	\$54.04	\$50.35
Jul-19	52,969	\$ 3,134,275	\$59.17	646,195	\$ 32,734,144	\$50.66	\$54.82	\$51.17
Aug-19	52,672	\$ 2,974,058	\$56.46	645,399	\$ 33,065,181	\$51.23	\$55.64	\$52.03
Sep-19	52,492	\$ 2,854,873	\$54.39	644,613	\$ 33,506,412	\$51.98	\$56.47	\$52.91
Oct-19	52,336	\$ 2,878,380	\$55.00	643,383	\$ 33,609,895	\$52.24	\$57.28	\$53.77

Exponential Trend:

19.0% 21.8%



24 Months on Monthly	
1.000	0.000
0.000	2.770
0.717	0.066
55.807	22.000

24 Months on Rolling 12	
1.001	0.000
0.000	0.751
0.978	0.018
971.799	22.000