

Blue Cross and Blue Shield of Vermont and The Vermont Health Plan
Q3 2019 Large Group Rating Program Filing
Actuarial Memorandum

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1. Purpose

Blue Cross and Blue Shield of Vermont (BCBSVT) and The Vermont Health Plan (TVHP) perform large group rating on a case-by-case basis. Rating is accomplished through a formulaic approach that blends recent group experience with a manual rate according to a credibility formula. Formula results may be adjusted for underwriting judgment and/or management decisions. This filing establishes the formula, manual rate, and accompanying factors that will be used for renewals beginning upon approval of this filing, most notably January 2020 renewals.

Once approved, this filing will be used for large group and grandfathered small group renewals (we will refer to them collectively as large groups for the remainder of the filing) prepared for business under the jurisdiction of the Green Mountain Care Board (GMCB) until superseded by a subsequent filing. In the event that renewals require factors with effective dates or experience periods beyond those explicitly presented in this filing, we will calculate appropriate factors using the same base data and methodology used in this filing. This filing will apply beginning with rates communicated five business days after the date of its approval, and continuing until five business days after the date of approval of the next BCBSVT and TVHP Large Group Rating Program Filings. The term “communicated,” for this purpose, means a written proposal delivered to a large group account.

2. Overview and Rate Impact

2.1. Overview

This filing includes a description of the renewal formula and the development of each of the factors used in it. This formula is used for insured products, including Cost Plus. BCBSVT projects that 14,664 members (7,746 subscribers) in 68 groups will be impacted by this filing. These totals include members of both BCBSVT and TVHP, and we will refer to the combined population as BCBSVT throughout this memorandum.

We will describe in detail the formula used in the renewals. The formula has been modified from the currently approved version (BCBSVT-131424513 and BCVT-131424558). The changes, described in detail below, pertain to the rate development formula.

We will then detail the factors applicable to all insured large groups. The factors in the build-up of the projected claims cost include the trend factors, benefit relativities, manual rate, and large claims factors. In addition to the projected claims cost, we will explain the calculation of administrative charges, the net cost of reinsurance, contribution to reserve, and state and federal assessments, all of which are included in the rate development.

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Finally, we will discuss factors applicable only to specific products. Cost Plus customers purchase Individual and Aggregate Stop Loss (ISL and ASL) from BCBSVT. We also offer an Experience Refund Eligible product for which risk charges and settlement administration charges apply. Cost Plus products are not available through TVHP.

2.2. Historical Financial Results

Below is the combined medical and pharmacy experience for the prior five calendar years. This includes BCBSVT and TVHP insured large group experience. Additionally, loss & expense ratios are provided for Cost Plus groups.

Insured Large Group Experience						
Year	Incurred Claims	Administrative Charges	Earned Premium	Gain/(Loss)	Loss & Expense Ratio	Member Months
2014	\$131,255,716	\$16,985,281	\$148,268,779	\$27,782	100.0%	361,386
2015	\$139,232,792	\$19,861,232	\$153,535,019	(\$5,559,005)	103.6%	352,678
2016	\$86,034,897	\$12,804,526	\$95,541,735	(\$3,297,687)	103.5%	218,650
2017	\$86,520,109	\$10,424,245	\$92,106,277	(\$4,838,077)	105.3%	197,954
2018	\$81,343,741	\$12,510,283	\$86,960,030	(\$6,893,895)	107.9%	176,430

Cost Plus Experience		
Year	Loss & Expense Ratio	Member Months
2014	94.7%	678,796
2015	94.4%	647,247
2016	95.0%	515,583
2017	95.4%	514,809
2018	99.7%	5,045

The incurred claims, administrative expenses, and earned premium are from BCBSVT's GAAP financials. The claims include capitations, fee-for-services claims, certain assessments, and other claims expenses.

The chart below shows the expected and actual contribution to reserves from the previous five years for Insured Large Groups. The expected contribution to reserves reflects ordered reductions to CTR as well as modifications to actuarial factors that were not recommended by the independent reviewing actuary.

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Expected and Actual Contribution to Reserves			
Year	Filed	Expected	Actual
2014	2.0%	-0.1%	0.0%
2015	2.0%	-0.0%	-3.6%
2016	2.0%	0.8%	-3.5%
2017	2.0%	2.0%	-5.3%
2018	2.0%	0.8%	-7.9%

2.3. Impact of Formula and Factor Changes

To compute the impact of changes to the rating formula and the various factors in this filing on large group premium rates, we produce renewals for each of the 62 large groups we expect to enroll in 2020 (excluding six groups with inadequate experience to develop a renewal).

The first renewal uses the approved factors currently in force (BCBSVT-131424513 and BCVT-131424558) with an effective date of January 1, 2019. The rates in these renewals are used as a baseline for the comparison. Next, we produce a renewal with currently approved factors with an effective date of January 1, 2020, extrapolating the current factors where necessary. Lastly, we produce a renewal with a January 1, 2020 effective date with the factors and formulas detailed in this filing. This methodology of calculating the impact of changes to formula and factors differs from previous filings. We believe this methodology better highlights the impact of formula and factor changes by separating the impact of an additional year of trend and changes to federal programs from the impact of substantive changes to the rate formula and factors.

A comparison of the 2020 renewals, first produced using the currently approved factors and then produced using the factors and formulas detailed in this filing, shows an average 5.3 percent rate increase. This is the impact of formula and factor changes in this filing. The rate increase can be attributed to the following causes: unfavorable experience driving an increase in manual claims, higher medical trend, and an increase in administrative charges.

The 5.3 percent increase due to formula and factor changes translates to a \$31.86 PMPM increase. The increases are broken down as follows:

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Impact of Formula and Factor Change - 2020 Renewals				
Component	Q3 2018 Filing PMPM	Q3 2019 Filing PMPM	PMPM Change	Impact on Premium Increase
Projected Paid Claims ^(a)	\$510.14	\$531.75	\$21.61	3.6%
Administrative Charges	\$42.53	\$48.14	\$5.61	0.9%
Contribution to Reserve	\$5.82	\$9.15	\$3.34	0.6%
Federal Programs	\$12.61	\$13.30	\$0.68	0.1%
Additional Items ^(b)	\$24.78	\$25.40	\$0.62	0.1%
Total	\$595.89	\$627.75	\$31.86	5.3%

(a) Projected paid claims includes manual claims, experience claims, and projected rebates.

(b) Additional Items include net cost of reinsurance, Cost Plus stop loss, broker commissions, state mandates and assessments, fees paid to outside vendors, the GMCB billback, and the Refund-Eligible margin & risk charge.

Impact of Annual Changes on Currently Approved Factors

The second component, a comparison of the 2019 and 2020 renewals showing the annual change of the currently approved factors across all 62 large groups shows an average 9.0 percent rate increase. The rate increase can be attributed to two main causes: an additional year of health care cost trend and the federal insurer fee, which returns in 2020 following a one-year suspension. The 9.0 percent increase to bring the currently approved factors to 2020 translates to a \$49.33 PMPM increase. The increases are broken down as follows

Impact of 2019 - 2020 Changes on Current Filing				
Component	2019 PMPM	2020 PMPM	PMPM Change	Impact on Premium Increase
Projected Paid Claims ^(a)	\$476.72	\$510.14	\$33.42	6.1%
Administrative Charges	\$40.84	\$42.53	\$1.69	0.3%
Contribution to Reserve	\$5.33	\$5.82	\$0.48	0.1%
Federal Programs	\$0.00	\$12.61	\$12.61	2.3%
Additional Items ^(b)	\$23.66	\$24.78	\$1.12	0.2%
Total	\$546.56	\$595.89	\$49.33	9.0%

(a) Projected paid claims includes manual claims, experience claims, and projected rebates.

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(b) Additional Items include net cost of reinsurance, Cost Plus stop loss, broker commissions, state mandates and assessments, fees paid to outside vendors, the GMCB billback, and the Refund-Eligible margin & risk charge.

3. Formula Description

Rates for active and Medicare Primary subscribers are developed separately based on their own experience. Both the formula and factors described in this filing are the same for both populations except where noted. Medicare Primary rate tiers are not offered on TVHP.

Benefit-Adjusted Projected Single Claims Rate

A sample calculation of the benefit-adjusted single claims rate can be found as Exhibit 1A. Page 1 of the exhibit applies to active members and page 2 applies to Medicare Primary members. For each case, we start the rating with a twelve-month experience period with at least two months of runout¹. We determine a pooling point based on the size of the case at the end of the runout period and split the experience period claims (line A) into amounts above (line B) and below (referred to as capped claims, line C) the pooling point.

We apply completion factors (line D) developed from the monthly financial reporting process (best estimates before margin) to capped claims to produce completed capped claims (line E). We use the formula and factors described in Milliman's 2017 *Health Cost Guidelines - Reinsurance* to calculate expected claims above the pooling limit (line F). The expected claims above the pooling limit are added to the completed capped claims to produce large-claim-adjusted experience period claims. Medicare Primary members generally do not have claims near the group's pooling point, so their claims are not pooled. We then multiply the large-claim-adjusted experience claims by an adjustment factor (line G) to reflect structural changes in the benefit plan from the experience period to the rating period. This is to adjust for such things as mandated benefit changes, contractual provision changes, etc., that, in the judgment of the underwriter, are necessary to make the experience appropriate for the estimation of the expected claims in the rating period. We divide the result (line H) by the number of member months during the experience period (line I) to produce adjusted experience period claims per member per month (line J).

The adjusted experience period claims per member per month (PMPM) is then divided by a seasonally adjusted benefit relativity value to neutralize any effect of seasonality and benefits on the paid claims. To determine this factor, we first determine a benefit relativity factor for each benefit plan (using the factors described in section 5) and

¹ For first year renewals, where twelve months of experience is not available, we generally use claims incurred in nine months with no runout.

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contract tier type (single, 2-person, family, etc.). Based on the seasonal patterns observed as part of the reserving process for each calendar month, we determine seasonal factors for CDHPs and for non-CDHPs and normalize them so that they total to 12. We combine these factors to calculate seasonal benefit relativity factors for each combination of benefit plan, contract tier type, and month. We apply these factors to the number of contracts for each benefit plan, contract tier type, and month in the experience period. We total the results and divide the resultant sum by the number of member months in the experience period. The seasonal factors are applied regardless of the length of experience period, but if there is a 12-month experience period and there are no changes in benefits or enrollment, the normalization of the seasonality factors would cause the seasonal adjustment to be 1.000. This produces the average experience period seasonally adjusted benefit relativity factor (line K).

We adjust for any change in the demographics of the group between the experience period and the rating period by calculating the average demographic factor for each period and applying the ratio of projection to experience (line L). The adjusted experience period claims PMPM (line J) is multiplied by the demographic normalization factor and divided by the average experience period seasonally adjusted benefit relativity factor (line K) to produce the benefit-adjusted experience period single claims rate (line M), which is the expected cost for a single contract in the experience, neutral of benefit and seasonality. We then multiply this by a trend factor (line P, as calculated in section 4) to project the claims from the experience period to the rating period. We also multiply by a factor (line Q) to account for differences in contracted pharmacy discounts between the experience period and the projection period.

The resulting projected single contract rate (line R) is then blended, using the credibility formula described below, with the adjusted manual rate (line S, as described in section 6.1).

The credibility factor (line T) is calculated as follows:

$$Credibility = \sqrt{\frac{Member\ Months}{Upper\ Bound}}$$

The upper bound is determined based on pooling point as follows:

Pooling Point	Member Months
Medicare Primary	8,325
\$70,000	14,002
\$90,000	16,127
\$110,000	17,923

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If member months are greater than the upper bound, the credibility factor will be 1. Refund-Eligible and Cost Plus products are pooled at their attachment point. A list of upper bound member months by pooling point is provided in Exhibit 6C.

To blend the projected single contract rate with the adjusted manual rate, we use the following equation:

$$\text{Benefit-Adjusted Projected Single Claims Rate} = \text{Projected Single Contract Rate} \times (\text{Credibility}) + \text{Adjusted Manual Rate} \times (1 - \text{Credibility})$$

Multiple Experience Periods

BCBSVT will use multiple experience periods (when available) to develop the benefit-adjusted projected single claims rate. Following the methodology described above, an experience rate is calculated for the first and second year preceding the experience period. The credibility formula is then applied recursively to the residual portion of the rate. The manual rate is adjusted, as described in section 6.1, when more than one year of experience is used. A demonstration of the application of the credibility formula for a group with 50 percent credibility in each experience year is provided below.

Experience Period	Proportion of Rate
YE 201906	50.0%
YE 201806	25.0%
YE 201706	12.5%
Manual Rate	12.5%

See Exhibit 1B for a detailed sample calculation of the benefit-adjusted projected single claims rate using three years of experience.

Required premium by Plan, Tier Type

A sample calculation of premium can be found as Exhibit 1C. For each plan and contract tier type anticipated in the rating period, we calculate projected claims (line B1) as the product of the benefit-adjusted projected single claims rate (S) and the benefit relativity factor (as described in section 5) for the plan and contract tier (line A).

The members per contract tier during the last month of the runout period is the basis for the projected members per tier in the rating period. The underwriter will adjust

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this ratio if, in their opinion, the result is not representative of the expected values in the rating period.²

The calculation for the total required premium by (plan, tier) is as follows:

{ Projected Claims by Plan and Tier (line B1)	+
Expected Net Cost of Reinsurance (line B2, as described in section 6.4)	-
Projected Pharmacy Rebates (line B3, as described in section 6.5)	+
Administrative Charges (line D, as described in section 6.3)	+
State Mandates and Federal Assessments (line C1 to C4, as described in sections 6.7 and 6.8)	/
{ 1 - Contribution to Reserve (line F, as described in section 6.6) - Broker Commissions (line E) - Federal Insurer Fee (line G, as described in section 6.8)}	=
Required Premium by Plan and Tier (line H)	

Underwriting Judgment Adjustments

If, in the underwriter’s professional judgment, the specific properties of the case being rated are such that the standard formula would not produce appropriate rates for the rating period, the underwriter will make such modifications as needed to produce appropriate rates. The underwriter will document in the case file the reason(s) for the adjustment(s) and the method of determining the appropriate adjustment(s).

Management Discretionary Adjustments

For marketing or other reasons, management may decide to modify the rates on a specific case or block of cases. The underwriter will document in the case file the adjustment(s) made, along with a description of the nature of the adjustment(s).

4. Trend Factors

Similar to previous Large Group Rating Program Filings, we include small groups enrolled in Qualified Health Plans with BCBSVT in the base of members used in the trend development. The breadth of plan offerings and group size of the small group market is more analogous to the large group market than the benefits and experience of large ASO groups. Including small groups creates greater consistency and credibility within the trend factor development.

² E.g., the number of contracts in a particular tier may be small (or even 0). In such instances, the underwriter should use appropriate values based on total block of business or other appropriate source.

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4.1. Medical Trend Development

The source of the data is BCBSVT's data warehouse, except where noted below. To ensure accuracy of claims information, the data used has been reconciled against internal reserving, enrollment, and other financial reports. The data includes claims from BCBSVT Cost Plus groups, BCBSVT ASO Groups of under 5,000 members, BCBSVT insured large groups, BCBSVT insured small groups, TVHP insured small groups, and TVHP insured large groups. CDHP and non-CDHP claims were combined. Large ASO groups and ASO groups with special pricing arrangements were excluded. Claims from Medicare Primary members were excluded. Medicare Primary trend is discussed in section 4.5.

BCBSVT and TVHP cover substantially similar populations under similar benefit packages. Combining these homogeneous populations creates greater consistency and credibility within the trend factor development.

Using the historical contracted reimbursement schedules, we calculated network factors that represent the different contracts and modify the claims to reflect a single contract. By making these adjustments we can observe the historical cost increases using all large group claims information.

Medical trend is composed of three pieces: cost, utilization, and intensity. In our analysis, we combined utilization and intensity within the utilization metric and analyzed the unit cost separately. Historical experience was normalized for contract changes and then analyzed to derive a utilization trend in the absence of unit cost changes. Future unit cost trends were developed on a discrete basis using the most recent round of contract negotiations as a starting point. The overall trend is the product of these two components.

4.1.1. Unit Cost

Unit cost trends were largely derived from observations of recent contracting and provider budgetary changes. During the year ended June 2018, roughly 52 percent of total claims dollars were provided by Vermont facilities and providers directly affected by the hospital budget review process of the Green Mountain Care Board (GMCB). We started with the assumption that the GMCB would approve hospital budgets for October 1, 2019 and October 1, 2020 that support identical commercial increases as those approved for October 1, 2018.

Similarly, we assumed for other providers within the BCBSVT service area that overall 2019 and 2020 budget increases would be identical to those implemented during calendar year 2018. The provider contracting and actuarial departments worked together to assess the impact these increases would have on contracts for BCBSVT Managed Care, BCBSVT Non-Managed Care, and TVHP Managed Care contracts. For marketing reasons, provider contracting has been negotiating different unit cost

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increases for each of the three contracts. To reflect this, we calculated three different cost trends, one for each contract. Finally, unit cost increases for providers outside the BCBSVT service area were derived from the Fall 2018 Blue Trend Survey, which is a proprietary and confidential dissemination of the BlueCross BlueShield Association.

Claims were normalized to the June 2018 contract at each unique provider by applying a factor equal to the product of the impact of each contracting change from the experience month through June 2018. The derived trend for other claims was assumed to increase monthly on a continuous basis. Please see Exhibit 2A for an illustration of this approach.

Contract normalized claims were trended forward using expected increases. Unit cost trend was calculated by dividing claims year-ending December 2020 by claims year-ended June 2018 and converting to an annual factor.

The results of the analysis are summarized in the below chart:

Medical Unit Cost Trend			
	BCBSVT Managed Care	BCBSVT Non- Managed Care	TVHP Managed Care
Vermont facilities and providers impacted by GMCB's Hospital Budget Review	2.6%	4.8%	3.0%
Other facilities and providers	3.0%	3.0%	3.0%
Total	2.8%	3.9%	3.0%

4.1.2. Utilization & Intensity

Historical utilization trend patterns were examined by first normalizing claims for unit cost increases. Contract changes for the entirety of the experience period were measured explicitly for each facility within our service area as well as the three largest physician groups. Similar to the previous Large Group Rating Program Filings, we removed all claims from members who exceeded \$500,000 in paid medical claims in 12-month periods preceding June 30, 2018. As the utilization component includes intensity, high cost claimants can unduly impact the year-over-year, time series, and regression calculations.

Increases were measured for fee schedules and other chargemasters by applying each schedule to a market basket of services. The market basket was defined by using Current Procedural Terminology (CPT) codes and CPT modifier combinations that were present in each of the effective periods the schedules covered. Using the same experience period data used throughout the trend analysis, total allowed costs for the selected CPT and CPT modifier combinations were compared under each schedule to estimate the percentage increase. For contracts under Diagnosis Related Group (DRG) arrangements, we compared the charge for the 1.000 DRG service for each period.

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Finally, for services under a discount of charge arrangement, we used the contracted chargemaster increase provided by our provider contracting department.

This accounted for 78 percent of allowed claims dollars during the experience period. Costs for other claims were primarily for out-of-area services. Contracting changes for these claims were derived from the Fall 2018 Blue Trend Survey, which is a proprietary and confidential dissemination of the BlueCross BlueShield Association.

Exhibit 2B, Page 1 shows the resulting array of allowed PMPM claims costs, before and after normalization for contract changes. We performed regressions and time series on monthly PMPM costs. We also calculated a year-over-year rolling-12 PMPM utilization trend of 3.9 percent for the year ended June 2018. The regression and time series calculations are provided in Exhibit 2B, Pages 2 to 11. Certain time series methods, such as those assuming no trend or those for which there is not sufficient historical data³, are not included, as these are inappropriate for use in trend development and/or for the data available.

We select a utilization trend of 3.5 percent. Though utilization trend between facility and professional services are interdependent, the historically high trend warrants an in-depth examination of trends that is best performed categorically. We believe a 2.5 utilization trend selection on facility claims and a 5.5 percent utilization trend selection on professional claims represent reasonable and appropriate trends. The total trend produced from these components is in line with the trends from measures that combine all medical services, and informs our selection of an overall utilization trend of 3.5 percent.

Certain measures suggest a much higher utilization trend, which is primarily driven from abnormally high professional utilization and mix-of-services trends. Professional visits increased 3.4 percent year-over-year, which, in conjunction with an increase in services per visit and an increase in the cost of the mix of services, underlies the atypically high year-over-year professional utilization trend of 6.3 percent. Professional utilization trend is being driven by significant increases across the spectrum of professional services, including increases in primary care services, mental health and substance abuse services, labs and radiology services, and labs and radiology mix of services. Our selection of 5.5 percent is lower than the majority of trends provided in the regression and time series analysis for professional claims. We believe certain BCBSVT programs will be effective at mitigating high professional trends, and implicitly account for these programs through a selection of a lower trend to reflect the anticipated success of appropriate care management strategies.

Year-over-year inpatient days per 1,000 members remained stable. Historically, inpatient days per 1,000 members had decreased as services moved away from an

³ The seasonal additive, seasonal multiplicative, single moving average, and single exponential smoothing methods are not used since they assume no trend. The double moving average method is not used due to insufficient historical data.

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inpatient setting, which helped to offset increases in utilization and intensity trend in other areas. We believe inpatient utilization will continue to remain stable in the future and will no longer offset other components of utilization trend. Inpatient cost per admit normalized for contract changes increased 6.0%. This reflects an increasing cost in the mix of services, which is another major driver of total utilization trend. Components of hospital services, such as drugs and injectables administered in a facility, continue to be a main component of the increasing cost of the inpatient and outpatient mix of services. We anticipate the cost and utilization of drugs will continue to drive high inpatient intensity trends.

The components of increasing utilization trend have been corroborated by our Chief Medical Officer. Increasing utilization and intensity is also corroborated by hospital actual-to-budget narratives. The impact of low cost trend changes are largely offset by increasing utilization and intensity, which is acknowledged as a main driver of hospital budget overages.

4.1.3. Induced Utilization

We investigated the impact of benefit changes throughout the experience period on utilization. Previously, large groups engaged in a benefit buy-down strategy as a means of limiting rate increases. This may have manifested itself in a lower actuarial value over time and a dampening effect on trend due to decreases in induced utilization. A development of the impact of induced utilization is shown in the table below:

Year Ended	Paid-to-Allowed Ratio	Induced Utilization	Percent Change
July 2015	74.7%	1.0509	
July 2016	74.1%	1.0483	-0.2%
July 2017	74.2%	1.0483	0.0%
July 2018	73.8%	1.0468	-0.1%

Given the impact of induced utilization has been minimal over the past few years, we do not make an adjustment to utilization trend.

The concept of induced utilization is discussed further in section 5.1. Exhibit 2C shows the development of the induced utilization factor.

4.1.4. Total Medical Trend

The total medical trend factors are the product of the utilization trend and the unit cost trend factors.

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Component	BCBSVT Managed Care	BCBSVT Non-Managed Care	TVHP Managed Care
Cost Trend	2.8%	3.9%	3.0%
Utilization Trend	3.5%	3.5%	3.5%
Total Medical Trend	6.4%	7.5%	6.5%

To calculate the overall medical total trend to be applied in the renewal formula, we trended the manual rate (see section 6.1) experience medical claims based on the network to calendar year 2020. We then divided the projected claims cost by the experience claims cost to calculate the overall medical trend.

Total Allowed Medical Trend				
Network	BCBSVT Managed Care	BCBSVT Non-Managed Care	TVHP Managed Care	Total
Experience Allowed Claims (Medical Only)	\$12,104,424	\$45,664,410	\$16,354,655	\$74,123,490
Trend Factors for 27 months	1.148929	1.177456	1.153415	
Trended Claims	\$13,907,119	\$53,767,817	\$18,863,702	\$86,538,638
Annual Trend				7.1%

4.2. Pharmacy Trend Development

The source of the data is BCBSVT's data warehouse, except where noted below. To ensure accuracy of claims information, the data used has been reconciled against internal reserving, enrollment and other financial reports. The data includes claims from BCBSVT Cost Plus groups, BCBSVT ASO groups, BCBSVT insured large groups, BCBSVT insured small groups, TVHP insured small groups, and TVHP insured large groups. Combining these homogeneous populations creates greater consistency and credibility within the trend factor development. Claims from Medicare Primary members were excluded. Compound drugs claims were excluded. The data from ASO groups whose pharmacy benefits are not administered through the BCBSVT contract with ESI were excluded. Large ASO groups who offer benefits atypical to the large group marketplace were excluded. We used claims incurred from July 1, 2014 to June 30, 2018, paid through September 30, 2018. Completion factors were applied to estimate the ultimate incurred claims for each period shown in the exhibits.

ESI has been the pharmacy benefits manager for BCBSVT and TVHP since July 2009. The initial ESI contract was for a period of three years; new contracts became effective July 2012, July 2015, and January 2018. Similar to previous Large Group Rating Program Filings, we base our cost trend calculation on Average Wholesale Price (AWP) and apply a factor to the rating formula to account for the contracting changes. We analyzed the components of trend (cost and utilization) separately for brand and generic drugs. We estimated the impact of brand drugs going generic based on the brand drugs that are scheduled to lose patent in the projection period. Specialty drugs are very high cost

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drugs with low utilization. Because of their relative infrequency, it is more appropriate to look at the overall PMPM trends for these drugs rather than separate cost and utilization components. The overall pharmacy trend is calculated by combining the separate projections.

Non-Specialty Drugs

Exhibit 2D provides the monthly and the 12-month rolling data, along with the corresponding year-over-year and exponential regression trends, for non-specialty drugs. These are shown separately for the generic cost, brand cost, and overall non-specialty utilization categories. The number of days supply, rather than the number of scripts, was used to normalize for changes in the days supply per script (e.g. increased use of 90-day fills). Because there are several popular brand drugs that have become generic during the experience period, or will become generic during the projection period, we combined the data for generic and brand drugs for the purpose of analyzing utilization patterns. The regressions use 24 data points on the monthly data in order to best capture an adequate amount of the most recent history of drug costs. We select annual trends of 3.5 percent for generic cost, 5.9 percent for brand cost, and 0.0 percent for total non-specialty utilization.

Instead of explicitly projecting a generic dispensing rate, we separated the drugs into six categories:

- Generics
- Brands going Generic: brands that are expected to become available in generic form in the projection period, based on a list from our pharmacy benefit manager
- Vaccines
- Over the Counter (OTC)
- Compounds
- All other Brands

As shown in Exhibit 2F, each category days supply is trended forward at the same rate of 0.0 percent. Exhibit 2F summarizes the trends for non-specialty drugs and calculates the total non-specialty allowed drug trend as 1.5 percent.

Specialty Drugs

The introduction of certain new specialty drugs requires an adjustment to the specialty drug trend calculation. High-cost or high-utilization drugs have entered the market recently, such as Orkambi, a treatment for cystic fibrosis with an annual cost of almost \$250,000, and PCSK9 inhibitors like Repatha, used to treat high cholesterol in patients with the genetic disease familial hypercholesterolemia (FH) who have failed one statin and patients who have suffered a heart attack and failed two different statins. To accurately capture the effect of these new drugs on specialty trend, we removed their claims from the experience to calculate a trend rate to apply to these non-excluded claims. We trended those claims forward at the calculated rate for 30 months, then added back in our projections of claims for the new treatments (Orkambi, Ocrevus, and

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PCSK9 inhibitors). We used the total restated projected claims to calculate a restated specialty trend. Any cost estimates for excluded drugs developed using demographic estimates are calculated using the same membership and/or claims underlying pharmacy trend development.

Exhibit 2E, Page 1 shows the calculation of specialty trend both for all specialty drugs and for specialty drugs excluding the new treatments described above. For our regressions, we chose 24 points of 12-month rolling data to capture the most recent history of drug costs. A rolling 12-months regression is more appropriate for specialty drugs because of the low-frequency, high-cost nature of these drugs. The total specialty trend is 18.5 percent. Removing the large cost increases associated with the new treatments results in an 18.4 percent trend for the remaining specialty drugs.

PCSK9 inhibitors such as Repatha are used to treat high cholesterol. BCBSVT's current policy is to approve PCSK9 inhibitors for the treatment of familial hypercholesterolemia (FH), a genetic disease characterized by very high levels of cholesterol in the blood, after failure of one high-dose statin for 60 days. Current incidence studies suggest that 200 persons per 100,000 lives are diagnosed with FH. Another indication for these drugs is for patients who have had a heart attack and then failed two different high-dose statins for 60 days. Based on current membership, we project 19 members will use a PCSK9 inhibitor in 2020. With an average annual cost from the trend experience of about \$14,176, the projected total is \$269,351.

Orkambi is a drug used in the treatment of cystic fibrosis. In particular, it is used to treat a specific mutation of the disease that is found in roughly 50 percent of cystic fibrosis patients. Orkambi is prescribed to patients age 12 and older. In previous filings, we assumed that 50 percent of our members diagnosed with cystic fibrosis who are at least age 12 will take Orkambi. Three members in the experience period had claims for Orkambi. Given the length of time the drug has been available, we expect we will see no change in utilization and add in \$388,607, which is the annual experience cost of the claimants.

Ocrevus is a drug used in the treatment of multiple sclerosis (MS). We estimate 15 percent of our members currently taking medication for MS would move to Ocrevus. We therefore excluded 15 percent of the average annual cost of MS medications from specialty claims to reflect this shift, and added in the estimated cost of Ocrevus. No adjustment was made to the experience used to develop the non-exclusion specialty trend, since only a proportion of claims are removed.

To calculate the restated specialty trend, we started with the pharmacy claims from the year ended June 30, 2018 experience period and removed the claims for PCSK9 inhibitors, Orkambi, and MS drugs to be replaced by Ocrevus. We then trended the remaining claims at an 18.4 percent rate for 30 months and added the incremental cost of PCSK9 inhibitors, Orkambi, and Ocrevus for a total restated projected claims. Using this method, the restated specialty drug trend is 18.0 percent. See Exhibit 2E, Page 2

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for details. The impact of excluding certain specialty drugs has had an increasingly small impact on specialty trend. We will continue to monitor the impact of the introduction of new specialty drugs on trend, but will consider removing this adjustment in subsequent filings if the impact remains inconsequential.

Total Pharmacy Trend

Using the PMPM claims as weights between non-specialty and specialty claims for the 12 months ended June 2018, we applied the annual trends for 30 months and calculated the following:

Allowed Pharmacy Trend	
Category	Annual Trend
Generic	3.5%
Brand	5.9%
Brands Going Generic	-43.4%
Specialty	18.0%
Total	9.1%

Please note that contract changes are applied separately from trend in order to accurately capture the timing for each renewal.

Contract Adjustment Factors

For drug claims in the year ended June 30, 2018, we took the AWP of the claims and applied the contracted discounts and dispensing fees, if applicable, for each potential renewal experience period and rating period to calculate adjusted allowed charges. The contract adjustment factor for each experience and rating period combination is the ratio of the adjusted allowed charges.

Applying the discount adjustment from the experience used to develop trend to a 12-month rating period, we calculated a 7.8 percent effective annual trend.

Exhibits 3J contains the contract adjustment factors that will be applied to the drug claims in a group's renewal. These factors assume that both the experience period and rating period are 12 months. For cases where this is not true, or for periods not provided in the exhibit, we will calculate an appropriate factor using an analogous methodology.

4.3. Overall Total Trend

Using the year ended September 2018 claims experience for the groups included in the manual rate (see section 6.1), the overall allowed trend is

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Category	Allowed PMPM	Allowed Trend
Medical	\$ 446.12	7.1%
Pharmacy	\$ 91.71	7.8%
Total	\$ 537.84	7.2% ⁴

While we have included no implicit or explicit margin in our trend selections, we recognize that an environmental change may create a significant shift in either direction. As we have suggested in past years, we would submit an interim trend filing should information become available that meaningfully differs from the underpinnings of the trend analysis in this filing.

4.4. Leveraged Trends

The above trends are based on allowed charges and do not account for the leveraging effect of deductibles and copays. In prior filings, we utilized our benefit relativity models (see section 5.1 for a description of the methodology) to calculate the impact of leveraging on each benefit by calculating the paid trend as ratio of the paid PMPMs with and without the allowed trend (as described above) and the leverage factor as the ratio of the paid trend factor to the allowed trend factor.

For the filing, we measured the correlation between the leverage factors calculated using the method described above and the actuarial values (AVs) of the benefits and fit a curve to the results. For medical leverage, we fit a line to all medical products, including the medical portion of integrated CDHP benefits. For drug leverage, we found that using different lines for different types of drug benefits produced the best fits. We produced three lines: one for drug cards, one for CDHPs with wellness drugs covered at 100%, and one for all other CDHPs. The formulas for leverage are below:

Leverage Formulas	
Medical	$-0.0385 \times (AV) + 1.0389$
Drug Card	$-0.0680 \times (AV) + 1.0691$
Drug - CDHP 100% Wellness	$-0.0559 \times (AV) + 1.0564$
Drug - All Other CDHP	$-0.0723 \times (AV) + 1.0722$

See Exhibits 3H and 3I for examples of leverage factors.

Applying the leverage factors for benefits present in the year ended September 2018 for the groups included in the manual rate, we calculate the following paid trends:

⁴ The allowed trend without the pharmacy contract adjustment is 7.5%.

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Category	Paid PMPM	Paid Trend
Medical	\$ 354.98	8.0%
Pharmacy	\$ 80.92	8.5%
Total	\$ 435.89	8.1% ⁵

4.5. Medicare Secondary Trends

Medicare Secondary plans cover two categories of services: Medicare-covered services which are subject to member cost share (deductible/coinsurance) and services which are not covered by Medicare. Services subject to Medicare cost sharing were not adjusted for network, as the allowed charges are determined by Medicare, whereas the services not covered by Medicare were adjusted using the contract factors described above to bring all charges to a single network.

For Medicare claims, cost trends were developed for the different types of service using trends from CMS⁶. Increases for 2020 were assumed to be the same as the 2019 increases. We assumed a 0.0 percent utilization trend for Medicare claims.

Category	Allowed Trend
Inpatient	2.8%
Outpatient	2.0%
Professional	0.2%

The trends used for services not covered by Medicare are the same as the trends developed for use with active benefits. We use the same pharmacy trends for Medicare Secondary plans as we use for active plans.

5. Benefit Factors

To determine standardized claims rate relationships, also called relativities, BCBSVT has created models that simulate the impact of member benefits for all types of plans. The models determine the allowed charges for the 12 months of claims included in the study and “re-adjudicate” the claims, thereby simulating the impact of member cost sharing for a given benefit plan.

Claims data is from BCBSVT’s data warehouse. To ensure accuracy, the claims data used has been reconciled against internal reserving, enrollment and other financial reports. The starting point of the analysis is allowed charges as determined by the BCBSVT claims adjudication system. The claims data includes benefit codes that enable us to identify the services and benefit structures (copays, deductibles, and coinsurance) for each claim.

⁵ The paid trend without the pharmacy contract adjustment is 8.4%.

⁶ <https://www.cms.gov/Medicare/Health-Plans/MedicareAdvtgSpecRateStats/Downloads/FFS-Trends-2017-2019.pdf>

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Incurred allowed charges from July 2017 to June 2018, paid through September 2018, were used in the models. The allowed charges were trended 30 months to the 12-month period that begins January 1, 2020. The majority of the business that will be renewed using these relativity factors has a January 1 renewal date; the rating formula adjusts the trend for non-January renewals (see section 6.1).

The data includes claims from BCBSVT Cost Plus groups, BCBSVT ASO groups, BCBSVT insured large groups, BCBSVT insured small groups, and TVHP insured large groups. Combining these homogeneous populations creates greater consistency and credibility within the relativity factor development. Claims from certain large ASO groups were excluded, as the rich benefits offered by those groups were not in line with the leaner offerings of most insured large groups. CDHP and non-CDHP claims were combined. We also excluded groups that have special benefits. This predominantly refers to groups that have specific reimbursement with particular providers outside of BCBSVT's contracts and/or claims processing function. We excluded claims from groups that do not have pharmacy coverage through BCBSVT. We created separate models for active members and Medicare Primary members.

For each benefit plan, the models produce the simulated PMPM values of the benefits. The PMPM for each plan is then divided by the average trended paid claims rate from the BRV experience period to produce its benefit relativity (BRV). Relativities are included for medical only plans, Rx only plans, and integrated CDHP plans. In addition, relativities are produced for both active employees and Medicare Primary employees.

5.1. Models for Active Employees

Benefit Relativity Model: Medical

The trends used were the total medical trend, by type of service. Cost trends for each type of service were calculated by the discrete unit cost trend method above, while separate utilization trends were developed for facility and professional services (see section 4.1.2).

Using the contracted reimbursement schedules, we calculated network factors that represent the different network contracts. Using these factors, we can include all claims in each of the three networks by adjusting each claim to the basis of a single network. This enables us to combine all the experience for each plan design.

The claims were categorized according to how benefits are paid, and one record was generated for each member, date of service, and type of service. Each record was then assigned a cost share (deductible/coinsurance, copay, covered in full) for each plan modeled. For all products, claims for preventive mandated benefits were assigned a "covered in full" cost share, independently of the product that is being modeled.

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The model tests one benefit design at a time. It determines the member portion of the allowed charges, and from this, a total simulated paid PMPM for each benefit design. The impact of copay, deductible, coinsurance, out-of-pocket maximum, and preventive mandated benefits are all considered. If the average allowed cost of a category is less than the copay being examined, it is assumed that the member paid the full cost of the service.

BCBSVT offers products on several different networks based on the three provider contracts (BCBSVT Managed Care, BCBSVT Non-Managed Care, and TVHP Managed Care). Depending on the network, there may be more than one tier of coverage (generally referred to as in-network and out-of-network) and different networks may have different providers in each tier. Below is a chart showing which providers are in which tiers on many of BCBSVT's common networks. Providers who accept the indicated provider contract are considered to be in-network. For providers in the BlueCard® network and non-participating providers, 'In' indicates coverage for these providers on the in-network tier of coverage, and 'Out' indicates coverage for these providers on the out-of-network tier of coverage.

Network Name	Provider Contract	BlueCard Providers	Non-Participating Providers
HMO	TVHP Managed Care	N/A	N/A
POS	TVHP Managed Care	Out	Out
VHP Select	BCBSVT Managed Care	N/A	N/A
VHP	BCBSVT Managed Care	Out	Out
EPO PCP	BCBSVT Managed Care	In	N/A
VHP Open Access	BCBSVT Managed Care	In	Out
EPO	BCBSVT Non-Managed Care	In	N/A
PPO	BCBSVT Non-Managed Care	In	Out
Indemnity	BCBSVT Non-Managed Care	In	In

If BCBSVT were to quote a product not on one of the networks listed above, or one featuring different provider networks for selected services, we would modify the base data in the BRV models to correspond to the desired changes (for example, excluding certain providers or modifying allowed amounts) before simulating the benefit impact.

We use BRVs in two places in the rating formula described in section 3. The average experience period seasonally adjusted benefit relativity factor (line K in Exhibit 1A) is calculated using BRVs for the benefits in the experience period, while the projected claims for the rating period (line B1 in Exhibit 1C) uses BRVs for the benefits in the rating period.

The relativities for active employees for some medical products currently in our book of business are displayed on Exhibits 3A and 3B.

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Benefit Induced Utilization: Medical

Continuing a process started in the previous filing, we intend to move toward using factors for the impact of induced utilization (IU) developed by the federal Department of Health and Human Services (HHS) for use with Qualified Health Plans, to which we found the curve of best fit $IU = AV^2 - AV + 1.24$, where AV is the actuarial value of the benefit plan. The HHS IU factors are based on combined medical/pharmacy AV, but as we develop BRVs separately for medical and pharmacy plans, we will apply the formula to medical-only AVs. We normalized the curve such that the average AV underlying the base BRV experience period returns a utilization adjustment of 1.00. In other words, if a simulated benefit has an AV less than the average AV, then utilization will be reduced (i.e. factor < 1.00). If a simulated benefit has an AV greater than the average AV, then the benefit will have induced utilization (i.e. factor > 1.00).

The curve developed from the HHS factors is less steep than the curve we traditionally develop using our own data. For benefits with lower AVs, this results in an increase in the IU factor, while benefits with high AVs see a decrease in the IU factor. We believe using this curve for induced utilization will improve the rating accuracy of all plans. To ease the impact of this switch, we will transition to the HHS formula over a number of years. In this filing, we blend the HHS IU factor with an IU factor developed from our own data. The HHS factor receives a weight of 0.75 and the BCBSVT factor receives a weight of 0.25.

We performed an independent analysis to measure the correlation between the benefit design and the overall health care spending. The correlation uses the actuarial value as the independent variable and the total allowed charges (capped at \$30,000 per member per year) as the dependent variable. A 2nd order polynomial best fits the data. The polynomial was normalized such that the average actuarial value underlying the base BRV experience returns a utilization adjustment of 1.00. The resulting formula is *Medical Utilization* : $3.2737 \times (AV)^2 - 3.6701 \times (AV) + 1.8316$. The BCBSVT IU factor from this curve is blended with the IU factor from the HHS curve to calculate the IU factor used in the BRV model, with a minimum set at 0.74 and a maximum of 1.20.

Benefit Relativity Model: Pharmacy

The trends used were the total trend, by type of drug, as described above (section 4.2) for brand, generic, and specialty drugs.

Within the model, all pharmacy scripts, including specialty, were assigned to one of six categories: retail generic, retail preferred brand, retail non-preferred brand, mail generic, mail preferred brand, and mail non-preferred brand. We applied flags to identify several categories of drugs that are either required to be covered in full (ACA contraceptives and vaccines) or for which a group may purchase a rider to offer additional coverage (some fertility drugs) or exclusion (lifestyle drugs). We also flagged drugs for which a group may offer special cost-sharing arrangements, such as diabetic medications and wellness drugs. We assigned these flags by National Drug Codes as reported to us by ESI.

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The experience period data was adjusted to reflect the major brands that are expected to become generic during 2019 and 2020. The list was based on a report provided by ESI.

For these brands, in the first six months (the exclusivity period), we reduced the Average Wholesale Price (AWP) by 10 percent and kept the brand discount. For the months after the exclusivity period, we reduced the AWP by 10 percent and changed the discount to the generic discount. The 10 percent reduction in AWP is based upon industry standard assumptions, supported by our own analysis of AWP changes for drugs that have moved from brand to generic over the past several years.

One record was created for each member and date of service combination. One record can have more than one script category. The model tests one benefit design at a time. It determines the member portion of the allowed charges and a total simulated paid PMPM for each benefit design. The impact of the deductible, coinsurance, copays and out-of-pocket maximum (OOPM) is considered. Following the ACA, contraceptives and vaccines are excluded from the cost sharing. If the average allowed cost of a category is less than the copay being examined, it is assumed that the member pays only the full cost of the script. With Vermont Act 171, all pharmacy benefits effective January 1, 2019 or later will have an OOPM of \$1,350. It is possible that this limit will increase effective January 1, 2020, following the IRS rules for Health Savings Account and High Deductible Health Plans. The exhibits include the \$1,350 OOPM on pharmacy benefits.

The relativities for active employees for some pharmacy products currently in our book of business are displayed on Exhibit 3D.

Benefit Induced Utilization: Pharmacy

We performed an independent analysis to measure the correlation between the benefit design and the quantity of pharmacy prescriptions consumed. The pharmacy benefits are adjusted in two ways. First, the generic utilization varies with the benefit design. Claims and membership data from January 2014 through June 2018 were used to create a table to adjust the base generic utilization up or down depending on the difference in the generic and brand copays of the member's drug plan.

Second, we performed a separate analysis to adjust for the overall pharmacy benefit. A modeled actuarial value was assigned to every benefit in the experience period. The correlation uses the actuarial value as the independent variable and days supply as the dependent variable. A 2nd order polynomial best fits the data. The curve was normalized such that the actuarial value underlying the base BRV benefit returns a utilization adjustment of 1.00. The resulting formula is *Pharmacy Utilization* : $0.8389 \times (AV)^2 - 0.1048 \times (AV) + 0.4346$, with a minimum set at 0.74 and a maximum of 1.24.

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Although we use two steps to calculate the induced utilization, we are not adjusting the data twice. The adjustment for difference in generic/brand copays changes the mixture of scripts (i.e. generic dispensing rate) without adjusting the overall frequency of scripts. The richness or leanness of the plan, as measured by the actuarial value, drives an adjustment to the overall frequency of scripts without changing the mixture of scripts.

As the model includes claims from both CDHPs and drug cards, we also adjust for the type of benefit being modeled. Claims incurred on a CDHP have a lower cost per script than claims incurred on a drug card. We calculate a factor for each benefit type by taking the ratio of the cost per script for that type and the cost per script from all claims in the model. For CDHPs, the factor is 0.9301 and for drug cards the factor is 1.0554.

Benefit Relativity Model: Integrated (CDHP)

The CDHP model combines both the medical and pharmacy models described above. One record was created for each member, date of service and type of service combination. A separate medical and pharmacy actuarial value is calculated, and the appropriate utilization adjustment is made.

The relativities for active employees for some CDHP products currently in our book of business are displayed on Exhibit 3C.

5.2. Tier Factors

The BRV models calculate the average paid claims of a single member on a particular benefit design. BCBSVT and TVHP sell products with rate tiers for multiple members. These rate tiers feature family deductibles and out-of-pocket maximums either in addition to or in place of the individual limits. We refer to products that have family limits in addition to individual limits as stacked, and to products with only family limits as aggregate. For products renewing after January 1, 2016, members on aggregate plans are subject to the federal maximum allowed individual out-of-pocket, even if the aggregate out-of-pocket maximum is higher. We refer to these plans as hybrid.

To price benefits for rate tiers with multiple members, we calculated tier factors to apply to the BRV for the benefit. We used the BRV models to calculate member paid amounts for each member in the model and used every combination of members to create “families” in the following categories:

- One Adult
- Two Adults
- One Adult and One Child, ... , One Adult and Seven Children
- Two Adults and One Child, ... , Two Adults and Seven Children

For each category of family, we calculated the average plan paid amount subject to the family cost sharing. Then we combined the categories of families into rate tiers using

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the proportion of each category in the experience period membership as a weight. The ratio of plan paid amount for each rate tier to the plan paid amount for the single rate tier is the tier factor. For aggregate and hybrid factors, we grouped products together into three ranges of out-of-pocket maximums and calculated tier factors for each range. We calculated different factors for products with separate medical and drug benefits and for products with integrated benefits (CDHPs). The hybrid factors are applicable to benefits with a \$7,900 individual out-of-pocket maximum. This is the 2019 individual out-of-pocket maximum set by HHS. Upon release of the 2020 individual out-of-pocket maximum, we will calculate factors using identical data, assumptions, and methodology and adjust the groupings of out of pocket maximums if necessary. The tier factors calculated for each range and type of benefit are shown in Exhibit 3K.

Separate factors are provided for stacked plans with family multipliers of two, two-and-a-half, and three for deductibles and out-of-pocket maximums. The aggregate and hybrid factors assume a family multiplier of two. If a group requests a benefit with a non-standard multiplier, out-of-pocket maximum, tier structure, or individual out-of-pocket maximum (for a hybrid plan) that is not in the exhibit, identical data, assumptions and methodology as described above will be used to calculate appropriate tier factors for the requested benefit.

5.3. Models For Age 65+ Medicare Secondary Plans

Benefit Relativity Model: Medical

Medicare Primary rate tiers are only available on the BCBSVT Non-Managed Care network. To develop benefit relativity values for Medicare Secondary plans, we use the same method as we do for the active factors. For the claims base, we used allowed charges incurred between July 2017 and June 2018, paid through September 2018, for members whose primary insurance is Medicare. Given the scarcity of Medicare Primary members in the BRV experience (fewer than 1,000 member months), we also included Medicare Primary members from groups who were excluded from the development of the active BRVs (large ASO groups).

Medicare Secondary plans cover two categories of services: Medicare-covered services which are subject to member cost share (deductible/coinsurance) and services which are not covered by Medicare. Services subject to Medicare cost sharing were not adjusted for network, as the allowed charges are determined by Medicare, whereas the services not covered by Medicare were adjusted using the contract factors described above to bring all charges to a single network.

The allowed charges were trended to the 12-month period that begins January 1, 2020. The trends used were the total medical trend, by type of service as described in section 4.5.

As with the active benefits, the model simulates the effects of a benefit design on the trended allowed charges and calculates a simulated paid PMPM. This paid PMPM is

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divided by the Medicare Primary manual rate (without the adjustment for changes to the pharmacy contract) to produce the benefit relativity value. Unlike the active benefits, there is no adjustment for induced utilization due to the richness of the benefit. As Medicare is the primary insurance for these plans and Medicare-covered claims make up 86 percent of the trended allowed charges, we do not believe that the richness of the secondary insurance will have any influence on utilization.

The relativities for some Medicare Secondary medical products currently in our book of business are displayed on Exhibit 3E.

Benefit Relativity Model: Pharmacy

To calculate relativities for pharmacy benefits for plans that are secondary to Medicare, we used allowed charges incurred between July 2017 and June 2018, paid through September 2018, for members whose primary insurance is Medicare (including members in large ASO groups, as with the medical experience). The allowed charges were trended to the 12-month period that begins January 1, 2020 using the same trends as used for active members. Pharmacy scripts were assigned to the same categories as for the active members and allowed charges were adjusted for brands going generic between the experience period and the rating period. The benefit designs are modeled to produce a simulated paid PMPM, which is adjusted for mixture and frequency of scripts as described for the active relativities above. The adjusted paid PMPM is then divided by the Medicare Primary manual rate (without the adjustment for changes to the pharmacy contract) to produce the relativity.

The relativities for some Medicare Secondary pharmacy products currently in our book of business are displayed on Exhibit 3G.

Benefit Relativity Model: Integrated (CDHP)

The Medicare Secondary CDHP model combines both the medical and pharmacy Medicare Secondary models described above. One record was created for each member, date of service and type of service combination. A separate medical and pharmacy actuarial value is calculated, and the appropriate utilization adjustment is made.

The relativities for some Medicare Secondary CDHP products currently in our book of business are displayed on Exhibit 3F.

5.4. Formulary & Pharmacy Options

BCBSVT and TVHP offer groups a selection of formularies. Groups can select either the BCBSVT Open Formulary or the National Preferred Formulary. Groups electing the National Preferred Formulary receive greater rebates than those on the BCBSVT Open Formulary. To calculate the impact of the change, rebate-eligible claims for the large groups impacted by this filing were identified. Rebate totals were calculated under the contracted terms of each formulary. For groups changing formularies, the below factors

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are applied to projected rebates. The factors will be adjusted proportionately if the experience period includes a mix of formularies.

Experience Formulary	Rating Formulary	Rebate Multiplier
BCBSVT Open Formulary	National Preferred Formulary	1.256
National Preferred Formulary	BCBSVT Open Formulary	0.796

BCBSVT and TVHP offer groups an Active Choice pharmacy program. This program requires an active choice regarding the way members obtain their maintenance prescription drugs. For groups electing this program, the simulated paid pharmacy claims in the BRV calculation will be decreased by \$0.43 PMPM.

BCBSVT and TVHP offer groups an Express Scripts Specialty Pharmacy Exclusive option. Groups electing this option receive greater discounts and rebates on specialty drugs. Pharmacy contract factors for this option are calculated using an analogous method to the standard contract factors, as described in Section 4.2. Exhibit 3J Page 2 provides the discount factors for the Express Scripts Specialty Pharmacy Exclusive option. The factors below are applicable to the projected rebates. The factors were developed assuming the entirety of the experience period is on the non-exclusive specialty option and the entirety of the rating period is Express Scripts Specialty Pharmacy Exclusive option. For groups with a mix of specialty options in their experience period, the factors will be adjusted using an analogous methodology proportionately to the programs in effect.

Formulary	Specialty	Rebate Multiplier
BCBSVT Open Formulary	Express Scripts Specialty Pharmacy Exclusive	1.158
National Preferred Formulary	Express Scripts Specialty Pharmacy Exclusive	1.134

5.5. Riders

BCBSVT and TVHP file riders with the Vermont Department of Financial Regulation (DFR) that allow large groups to add or modify covered services. These riders include, but are not limited to, the Benefit Enhancement Rider, Acupuncture Benefits Rider, and Wellness Drug Rider. For riders that modify covered services, the benefit relativity model is used to price the rider. For riders that cover an optional service, allowed charges are developed from groups who offer that coverage and adjusted to the group's benefit, or a reasonable approximation of allowed charges is used if no experience data exists. If, in the underwriter's professional judgment, the election of a rider will create

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material anti-selection, the underwriter will modify the rate as necessary using underwriting judgment, as described in section 3.

6. Other Factors Applicable to All Large Groups

6.1. Manual Rate

The manual rate for active members is the paid claims PMPM incurred between October 1, 2017 and September 30, 2018 and paid through November 30, 2018 from the groups impacted by this filing, trended to calendar year 2020 using the trends and pharmacy contracts adjustments described in section 4. One group with predominantly out-of-state membership, particularly high experience claims, and an atypical structure was excluded from the manual rate calculation as we do not believe it is representative of a typical Vermont large group. Claims were capped at \$280,000⁷ and expected claims between \$280,000 and \$800,000 (the expected corporate reinsurance attachment point) were added. The expected claims were calculated using the method described in section 6.2.

A separate manual rate for Medicare Primary members was calculated using the paid claims PMPM from the BRV experience period, trended to calendar year 2020 using the Medicare Primary trends described in section 4.5 and the pharmacy contract adjustments described in section 4.2. No adjustments were made for large claims.

Calculation of the Manual Rate (Actives)		
Experience Paid Claims, capped at \$280,000 and completed	A	\$ 68,948,291
Expected Claims between \$280,000 and \$800,000	B	\$ 2,385,619
Overall Paid Trend factor (8.4% for 27 months)	C ₁	1.198
Pharmacy Contract Adjustment	C ₂	0.996
Projected Total Paid Claims	$D = (A + B) \times C_1 \times C_2$	\$ 85,168,291
Total Member Months	E	154,792
Manual Rate	$F = D / E$	\$ 550.21

⁷ Selected such that P = 95% and k = 0.05 with projected Large Group member months, using same data underlying the development of credibility formula.

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Calculation of the Manual Rate (Medicare Primary)		
BRV Experience Paid Claims	A	\$ 28,358,160
Overall Paid Trend factor (7.6% for 30 months)	B ₁	1.1953
Pharmacy Contract Adjustment ⁸	B ₂	0.9811
Projected Total Paid Claims	$C = A \times B_1 \times B_2$	\$ 33,257,970
Total Member Months	D	92,354
Manual Rate	$E = C / D$	\$ 360.11

Changes in the experience base, an additional year of trend, and an update to the trends detailed in this filing cause the change in the manual rate. Starting with the 2019 manual rate, each change is applied below to show the impact on the 2020 manual rate.

Manual Rate Development	PMPM	PMPM Change	Impact
2019 Manual Rate	\$478.69		
Update Experience Base		\$20.25	4.2%
Trend to 2020		\$33.84	6.8%
Update Trend		\$17.43	3.3%
2020 Manual Rate	\$550.21		

As noted in section 5.3 above, we use a version of the Medicare Primary manual rate without the pharmacy contract adjustment as the denominator of the relativity calculation. Per the above calculation, this value is \$367.03. We multiply the benefit relativity by the manual rate to calculate projected manual claims. If both the denominator of the relativity and the manual rate were to include the pharmacy contract adjustment, they would cancel in the multiplication and the projected claims would not reflect the discounts in the new pharmacy contract.

The method of calculating the manual rate is different for active and Medicare Primary members. The active manual rate was developed from the experience of active members in the large groups covered by this filing. There are not enough Medicare Primary members in large groups to develop a credible manual rate with only large group experience, so we based the Medicare Primary manual rate on the larger set of claims in the BRV experience, which includes Medicare Primary members from ASO groups as well as large groups.

The manual rate is adjusted to reflect a group's particular characteristics, as demonstrated in Exhibit 4A. An adjustment is made for the average age/gender factor (line B) of the group. For active and Medicare primary members, we used factors from

⁸ This adjustment is applied proportionately based on Medicare Primary membership with pharmacy coverage

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the SOA's report *Health Care Costs - From Birth to Death*⁹. Prior to this filing, active factors were from the *2014 Milliman Health Cost Guidelines*. In each case, the factors were normalized such that the membership in the manual rate experience period has an age/gender factor of one. The case's industry factor (line C) is determined based on the Standard Industrial Classification code. See Exhibit 4B for the schedule of industry factors. These have also been normalized such that the manual rate has a factor of one. We do not apply an industry adjustment to the manual rate for Medicare Primary members.

For groups with a projection period other than calendar year 2020, the manual rate will be adjusted for trend to reflect the group's projection period (line D) and the additional impact of pharmacy contract changes (line E). Finally, a contract conversion factor (line F) is calculated based on member distribution and tier factors in order to convert from a PMPM to a single rate basis (necessary because the adjusted manual rate (line S of Exhibit 1A) is blended with the projected single contract rate (line R of Exhibit 1A), which is not on a PMPM basis).

Multiple Experience Periods

When multiple experience periods are used, an adjustment factor is applied to the manual rate. The manual rate is developed using aggregate large group experience, so it is necessary to normalize the manual rate because the additional experience retained under the multiple year method is disproportionate to the average experience of each group. The factors are developed on a premium neutral basis, so the amount of premium collected in aggregate under a multiple experience period methodology does not vary from the premium collected in aggregate using a single experience period. The factors are applied depending on the number of years of experience used to develop the projected claims rate.

The development of the factors is shown in Exhibits 4C and Exhibit 4D. We begin with the total projected claims for the groups, split by the contribution from each group's credibility-adjusted manual and experience rates. We then recursively apply the credibility formula to the experience rate of the preceding year and apply the credibility residual to the manual claims. We develop a multiplicative factor to apply to the manual claims to ensure that the sum of the projected claims from the experience rate, preceding year experience rate, and the adjusted manual rate sum to the total projected claims calculated using a single experience period. The process is then repeated with an additional experience period to calculate the three-period adjustment factor.

⁹ <https://www.soa.org/Research/Research-Projects/Health/research-health-care-birth-death.aspx>
The factors for the age curve are in Chart 1 (for actives) and Chart 21 (for Medicare Primary) of the databook linked on the page.

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Manual Rate Adjustment Factor	
Two Experience Periods	0.9942
Three Experience Periods	0.9194

6.2. Large Claims Factors

BCBSVT and TVHP will use the formula and factors in Milliman's 2017 *Health Cost Guidelines - Reinsurance* to calculate expected claims above the pooling limit. The contents of the *Guidelines* are proprietary and confidential. This filing will provide a general description of the formula but will not include any of the factors.

Claim costs above a particular pooling point are developed separately for children and adults on a PMPM basis. The basis for each rate is a starting claim cost that varies with the pooling point and the out-of-pocket limit for the benefit. The starting claim costs are based on national data and factors are applied to adjust to our Vermont service area and the details of our contracts with local providers. An adjustment for demographics is applied, as is a trend factor to adjust the starting claim costs for the experience period of the renewal. The starting claim costs are also adjusted for the network of the benefit to account for claims from out-of-network providers, if appropriate for the benefit.

The adjusted adult and child claims rates by benefit are multiplied by the number of adult and child member months in the experience for that benefit to develop the total expected claims above the pooling level.

6.3. Administrative Charges

The sources of actual expense data in this filing are BCBSVT's data warehouse and accounting records. The experience period for this filing is November 2017 to October 2018. Actual BCBSVT and TVHP administrative expenses for the experience period were compiled on a GAAP reporting basis. During 2015, BCBSVT completed a comprehensive cost accounting study. The results were refreshed during 2017 to reflect known operational changes. Allocations to specific lines of business on a GAAP reporting basis were updated for the results of this study, beginning in December 2015. Exhibit 5A provides a reconciliation of the experience period to restated GAAP financial report data.

Experience Base of Actual Expenses

Administrative expenses are allocated under BCBSVT's cost accounting system to lines of business. Overhead expenses are allocated to lines of business on the basis of relative capital requirements, which were measured as each line's relative impact on Risk-Based Capital (RBC). We used BCBSVT insured large group and TVHP insured large group information for the base administrative charges.

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The cost accounting data by cost center is allocated into cost categories for purposes of determining administrative charges for each specific group account, given that account's characteristics.¹⁰ The group cost categories align with the rules used in the cost allocation model. The group cost categories include:

Account – those expenses that are allocated to specific group accounts on a per group account basis.

Member - those expenses that are allocated on a per member basis.

Contract - those expenses that are allocated on a per contract (subscriber) basis.

Medical Claims - those expenses that are allocated on a per medical claim basis.

Total Projected Claims - those expenses that are allocated via a percent of claims factor.

For each of the group cost categories described above, the respective number of unit months during the experience period was tabulated for BCBSVT and TVHP insured large groups. These segments are combined in this filing for marketing considerations. The unit months include the number of account months, number of member months, number of contract months, and number of medical claims by months. For the expenses allocated on a capital requirement basis, the experience administrative charges were divided by total projected paid claims to calculate a percent of claims factor.

Reclassifications reflected in Exhibit 5A include the removal of federal fees (these are added to premium rates separately; see section 6.8), GMCB billback (these are added to premium rates separately; see section 6.7) and fees paid to our vendor Health Equity for the administration of Health Savings Accounts and Health Reimbursement Accounts linked to our insurance products (participation in this service is optional and we assign these fees to groups who select the service). We also removed any expenses incurred due to one-time, non-recurring events, as these fees are not expected to continue to occur in the projection period. These include transitional costs associated with the conversion to a new technology platform. Decreasing membership has reduced total variable costs, but BCBSVT has delayed reducing its administrative budget in order to support transition activities. This transition will be complete by the end of 2019, so we have reflected a transitional savings of \$0.91 PMPM in 2020 for the large group line of business.

Using the adjusted experience period administrative expenses and unit months, per unit per month (PUPM) values were calculated. For the group segments included in this filing, there are four such PUPM values and one percent of claims value – one for each of the cost categories indicated above.

The experience period administrative expenses PUPM are shown in Exhibit 5B, line C.

¹⁰ PUPM costs for Cost Plus members having Medicare Supplement plans are set equal to the corresponding values for conventionally funded Medicare Supplement members.

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Projection Factors

Actual administrative costs PUPM from the experience period were projected to each of the rating periods. Projection factors are based on a 2.5 percent annual trend. These projection factors are intended to make reasonable but modest provision for increases in overall operating costs PUPM. Note that there are no known extraordinary or mandate-related costs at this time which require separate provision for the rating periods involved in this filing.

We are assuming that personnel costs (wages and benefits) will increase by three percent, the budgeted wage increase for 2019, over the projection period. Other operating costs are assumed to remain flat. Based on year-to-date October 2018 information, we have calculated that 83.5 percent of our administrative costs are for salaries and benefits. We are therefore increasing our total projected administrative expenses by the weighted average of 2.5 percent per annum.

Development of Administrative Charges Trend			
		YTD Oct 2018	Percent of Total
Employee costs	A	\$37,186,172	56.4%
Purchased service	B	\$21,376,708	32.4%
Other operating costs	C	\$7,353,106	11.2%
Subtotal administrative expenses	D = A+B+C	\$65,915,986	100.0%
Total Personnel Cost	E = A / (A + C)		83.5%
Trend for Personnel Cost	F		3.0%
Total Trend	G = $\{(1+F) \times E + (1.00) \times (1-E)\} - 1$		2.5%

For 2019, we project total BCBSVT membership will decrease, resulting in an increase in admin charges PMPM. We calculated PMPM admin charges with experience period enrollment and projected 2019 enrollment and found they increased by 2.0 percent with the projected 2019 enrollment. We assumed that variable costs represent half of the increase, and therefore applied an increase of 1.0 percent to the base PUPM charges to account for the reduction in membership.

Charges for Group Accounts

The administrative charge PUPM figures shown in Exhibit 5B are the values to be applied on an account by account basis, along with each group account's corresponding unit count, to produce account-specific administrative charges. These amounts will then be expressed as equivalent PMPM amounts for each group account.

Amounts for special items or unique services not part of BCBSVT or TVHP's standard scope of administrative services (e.g., special booklets, certificates, or reports) are to be determined and applied separately on an account-specific basis. Commissions based

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on the commission scale applicable to the account are not reflected in the schedule of admin charges in Exhibit 5B and will be calculated and applied separately.

Reasons for Increase

As noted in section 2, administrative charges for the 62 large groups in the renewal comparison are increasing by \$7.29 PMPM, a 17.8 percent increase. Below is a table showing the reasons for this increase:

Administrative Charges - Reasons for Increase				
		Admin Charges PMPM	Change PMPM	Percent Change
1	Approved January 2019 Admin from Q3 2018 Filing	\$40.85		
2	Update Experience and Allocation	\$47.52	\$6.67	16.3%
3	Remove Transitional Costs	\$46.59	-\$0.94	-2.0%
4	Update Trend	\$46.57	-\$0.02	0.0%
5	Trend to January 2020	\$47.74	\$1.17	2.5%
6	Update Membership Adjustment	\$48.08	\$0.34	0.7%
7	Other Adjustments	\$48.14	\$0.07	0.1%

Note that line seven, Other Adjustments, is a balancing item to reconcile line six with the total admin PMPM for the 62 groups. Line two expresses the experience and allocation update in terms of the experience period, which includes groups outside of the 62 expected to renew in 2020.

The increase in admin expenses PMPM is almost entirely due to the update in the experience used to develop the charges. The table below compares total admin charges and member months in the experience periods used for this filing and the previous filing. Despite a reduction in member months of 11.7 percent, total admin charges increased by 3.6 percent.

Administrative Charges - Experience Comparison				
Filing	Experience Period	Admin Charges	Member Months	PMPM
Q3 2018	Oct 16 - Sep 17	\$7,897,940	202,013	\$39.10
Q3 2019	Nov 17 - Oct 18	\$8,180,734	178,387	\$45.86
		3.6%	-11.7%	17.3%

6.4. Net Cost of Reinsurance

BCBSVT and TVHP have purchased reinsurance for claims in excess of \$800,000 for 2019, and expect to purchase similar reinsurance in future years with limits approximately equal to the 2019 limit increased by trend. We estimate that the target loss ratio for the reinsurance is approximately 75 percent, which implies a cost of reinsurance of approximately 33 percent of claims above the reinsurance limit. For

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each pricing period starting quarter, we determined an annual cost of reinsurance for the trended reinsurance limit by multiplying the expected annual claims cost above the limit by 33 percent. Dividing this by 12 produces the PMPM cost of reinsurance. The table of these PMPM's, based on pricing period starting quarter, is shown in the table below. If a factor is required for a pricing period not in the table, identical data, assumptions, and methodology as described above will be used to calculate the net cost of reinsurance.

Pricing Period Starting Quarter					
Q2 2019	Q3 2019	Q4 2019	Q1 2020	Q2 2020	Q3 2020
\$1.63	\$1.65	\$1.68	\$1.71	\$1.74	\$1.76

6.5. Pharmacy Rebates

Pharmacy rebates are calculated by taking the experience period rebates and trending them using the brand cost trend (from Exhibit 2F). Pharmacy rebates are paid with an average seven-month delay from the time of the original claims. For months in the experience for which we do not have detailed rebate information, an estimated rebate amount is included in the calculation.

6.6. Contribution to Reserve

As directed by management, we included the following contribution to reserve factors in the rate calculation:

Contribution to Reserve	
BCBSVT & TVHP Insured Groups	1.5% of premium
BCBSVT Cost Plus Groups	0.375% of equivalent premium

6.7. State Mandates and Assessments

Vermont Vaccine Purchasing Program Payments

The Vermont Vaccine Purchasing Program¹¹ offers health care providers state-supplied vaccines at no charge by collecting payments from Health plans, insurers, and other payers. The program's assessment is a PMPM for each Vermont resident. We estimate that the 2020 rates will be 60 percent of the original 2018 rates of \$8.15 per child and \$0.72 per adult. We will update these rates once the actual 2020 rates are known.

New Hampshire Purchasing Program Payments

The New Hampshire Purchasing Program¹² offers health care providers state-supplied vaccines at no charge by collecting payments from health plans, insurers, and other

¹¹ <http://www.vtvaccine.org/>

¹² <https://nhvaccine.org/>

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payers. The assessment for 2019 is \$6.47 for each child that is a New Hampshire resident. The current best estimate of the 2020 rate is \$7.20 per assessable life per month. We will use these rates until a new rate is approved.

New York State Health Care Reform Act

BCBSVT and TVHP pay the New York GME Covered Lives Assessment¹³ for all members who are New York residents as part of the New York State Health Care Reform Act. The assessment varies based on the county of residence. We will use the approved 2019 rates until new rates are approved.

Maine Guaranteed Access Reinsurance Association

BCBSVT and TVHP will pay the Maine Guaranteed Access Reinsurance Association Assessment¹⁴. The 2019 assessment is \$4.00 per member per month for each member that is a Maine resident. We will use the 2019 rates until new rates are approved.

Health Care Claims Tax

The Health Care Claims Tax of 0.999 percent applies to all claims or capitations incurred by members with Vermont zip codes. We use the percentage of current members with Vermont zip codes to estimate the percentage of rating period claims expected to be incurred by Vermont members. Act 73 of 2013 sunset the 0.199 percent assessment for the Health IT-Fund. Given this fee has twice been extended close to its sunset date, we will include it in the calculation and update the charge if new information becomes available.

Blueprint

BCBSVT and TVHP participate in the Vermont Blueprint for Health program. The current assessments for this program, applied to members who are attributed to a Blueprint provider as of the month the renewal is produced, are \$2.77 PMPM for the Community Health Team and \$3.00 PMPM for the Patient Centered Medical Homes (PCMH). PCMH are eligible for up to \$0.50 for performance. We project that our total PMPM for PCMH will be \$3.24. The projected performance payment is based on the average payment for large groups in the experience period used to develop the average rate increase. Any updates made to the Blueprint Manual¹⁵ will be incorporated in renewals.

Green Mountain Care Board Billback

BCBSVT and TVHP are assessed a billback from the Green Mountain Care Board. Billback amounts from the administrative charges experience period described in section 6.3 are applied to projected member months to develop the charge of \$2.30 PMPM. The portion of the assessment for nonprofit hospital and medical service corporations is increasing

¹³ <https://www.health.ny.gov/regulations/hcra/gmecl.htm>

¹⁴ <http://www.mgara.org/>

¹⁵ <http://blueprintforhealth.vermont.gov/>

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from 24 percent to 29.6 percent¹⁶. Accordingly, we apply a factor to reflect the increase in allocation.

GMCB Billback Calculation	
BCBSVT Projected Large Group Billback	\$210,917
TVHP Projected Large Group Billback	\$122,154
Total Large Group Billback	\$333,071
Projected Member Months	178,387
Billback Charge Before Allocation Change	\$1.87
Allocation Increase	0.296/0.24 = 1.23
Billback Charge PMPM	\$2.30

Other Assessments

Other state mandates and assessments will be included in the calculation as applicable.

6.8. Federal Assessments

Federal Insurer Fee

The Federal Insurer Fee is intended to help pay for some provisions in the Affordable Care Act. This fee is only applicable to Fully Insured & Refund Eligible Groups. H.R.195 temporarily suspended this fee for 2019 only. For 2020 and 2021, we project the fee to be 2.2% of premium. The fee will be weighted proportionally to the applicable fee by months in the rating period.

The IRS Annual Fee on Health Insurance Providers for 2018 Invoice, dated August 29, 2018, calculated the BCBSVT portion of the total assessment as:

$$\frac{\text{Net premiums taken into account for BCBSVT}}{\text{Net premiums taken into account for all covered entities}} =$$

$$\frac{\$554,571,682.00}{\$712,963,700,661.11} = 0.078\%$$

The numerator of the calculation reflects premiums collected in 2017. BCBSVT experienced losses in membership in 2018, which will reduce the amount of premium collected by BCBSVT proportionate to the net premium for all covered entities. Accordingly, we apply an adjustment to the BCBSVT portion of the total assessment by applying the following factor:

¹⁶

<https://legislature.vermont.gov/Documents/2020/WorkGroups/House%20Ways%20and%20Means/GMCB/W-Jean%20Stetter-Green%20Mountain%20Care%20Board%20Presentation-2-8-2019.pdf>

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$$\frac{2019 \text{ projected net premiums taken into account for BCBSVT}}{2018 \text{ invoice net premiums taken into account for BCBSVT}} = \frac{\$481,458,818}{\$554,571,682} = 0.868$$

The calculation of the fee is provided below, which uses the estimated 2019 industry assessment prior to the suspension of the fee. This calculation will be updated if additional information is received. BCBSVT will continue to update the rating formula in the event of a suspension of this fee.

Federal Insurer Fee Calculation			
		2018 Actual	2019 Projected
Projected Fully Insured Premium subject to the Federal Insurer Fee	a	\$554,571,682	\$481,458,818
Total Industry Assessment for Federal Insurer Fee	b	\$14,300,000,000	\$15,600,000,000
BCBSVT and TVHP Portion of Total Assessment (based on 2018 information)	c	0.078%	0.068%
Premium Adjustment	d	1.000	0.868
Projected BCBSVT and TVHP Federal Insurer Fee	e = b x c x d	\$11,123,112	\$10,534,558
Estimated Required Charge as a percent of Total Premium	f = e / a	2.0%	2.2%

Other Assessments

Other federal mandates and assessments will be included in the calculation as applicable.

7. Factors applicable only to specific Products

7.1. Stop Loss Coverage for Cost Plus products

Cost Plus groups are at risk for the claims incurred by their members. To protect themselves from high claims, they must purchase both Individual Stop Loss (ISL) and Aggregate Stop Loss (ASL) from BCBSVT¹⁷.

¹⁷ With the exception that with the approval of BCBSVT's Executive staff, Cost Plus groups can shop their stop loss in accordance with strict guidelines set forth by BCBSVT.

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7.1.1. Individual Stop Loss

ISL charges are developed using the same formula and factors as described in section 6.2. The charges are developed for the rating period, rather than the experience period. They include a load for a 70 percent loss ratio (to include the cost of reinsurance). Stacked tier factors are used to spread the charges across the different contract tiers, even when the benefit itself is aggregate, as the accumulation of the family cost sharing for the benefit does not have a meaningful impact on claims above the ISL attachment point.

7.1.2. Aggregate Stop Loss

Distribution of Individual Claims by Amount

The distribution of individual claims by amount was stochastically modeled using the membership and claims used to develop medical and pharmacy trend, as described in section 4 (including BCBSVT Cost Plus groups, BCBSVT ASO groups, BCBSVT insured large groups, BCBSVT insured small groups and TVHP insured groups). For each number of members (N) 25, 50, 100, 150, 200 to 1000 (by increments of 100), 1,500, 2,000 to 5,000 (by increments of 1,000) and 10,000 to 20,000, 25,000 simulations are run. Each simulation assigns a random number to every member and selects the (N) lowest members. For each specific stop loss level, the expected claims amount and standard deviation of the distribution of claims less than the specific stop loss level are calculated.

Expected Claims Factors

For each number of members (N) noted above and for each ISL limit, a preliminary expected fraction of aggregate claims in excess of 110%, 115%, 120%, 125% and 130% of expected aggregate claims was calculated. These were then adjusted for uncertainty in the projection of expected claims as described in the table below:

Expected to projected expected	>107.5%	107.5% - 102.5%	102.5% - 97.5%	97.5% - 92.5%	< 92.5%
Fraction of projections	F ₁ *	F ₂ *	F ₃ *	F ₄ *	F ₅ *

* Estimated for distribution

The factors developed above were then divided by 0.7 to produce an expected loss ratio (net of the provision for default) of 70 percent.

To protect BCBSVT against potential default situations (i.e. to cover the risk of the group failing to fund claims), the proposed ASL rates include an additional fixed risk charge of 0.5 percent of expected claims under the ISL limit for groups with fewer than

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20,000 members, and a reduced fixed risk charge of 0.4 percent of expected claims under the ISL limit for groups of 20,000 members or more.

The final factors are applicable to total expected claims under ISL.

To assure that the factors on each line are strictly decreasing with increasing stop loss percentage, in cases where the ratio for a 130% stop loss percentage was less than 0.0001:

- the calculated value for 130% was increased by 0.00001
- the calculated value for 125% was increased by 0.00002
- the calculated value for 120% was increased by 0.00003
- the calculated value for 115% was increased by 0.00004
- the calculated value for 110% was increased by 0.00005.

The tables of factors are contained in Exhibit 6A.

If the expected number of members (N) in the rating period is not one of the values in either table, the value is determined by interpolating linearly between the entries in the table for the numbers of members immediately below and above N.

If a group requests an ISL limit or aggregate attachment point that is not in the exhibit or if there are more than 20,000 members, identical data, assumptions, and methodology as described above will be used to calculate the appropriate Aggregate Stop Loss Rating Factor for the required attachment point.

7.2. Risk and Administrative Charges for Experience Refund Eligible products

Risk Charges for Experience Refund Eligible Plans

The BCBSVT and TVHP Experience Refund Eligible products involve pricing margins of 10 percent or 5 percent (i.e. expected claims below the pooling limit will be increased by 10 percent or 5 percent in the determination of the premium). The risk charge factors are developed in the same way as the ASL factors described in the previous section, except that the loadings for the 70 percent expected loss ratio and for default (the charges of either 0.5 percent or 0.4 percent of expected claims) do not apply. These factors are applied to total expected claims under pooling (before adjustment for pricing margin) and the retention is increased by the risk charge (both in the prospective pricing and in the refund calculation).

The tables of factors are contained in Exhibit 6B. If the expected number of members (N) in the rating period is not one of the values in either table, the value is determined by interpolating linearly between the entries in the table for the numbers of members immediately below and above N.

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If a group requests a pooling limit that is not in the exhibit or there are more than 20,000 members, identical data, assumptions, and methodology as described above will be used to calculate the appropriate risk charge for the required attachment point.

Settlement Administration Charge

A settlement administration charge, offset by an investment income credit, will be added to the group's administrative charges (described in section 6.3).

1. **Settlement Administration Charge:** An additional administrative charge of \$1,825 will be included to offset the costs of administering the retrospective arrangement. This amount is based on the 2019 settlement administration charge of \$1,780 increased by 2.5 percent trend to reflect the assumed increase for the direct staff cost.
2. **Investment Income Adjustment:** A credit of 0.2 percent of the margin at 5 percent and 0.4 percent of the margin at 10 percent will be applied to the settlement administrative charge to reflect investment income earned on the margin.

8. Medical Loss Ratio Projection

We use the factors and formula in this filing to project a Medical Loss Ratio (MLR) for 2020. Using the manual rate as a proxy for projected claims, we project a 2020 MLR of 89.5 percent for BCBSVT and 88.4 percent for TVHP. The BCBSVT credibility-adjusted MLR for Large Group was 96.8 percent in 2016 and 96.6 percent in 2017. The TVHP credibility-adjusted MLR for Large group was 98.4 percent in 2016 and 100.9 percent in 2017.

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BCBSVT MLR			
(A)	Manual Rate	\$550.21	Exhibit 4A
(B)	Rebates	\$11.52	2017 MLR Filing, untrended
(C)	Estimated HCQ	\$2.88	2017 MLR Filing, untrended
(D)	State Mandates and Assessments	\$9.41	Calculation as described on Exhibit 1C, using latest actual PMPM as needed
(E)	MLR Numerator	\$550.98	= (A) - (B) + (C) + (D)
(F)	Projected Claims	\$548.10	= (A) - (B) + (D)
(G)	Net Cost of Reinsurance	\$1.71	Actuarial Memorandum, Section 6.4
(H)	Administrative Charge	\$48.51	Calculation as of January 2020, from Exhibit 5B
(I)	GMCB Billback	\$2.30	Calculation using 2019 Charges
(J)	Subtotal	\$600.62	= (F) + (G) + (H) + (I)
(K)	Total Premium	\$629.43	= (J) / (1-0.022-0.009-0.015)
(L)	Federal Insurer Fee	\$13.85	= (K) x 2.2% (from Actuarial Memorandum, Section 6.8)
(M)	Commissions	\$5.52	= (K) x 0.9% (from 2017 MLR filing)
(N)	Contribution to Reserve	\$9.44	= (K) x 1.5% (from Actuarial Memorandum, Section 6.6)
(O)	MLR Denominator	\$615.59	= (K) - (L)
(P)	MLR	89.5%	= (E) / (O)

TVHP MLR			
(A)	Manual Rate	\$550.21	Exhibit 4A
(B)	Rebates	\$9.50	2017 MLR Filing, untrended
(C)	Estimated HCQ	\$5.01	2017 MLR Filing, untrended
(D)	State Mandates and Assessments	\$9.41	Calculation as described on Exhibit 1C, using latest actual PMPM as needed
(E)	MLR Numerator	\$555.12	= (A) - (B) + (C) + (D)
(F)	Projected Claims	\$550.12	= (A) - (B) + (D)
(G)	Net Cost of Reinsurance	\$1.71	Actuarial Memorandum, Section 6.4
(H)	Administrative Charge	\$48.51	Calculation as of January 2020, from Exhibit 5B
(I)	GMCB Billback	\$2.30	Calculation using 2019 Charges
(J)	Subtotal	\$602.64	= (F) + (G) + (H) + (I)
(K)	Total Premium	\$641.89	= (J) / (1-0.022-0.024-0.015)
(L)	Federal Insurer Fee	\$14.12	= (K) x 2.2% (from Actuarial Memorandum, Section 6.8)
(M)	Commissions	\$15.50	= (K) x 2.4% (from 2017 MLR filing)
(N)	Contribution to Reserve	\$9.63	= (K) x 1.5% (from Actuarial Memorandum, Section 6.6)
(O)	MLR Denominator	\$627.77	= (K) - (L)
(P)	MLR	88.4%	= (E) / (O)

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The above calculations represent estimates assuming that all pricing assumptions hold true, and assuming no change from 2017 values for various quantities (e.g. rebates, commissions).

9. Act 193 Information

The table below shows the year-over-year increase in plan spending and the percentage of the 2020 manual rate for generic, brand, and specialty drugs. The percent of 2020 manual rate was calculated as the experience drug claims (October 2017 - September 2018, paid through November 2018), trended to 2020 and adjusted to the pharmacy contract in force for 2020, divided by the 2020 manual rate of \$550.21 (from section 6.1). The year-over-year increase was calculated as the increase in drug spending from the experience period used in the 2019 renewals for the 2018Q3 filing (October 2016 - September 2017, paid through November 2017) to the experience period used for the 2020 renewals in this filing.

Drugs Processed Under the Pharmacy Benefit		
Type	Percent of 2020 Manual Rate	Increase in Plan Spending
Generic	2.1%	2.4%
Brand	7.7%	10.5%
Specialty	10.7%	22.7%

The increase in drug spending compared to other premium components is below:

Premium Increases	
Component	Increase
Rx Claims	14.5%
Medical Claims	5.8%
Non-Claims Components	32.2%

The 32.2 percent increase on non-claims components includes the return of the Federal Insurer Fee in 2020. Without this fee, the non-claims components increase 10.9 percent.

Please see Addendum A for the specialty formulary as of 1/1/2019.

Drugs administered in an outpatient setting and covered by the medical benefit represent 5.9 percent of the 2020 manual rate. Outpatient drug claims from the renewal experience period were trended to 2020 and divided by the 2020 manual rate of \$550.21.

BCBSVT's pharmacy benefits are administered by Express Scripts (ESI). ESI will manage claims processed through the pharmacy benefit but not claims processed through the medical benefit for use in a facility.

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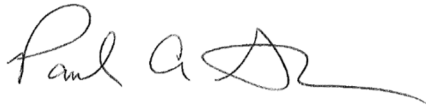
10. Actuarial Opinion

The purpose of this filing is to establish the formula, manual rate, and accompanying factors that will be used for renewals of Blue Cross and Blue Shield of Vermont and The Vermont Health Plan large group plans. This filing is not intended to be used for other purposes.

The data used in this analysis has been reviewed for reasonableness and consistency; however, it has not been audited.

It is my opinion that the rating formula and factors presented in this filing are reasonable, and have been prepared in accordance with applicable Actuarial Standards of Practice. The formula and factors will produce premium rates that are reasonable in relation to the benefits provided, and will not be excessive, deficient or unfairly discriminatory.

I am a Fellow of the Society of Actuaries and a Member of the American Academy of Actuaries, and I meet the Academy's Qualification Standards to render this opinion.



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

February 20, 2019