Aon Hewitt
San Francisco, CA | Health & Benefits

SJVIA

Actuarial Review

Rate Development & Reserve Adequacy and Fund Projections

February 29, 2016

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Executive Summary

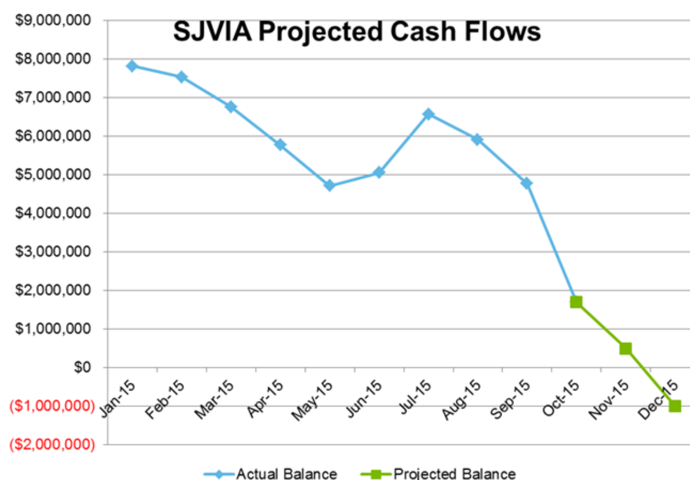
Background

At the request of the SJVIA, Aon Hewitt reviewed the 2015 and 2016 pricing and reserving practices for the Pool. This report contains a written analysis of our findings. Our report includes a review of the adequacy of the 2015-2016 rate development; the IBNR reserve adequacy; and, the 2016 fund projections. A summary of our review including conclusions, recommendations, and observations is provided.

The data used for this analysis was provided by SJVIA. Aon Hewitt relied upon data distributed to the Board and reports from Anthem, US Script, and AdminDirect. Aon Hewitt reviewed this data for reasonableness but has not audited it. Aon Hewitt relied upon the data from SJVIA and its carriers while performing this analysis. The data that was provided was generally accepted as accurate. Aon Hewitt made additional inquiries where the data provided did not meet expectations. This review does not constitute an actual audit of the data provided in the reports.

Rate Development Adequacy Overview

Throughout 2015, SJVIA experienced deterioration of its financial health as illustrated by the graph below (Cash Flows as of 11/06/15).



Aon Hewitt actuaries reviewed the 2015 and 2016 rate development with the data that was available at the time the pricing was developed. The 2015 pricing was approved at the August 2014 Board Meeting using data through June 2014. The 2015 pricing followed a similar schedule. While reviewing the pricing work that was initially done for SJVIA, we performed our analysis using the data that was available at the time that the original work was produced (June 2014 data for the 2015 pricing). Aon Hewitt also reviewed the pricing work that was completed using the chosen underwriting style, with consideration given to the strategic decisions that were made. Strategically, Aon Hewitt has concerns with the practice of using all reserves in excess of the IBNR to reduce the necessary renewal rates.

Aon Hewitt's review resulted in several minor changes in the 2015 pricing that resulted in a pricing increase of 2.85% compared to the implemented 1.13%. An increase of 2.85% would have still resulted in a deficit position for the SJVIA in 2015. The 2.85% reflects our review of the status quo pricing, which

based on the factors that follow, would have been inadequate. This “status quo” pricing should have, at minimum, been adjusted for the SJVIA Growth and the Fresno County Migration to the extent that they were expected. Aon Hewitt was not provided with the circumstances behind these two factors. If they were foreseeable, then the pricing should have been adjusted or should have included some margin. Aon Hewitt expects that the following factors contributed to the underfunded status for 2015:

- Claim Volatility and High Rx Trends – Rx trends increased significantly in late 2014 and 2015 primarily due to the arrival of high cost specialty medications. Additionally, the High Cost Claims (>$50,000) in the Anthem HMO plan has increased significantly.

- SJVIA Growth – SJVIA net enrollment increased by 1,391 subscribers or by15% between July 2014 and July 2015. 75% of the net increase in enrollment came from entities that were unable to provide past claims experience. New business underwriting, especially without historical claims, adds potential volatility to the Pool. Fresno County Migration – In December 2014 over 400 employees from Fresno County migrated from the Anthem HMO plan to the Kaiser HMO plan. These employees had an Age/Gender Factor that was 18% below the rest of the SJVIA HMO population. If this migration was not adjusted for in the pricing, it may have caused the Anthem HMO plan to be underfunded.

- Compared to 2015, Aon Hewitt observed more substantial necessary changes during the review of the 2016 pricing. These observations included changing the experience period from 18 months to 12 months and increasing the trend assumptions. These changes resulted in a required increase of 11.58% as compared to the 8.76% increase that was recommended. Aon Hewitt also recalculated the pricing using our recommended Incurred Claims approach. This approach indicated a rate increase of 16.5% (including 2% margin and no planned reserve release).

Aon Hewitt reviewed the New Business Underwriting Methodology (updated April 19, 2013) and found it to contain technically sound recommendations. Aon Hewitt believes that strict observance of these policies should produce viable long term rates for new entities in SJVIA. However, Aon Hewitt points out that this policy does create a short term deficit exposure, which should be paired with an offsetting excess reserve policy in order to preserve the financial stability of the SJVIA.

IBNR & Excess Reserve Adequacy

Aon Hewitt reviewed the IBNR percent of claims method that SJVIA uses and found the reserves on average to be adequate. However, an actuarially certified reserve will normally utilize more accurate reserve forecasting methods such as the Development and Projection methods. Aon Hewitt recommends that the SJVIA consider adopting policies for reserves in excess of the IBNR such as Contingency and/or Stabilization reserves. These excess reserves will reduce insolvency risk for the SJVIA and add additional controls around surplus cash use. Aon Hewitt also recommends that actuarially certified reserves be calculated, at a minimum, on an annual basis.

2016 Fund Projections

As mentioned above, Aon Hewitt’s recommended 2016 pricing was not aligned with pricing that was developed previously. Aon Hewitt expects a funding deficit of 2.0%-3.5% or approximately $2.2M-$4.0M due to the differences between the 16.5% renewal and the in-force rates. No migration was assumed and the Pool was generally assumed to be in a steady state. This estimate includes eliminating the Viverae contract and the 13.15% HMO and 4.9% PPO renewal for Fresno County and the County of Tulare. This

does not include the Kaiser migration in 2016 (400+)[1]. Although we have included 2.0% claims pricing margin that may absorb some of these unplanned events, if the continued Kaiser migration again resulted in a worse Anthem HMO risk pool (relatively health risk left Anthem and went to Kaiser) then the Anthem HMO premiums may be underpriced. The extent of this deficit will depend on the estimated change in the self-funded risk pool.

Further, our projections do not factor in potential loans from the members or the interest costs on those loans. This projection is the difference between our recommended rates (+16.5% renewal) and the in-force rates. The data that we received and this analysis indicate that the incurred claims for the year (paid + change in IBNR) will exceed the premium collected by $2.2M-$4.0M.

2015 Pricing

For the review of the 2015 pricing, Aon Hewitt performed a technical review of the current underwriting guidelines used by SJVIA by utilizing the data available at the time the underwriting was performed. The 2015 pricing was approved at the August 2014 Board Meeting using data through June 2014. The 2015 pricing followed a similar schedule. While reviewing the pricing work that was initially done for SJVIA, we performed our analysis using the data that was available at the time that the original work was produced (June 2014 data for the 2015 pricing).

Throughout this analysis, there are both technical recommendations (changes that should have been made within the current style) and strategic recommendations (comments regarding the approach taken to perform the underwriting). The majority of the 2015 comments were related to strategic decisions rather than the technical methodology.

2015 Pricing Method Overview

Aon Hewitt opines that from an overall technical perspective, Gallagher's 2015 pricing is not unreasonable. However, Aon Hewitt has a different opinion on some of the strategic decisions made in the 2015 pricing.

Gallagher used an industry accepted "Paid Claims" pricing methodology to calculate the necessary rate increase for the SJVIA program. This "Paid Claims" method works well for stable pools and requires less data than alternative methods such as the "Incurred Claims" method.

For the Paid Claims methodology, Gallagher used the most recent 12 months of paid claims experience (offset by stop loss reimbursements and Rx rebates) in conjunction with 12 months of enrollment data (lagged 2 months) to create the per employee per month (PEPM) claims basis. The enrollment is lagged 2 months in order to create a proxy for incurred claims. The 2 month lag seeks to account for the fact that medical claims typically experience a lag between the date of service (or incurred date) and the date claims are paid. The PEPM claims basis was then adjusted for Medical/Rx trend at 7.5%/4.5%, respectively, for 19 months to produce the 2015 PEPM claims target. Next, non-claims costs (i.e. administration costs, SJVIA fee, stop loss premium) are added to the cost of coverage. Finally, the total SJVIA cost estimate for 2015 is reduced by the entire balance of the excess reserves estimate. This cost is compared to the in-force premium to calculate the necessary renewal increase for the Pool.

[1] Aon Hewitt does not have the 2016 census data that would be necessary to estimate the impact of this migration.

In the Incurred Claims method, incurred claims by month are used as the claims basis in the pricing. The most recent months of incurred claims are "completed", meaning that the total run-out is estimated. This is typically done using the same methods that are used for estimating IBNR reserves. Once the incurred claims are estimated, the pricing follows the same steps as above including trend adjustments and adding non-claims costs. The benefit of the Incurred Claims method for SJVIA is a more accurate claims projection. The 2 month enrollment lag in the Paid Claims method may not create an accurate estimate of incurred claims since the Pool's self-funded enrollment has grown so quickly.

Observations

It appears that Gallagher consistently applied the trend rates over too short of a time period. When utilizing the "Paid Claims" method, an underwriter must consider that the midpoint of their data is based on where the enrollment data time periods. Hence, paid claims data from July 2013 – June 2014 with a 2 month enrollment lag is actually trended as if it were incurred claims data from May 2013 – April 2014 (the 2 month lag creates an estimate of incurred claims). Aon Hewitt also has a different perspective regarding Medical/Rx trends at the time of this pricing.

Pricing Comparison

Consideration:	Gallagher Pricing	Aon Hewitt Review
Experience Period	7/1/13 – 6/30/14 (12 mo.)	7/1/13 – 6/30/14 (12 mo.)
Claims Base	Paid Claims (enrollment lag)	Paid Claims (enrollment lag)
Rx Rebates	Included	Included
Stop Loss Reimbursement	Included	Included
Annual Leveraged Trend (Medical/Rx)	7.5%/4.5%	7.0%/7.4%
Trend Time Period (Months)	19	20
Demographic Adjustment	None	None
Margin	None	None
Excess Reserves Used (planned)	$5.37M	$5.37M
Rate Impact	+1.13%	+2.85%

As shown in the table above, this pricing ignores any adjustments for demographic changes within the population. Based on industry standards, a demographic adjustment is typically used to account for change in the Age/Gender Factor[2] and number of members per employee for the Pool.

A plan value adjustment is also typically included in pricing to reflect changes in the overall actuarial value of the plan. Employee buy-ups or buy-downs should be accounted for in order to ensure that the historical experience properly represents the projected state of the Pool.

The trend numbers are built from Aon Hewitt's proprietary internal trend guidance. This guidance is developed by leveraging multiple industry data sources; Aon Hewitt's own book of business; and, industry experts.

Aon Hewitt would not expect a difference in the calculation of the months of trend. Contrary to some other "judgment calls," calculating the months of trend is an exact formula. We expected that there would be no difference in our calculation. This impact may be small, but it was not expected to differ at all. For

[2] A common proxy for claims cost based on an individual's Age/Gender. See glossary.

example, using a 7% annual trend, a one month difference equates to about a 0.6% difference in estimated claims.

Recommendations

Aon Hewitt recommends that SJVIA consider adding margin to their rates. Margin helps absorb any unplanned deviations from the projected claims costs. For a group of SJVIA's size, margin may be excluded if the Pool is in a predictable steady state. However, at this time Aon Hewitt believes that some margin may be prudent given the level of growth that SJVIA has been experiencing.

Aon Hewitt also questions the practice of using the entire reserve surplus in excess of the IBNR to reduce the required renewal. Instead, Aon Hewitt recommends holding additional reserves in excess of the IBNR (as discussed in the Excess Reserves section below) before using excess funds to reduce the necessary renewal.

2015 Underfunding

The SJVIA Projected Cash Flows as of 11/6/15 distributed to the Board indicated that reserves were estimated to be reduced by $9M in 2015, 67% more than the planned $5.4M reserve release in 2015. Based on the data and information provided, Aon Hewitt expects several factors were key to the underfunding of the SJVIA plans in 2015: (1) Claim Volatility and High Rx trends (2) SJVIA growth (3) Fresno County HMO Migration.

Claim Volatility and High Rx Trends

In late 2014, prescription drug claim cost trends began to spike, in part, due to the entry of the highly publicized expensive specialty medications. The rampant cost increase to plans that occurred in late 2014 and 2015 caught many plan sponsors off guard. Aon Hewitt internal trend guidance published in early 2014 expected a 7.4% pharmacy trend for SJVIA for 2014-2015, but 10.8% for 2014-2015 in the guidance published in early 2015. This same phenomenon is also reflected in SJVIA's case specific data. When rating for 2015, SJVIA's case specific data indicated a prescription drug trend of 4.5-5.5% was used. However, pricing for 2016 SJVIA's case specific trend spiked to 11.5-13.5%. SJVIA medical trends also exhibited a similar increase. Financial Dashboards provided by Anthem also indicate a 54.7% increase in the High Cost Claimant (>$50,000) PEPM between the periods of 8/2014-7/2015 and 8/2013-7/2014 for the HMO plan.

SJVIA Growth

Any material change in the Pool must be properly accounted for in order for the funding to be adequate. Making the proper adjustments is especially challenging when writing new business. In most instances, the Pool will be forced to make a decision to accept/reject the new entities without perfect information. This issue is compounded when the new entity is unable to provide any historical claims experience. From July 2014 to July 2015, SJVIA's self-funded plan enrollment had a net increase of 1,391 subscribers or 15% (HMO: -122 or -2.3%, PPO: +1,513 or +38%). Of the new enrollment in this time period, 1,050 or 75% of the net increase in subscribers came from entities that were unable to provide prior claims experience. Aon Hewitt was not provided with adequately granular data to assess the accuracy of the rates that were developed for these new entities, but recognizes that any time new risk is introduced to the Pool there is a margin for error. The potential volatility introduced by growth is further addressed in the New Business Rates section.

Fresno County HMO Migration

In December 2014, over 400 employees from Fresno County migrated from the Anthem HMO plan to the Kaiser HMO. This migration represented a 7% decrease in total HMO enrollment. In Aon Hewitt's experience, the employees who migrate to Kaiser are typically in better health than those remaining on the plans with broader provider networks. We expect that the employees who migrated were some of the best risk from the Fresno County HMO population. To help validate this theory, Aon Hewitt calculated the Age/Gender factor of the SJVIA HMO population and of the Fresno County employees who migrated to Kaiser. The Age/Gender Factor for the migrating employees was 18% below the rest of the SJVIA HMO population. If this migration was not properly planned for, then the 2016 HMO premiums would be insufficient to cover the expected HMO claims.

Shortly after the employee migration from Fresno County, the HMO plan received offsetting new enrollment from the City of Clovis, City of Hanford, and City of Oakdale totaling 367 subscribers. The Age/Gender Factor of this new population was 32% greater than the existing HMO Pool and 61% higher than the migrating Fresno County population. The Anthem HMO risk pool was not only deteriorated by the migration of the Fresno County employees, but also by the new enrollment.

When underwriting the self-funded plans for SJVIA, the goal is to accurately predict the risk of the Pool in the following year using prior experience. As we demonstrated, the migration from the Anthem HMO to the Kaiser HMO resulted in relatively good risk leaving the Anthem HMO. This change in the risk composition of the self-funded plan would need to be adjusted for. Otherwise favorable past experience (which includes the good risk that migrated to Kaiser) would be used as the cost basis for the future (which post-migration has a relatively worse set of risk). Sometimes this migration is unexpected and the plan would need adequate margin to absorb this change.

If Kaiser's relative competitive position changed significantly (through a lower premium or a lower employee contribution), then it could reasonably be predicted that there would be some employee migration. This migration in the very least would cause additional uncertainty that should be offset with additional reserves or adding margin to the premiums.

Recommendation

Aon Hewitt expects that these factors contributed funding deficit that SJVIA experienced in 2015. We recommend further investigation of these factors and the circumstances surrounding them in order to better prepare for similar circumstances in the future.

2016 Pricing

Aon Hewitt reviewed the 2016 underwriting performed by Gallagher using the data provided to the Board. For the 2016 pricing, Gallagher deviated from the typical 12 months of historical experience that had been used in prior years and instead used 18 months. It appears that this alteration was made to smooth out some of the poor experience that was being observed from January-June 2015. However, smoothing out poor claims experience may not be prudent if the increase in observed claims is not temporary (such as deterioration of the risk pool). Treating an actual increase in costs as a temporary deviation from expectations may cause future premiums to be inadequate.

Aon Hewitt disagrees with the choice of trends that were used for the 2016 pricing. At the time this pricing was developed, industry trend sources were indicating 2015-2016 trends of 5-7% medical and 10-12% prescription drug. Further, Gallagher's own PEPM growth calculations for SJVIA indicated double digit prescription drug trends. Despite these factors, Gallagher used 4.5% prescription drug trends in the pricing for 2016. In Aon Hewitt's opinion, this deviation is outside the range of the underwriter's discretion

and would only be appropriate if properly justified by thorough supporting analysis. As in 2015, Aon Hewitt believes that Gallagher continued to trend the data over too short of a time period. Aon Hewitt's updates to the Gallagher underwriting indicate the following:

Pricing Comparison

Consideration:	Gallagher Pricing	Aon Hewitt Review
Experience Period	1/1/14 – 6/30/15 (18 mo.)	1/1/14 – 6/30/15 (18 mo.)
Claims Base	Paid Claims (enrollment lag)	Paid Claims (enrollment lag)
Rx Rebates	Included	Included
Stop Loss Reimbursement	Included	Included
Annual Trend (Medical/Rx)	7.5%/4.5%	5.5%/11.3%
Trend Time Period (Months)	21	23
Demographic Adjustment	None	None
Margin	None	None
Excess Reserves Used (planned)	$1.15M	$1.05M
Rate Impact	+8.76%	+11.58%

The most important considerations are the trends and the trend period. The Excess Reserve difference is due to the higher estimated costs (therefore less excess reserves that can be used to reduce the rate impact). The 2 months of trend would impact the estimated claims by about 1.2%.

If the typical 12 months of experience (7/1/14-6/30/15) had been used in the current methodology, the recommended rate impact would be 12.6% for the Pool (with a $1.2M planned reserve release). Using 18 months instead of the usual 12 months reduced the necessary renewal by 1.0%.

Aon Hewitt also performed recommended Incurred Claims underwriting for 2016 (with data through June 2016) based on the data provided for the Reserve Adequacy testing. This pricing indicates a necessary increase of 7.9% PPO and 22.6% for the HMO, combining to be 16.5% (without any planned reserve release). In addition to using incurred claims, this method has also built in 2% margin into the 2016 claims projection.

Recommendations

Additional adjustments are needed for any expected changes in the Pool, such as migration between self-funded plans and/or migration to the Kaiser HMO[3].

Aon Hewitt also recommends that the most recent industry standard trend rates be used in the annual renewal. As in the 2015 pricing, Aon Hewitt recommends adding margin to the pricing and questions the practice of using the entire reserve surplus in excess of the IBNR to reduce the necessary renewal.

[3] Recent conversations with the SJVIA have indicated that there was additional migration from the Anthem HMO to the Kaiser HMO in 2016. However, Aon Hewitt does not have the 2016 census data that would be necessary to estimate the impact of this migration.

Risk Pool Deterioration

Aon Hewitt is concerned with the possible deterioration of the SJVIA self-funded risk pool. Migration over the last year indicates:

- Relatively good risk is exiting the Pool by migrating from the Anthem HMO to the Kaiser HMO
- New entities in the self-funded plans primarily have PPO enrollment

In general, HMO enrollment is less risky than PPO enrollment due to the capitated portion of the HMO premium. This capitation provides financial protection to SJVIA against high utilization of the capitated services.

It is common for public entities in California to have a form of fixed-dollar employer subsidy for Medical benefits. This policy creates a competitive advantage to plans with low total premiums because employees will have a lower required contribution. Through Kaiser's care delivery system they can generally offer richer benefits for lower premiums than their competitors with broader provider networks. If healthy employees migrate from the self-funded plans to the Kaiser plan, it will likely result in a deterioration of the self-funded Pool. This deterioration will require a complementary premium increase, which will further exacerbate the premium differential between the Kaiser and non-Kaiser plans. As this cycle continues, the non-Kaiser plans may become unstable or too expensive to maintain. Certainly there are offsetting considerations such as the Kaiser service area and employee preferences.

Recommendations

SJVIA should be conscious of these factors when adding new entities. SJVIA may also consider building a back-end risk adjustment to surcharge the Kaiser premiums/employee contributions if the self-funded risk Pool deteriorates past a given threshold or maintaining a strict Kaiser enrollment percentage requirement. These considerations will be more important if Kaiser ever makes a strategic decision to "invest[4]" in the SJVIA business, or to issue premiums that the underwriting cannot support.

New Business Rates

Aon Hewitt reviewed the New Member Underwriting Methodology document (revised April 19, 2013) and found it to be a technically sound document. If followed correctly, this methodology should produce viable long term rates for new members in the Pool. However, this methodology does contain a short term exposure as illustrated by a simple example.

Consider an entity, City X, with 1001 employees is joining SJVIA without claims experience (perhaps from CalPERS):

[4] There are times when an insurer will offer rates that are lower than presently justified by their underwriting. This is typically a business decision to gain market share. For example an insurer may offer to reduce premiums by 20% in order to cause a large migration. This scenario may cause the incumbent plan funding to be inadequate.

	Initial Entry Period		Renewal	Optional
	Year 1	Year 2	Year 3	Year 4[5]
SJVIA Premium[6]	$86,644,000	$90,837,000	$94,016,000	$96,502,000
SJVIA Status Quo Claims	$86,644,000	$89,677,000	$92,815,000	$96,064,000
Loss Ratio	100%	99%	99%	100%
City X Premium	$8,179,000	$8,575,000	$9,733,000	$10,963,000
City X Claims	$9,406,000	$9,735,000	$10,076,000	$10,429,000
Loss Ratio[7]	115%	114%	104%	95%
Total Premium	$94,482,000	$99,412,000	$103,717,000	$107,209,000
Total Claims	$96,050,000	$99,412,000	$102,892,000	$106,494,000
Loss Ratio	101%	100%	99%	99%
Total Surplus/Deficit	**($1,227,000)**	**$0**	**$858,000**	**$972,000**
		Year 1- Year 2	Year 2 - Year 3	Year 3 - Year 4
SJVIA Claims Trend (Status Quo Renewal)		3.5%	3.5%	3.5%
SJVIA Renewal with City X		4.8%	3.5%	2.6%
Excess Renewal		1.3%	0.0%	-0.9%
City X Renewal[8]		4.8%	13.5%	12.6%
Experience Modification Factor		114%	110%	103%

Suppose that City X's initial rates are underpriced by 15% due to a lack of claims experience and a risk profile that exceeds the demographic adjustment. This entity will create an unplanned budget deficit in Year 1 of $1.2M. In Year 2, this entity will receive the pooled rate increase (which will be adjusted upward from 3.5% to 4.8% to reflect the poor experience of City X). The SJVIA rates will now be stable in Year 2, but higher than they would've been without City X (excess renewal of +1.3%). In Year 3 and Year 4, City X's subsidy will decrease as their renewal is impacted by their Experience Modification Factor (EMF). Additionally, a surplus should be created each year that City X's renewal is greater than the overall SJVIA renewal. By Year 3, the majority of the 15% underpricing should be corrected for City X. This simple example illustrates the long term viability of the methodology (removing the 15% underpricing over 4 years), but also shows the short term volatility of underwriting new business ($1.2M deficit in Year 1).

Based on our simplified example, the SJVIA may not recoup deficit funds until Years 3 and 4 when the individual entity's renewal is influenced by the Experience Modification Factor. However, entities only

[5] Assuming City X remains a member of the SJVIA after year 3
[6] Simplified example: Claims Premium only, ignores expenses for now. Most volatility in budgeting comes from claims.
[7] Credibility Adjusted Loss Ratio
[8] City X Renewal = SJVIA Renewal (Revised) in Year 2. In Years 3-5: SJVIA Renewal (Revised) + Experience Modification Factor (from the prior year, up to 10% per year)

agree to a 3 year commitment, so it may be that for a grossly underpriced entity the deficit funds are never recouped.

Aon Hewitt does not have data that is granular enough to assess the actual impact of SJVIA's new business underwriting. This hypothetical example is meant to illustrate the short term funding volatility that new business can create and illustrate that it would be in the best interest of the SJVIA to carry adequate reserves to offset this volatility.

Recommendations

Aon Hewitt recommends establishing a reserve policy to ensure that sufficient funds are on hand for the Pool to absorb the short term volatility of their New Member Underwriting Methodology. Adequate reserves in excess of the IBNR can be used to cover short term deficits, and recovered in later years (assuming the entity remains with SJVIA) once the Experience Modification Factor begins to correct any underpricing. SJVIA's board can work towards establishing a minimum level of capital needed to underwrite new business. This would be especially prudent when the proposed new entity does not have prior claims experience.

Aon Hewitt recognizes that a minimum reserve policy may limit the amount of new business sold to the available reserve funds. However, a minimum reserve policy would further the SJVIA expansion goal to "benefit from stability and rate advantages typically associated with very large accounts." When establishing the required reserve level, the Board could strike a balance between stability and growth.

IBNR & Excess Reserve Adequacy

IBNR Reserves

Based on information reported to the SJVIA Board, the IBNR reserve methodology for SJVIA from inception has been a percent of annual paid claims. Specifically, from inception to 2015, SJVIA has held 16% of annual medical paid claims and 5% of annual prescription drug paid claims. In the 2016 pricing SJVIA reduced their IBNR factors to 14% of annual medical paid claims and 5% of annual prescription drug paid claims. Aon Hewitt reviewed the adequacy of this methodology be examining the historical run-out patterns of SJVIA's medical and prescription drug claims.

Analysis of the run-out pattern of the medical and prescription drug claims indicate that the IBNR reserve factors used by SJVIA have been adequate on average between July 2014 and June 2015[9]. This time period was chosen in order to allow for five months of run-out data, which reduces the IBNR estimation errors.

Recommendations

Aon Hewitt recommends that SJVIA receive an actuarially certified IBNR estimate, at a minimum, on an annual basis. An estimate built using a percent of paid claims may ignore recent trends in the processing

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[9] IBNR estimates developed in the graph above are built using Aon Hewitt's proprietary IBNR model. This model builds upon actuarial methods commonly accepted by the Society of Actuaries and American Academy of Actuaries as valid methods to estimated incurred claims for the purpose of determining an IBNR. All healthcare actuaries in the US are expected to be familiar with these methods and use them. See the glossary for explanations on these methods.

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speeds of the claims data and could possibly underestimate the reserve as SJVIA grows. Further, a more exact estimate, such as using the Development and Projection methods[10], would be beneficial when assessing the level of capital in excess of the IBNR. Aon Hewitt also recommends including margin in the IBNR estimate and a provision for claims expenses, as is commonly accepted in the industry.

Excess Reserves

Aon Hewitt's review of the current SJVIA reserving policies indicates that there are no formal policies in place for reserves in excess of the IBNR. Underwriting documents indicate that any funds in excess of the IBNR are routinely used to reduce the required rate increase of the next renewal. While this practice benefits SJVIA entities by immediately returning any excess surplus (in the form of reduced renewals), it introduces significant cash flow risk to SJVIA. It is prudent for pools such as SJVIA to establish additional reserves as a provision for adverse deviation in the projected claims. A level of capital can be established as a contingency reserve in order to ensure that sufficient funds are available for expected claims for the given year up to a chosen confidence interval (i.e. 80th, 95th, 99th). Funds in excess of the IBNR and contingency reserves could then be used to reduce the SJVIA renewal (all at once or amortized over several years) or invest in new business. A formal stabilization reserve could be established with the purpose of distributing funds in excess of the reserves in a purposeful manner.

Recommendations

Aon Hewitt recommends that additional reserves such as a contingency and/or stabilization reserve be developed to further accomplish the SJVIA's goals. Further Aon Hewitt recommends that the Board formally approve all reserve policies and any changes to these policies.

SJVIA 2016 Fund Projections

After reviewing the 2015 and 2016 plan year pricing, Aon Hewitt developed 2016 budget projections for SJVIA. Aon Hewitt expects the costs to the SJVIA in calendar year 2016 to run 2.0%-3.5% over total budgeted premiums. At the time this analysis was conducted, the budget deficit was estimated to be between $2.2M - $4.0M.

This assessment is based on claims data through November 2015 and enrollment through October 2015. No migration was assumed and the Pool was generally assumed to be in a steady state. This estimate includes eliminating the Viverae contract and the 13.15% HMO and 4.9% PPO renewal for Fresno County and the County of Tulare.

Recommendations

Aon Hewitt recommends that the board develop a funding and underwriting policy geared towards bringing SJVIA back to a sound fiscal position and to ensure long-term financial stability. Aon Hewitt opines that conservative pricing assumptions and oversight; creating reserves in excess of the IBNR; and, more selective new business underwriting are all necessary in order to help improve the financial position of the Pool increasing the chances that the Pool can be sustained.

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[10] See Glossary for an overview of these methods

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About Aon

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Appendix: Glossary

Age/Gender Factors – On average Medical/Rx costs vary significantly by Age/Gender. The difference in cost by Age/Gender can be reduced to standardized factors (Male 65+ Factor =2.5, meaning that costs for males ages 65+ are 2.5 more than the average member). Each age range and gender has a cost factor.

In order to calculate the risk status of a group, the aggregate Age/Gender factor can be calculated. This aggregate factor can also be calculated at several points in time to estimate how the risk of the group has changed over time. Age/Gender factor analysis has its drawbacks, but requires significantly less data and is less costly than the more accurate methods (such as Risk Scores). Age/Gender factors are a useful way to quickly estimate the risk of a population based solely on each subscriber's age and gender.

Completed – Completed is a term used to refer to the calculation of Incurred Claims. For example, consider there is $300,000 in claims incurred in January 2016 (members received medical services in January 2016) and paid in January 2016 (the insurer paid the medical service providers in January). Based on prior experience the actuaries estimate that only 30% of total incurred claims are paid within the same month. So the total incurred claims for January 2016 = $300,000/30% = $1,000,000. This process of estimating the remaining claims is called "Completing" the claims.

Employee buy-ups or buy-downs – This term references changes in employee plan selection during open enrollment. Specifically to "buy-up" means that an employee migrates to a higher value (and generally higher cost) plan. Conversely a "buy-down" means that an employee selects a less rich plan (an generally less costly).

Incurred Claims – Medical Claims typically experience a period of time (or lag) between the date that services are provided and the date that the claims are paid. For example a member may have a hospital stay in January, but the insurance company does not receive the claim until March. Some claims may take up to 12-18 months before they are fully paid (or **completed)**. The actual incurred claims for January 2015 may not be known with certainty until January – June 2016. The majority of the claims for a given incurred month are paid within the first 4-6 months. Actuaries have developed models that help estimate the final incurred claims for any given month at a point in time.

Medical Premiums are set to the level of expected incurred claims for a given time period. It is necessary to estimate historical incurred claims in order to calculate future premiums and set current IBNR reserves.

Impact on Pricing:

- **Paid Claims Pricing** – this method technically still estimates incurred claims. However, this estimate is done by mismatching the paid claims and enrollment of a particular time period. For example paid claims from January –December 2015 would be matched with enrollment from November 2014 –October 2015 (2 month offset or lag). The theory is that the majority of claims that are paid in January 2015 are really incurred by the enrollment in November 2014. This 2 month lag creates an estimate of incurred claims and shifts the claims experience to the enrollment's time period.
- **Incurred Claims Pricing** – in this pricing method, estimates of incurred claims are produced in a separate model (using the same methods as an IBNR calculation – see below).

IBNR Reserve Methods – Overview

The IBNR reserve seeks to quantify the amount of claims that have been incurred but not reported as of a particular point in time. In other words, if the plan was to terminate all coverage as of a point in time, how much would they continue to pay in claims over the next 18 months? At its core, the answer to this question generally reduces down to creating an estimate of ultimate incurred claims and comparing that to what has been paid to date. A detailed exhibit would look like:

Month	Incurred Estimate	Paid to Date	Estimated IBNR
October 2015	$1,000,000	$890,000	$110,000
November 2015	$1,000,000	$780,000	$220,000
December 2015	$1,000,000	$350,000	$650,000
Total IBNR as of 12/31/15			**$980,000**

As seen in the table above, the IBNR is really just the aggregate value of the difference between the Paid to Date and Incurred Estimate for each month. The key assumption in setting the IBNR is the Incurred Estimate. There are multiple methodologies to estimate incurred claims and below we describe two of the most popular methods:

- **Development Method** – In the development method claims data is summarized by paid date and incurred date in the form of a lag triangle. The lag triangle data is analyzed and adjusted to produce Completion Factors such as:

Month	Completion Factor
4	94%
3	89%
2	78%
1	35%

  These completion factors establish a typical run-out pattern that is expected for all months of data. For example in Month 1 (regardless of what month) this method assumes that the paid amount is equal to exactly 35% of the ultimate incurred claims for Month 1. This method can produces unstable results in Month 1 & Month 2 due to the variation in paid claims and the low completion factors. Typically a different method such as the Projection method will be used where the development method produces unstable results.

- **Projection Method** – this method is often used in conjunction with the Development Method. In this method incurred claims are estimated by trending historical data forward and applying any necessary adjustments (i.e. seasonality, plan changes). This method is more stable, but is also not sensitive to the most recent data observations.

Generally, an actuary may use multiple methods together to produce their estimate of incurred claims and subsequently their IBNR reserve estimate. In contrast to these complex methods, a common short-cut is to use a multiple of paid claims (Factor Method). This method can be valid, as long as it consistently produces adequate IBNR reserves.

Paid Claims – Paid Claims refer to the actual amounts paid out for claims incurred each month. For example the plan may pay $1,000,000 in claims in January 2015. This amount is not the same as the claims incurred in January. The majority of the claims paid in January 2015 were really incurred in 2014.

Pool/JPA – A group of entities that join together to obtain or provide services. With insurance pools specifically, members may risk share and retain/pool a portion of the risk and/or purchase insurance/reinsurance as a means of risk transfer.

Run-out Pattern - a run-out pattern in this context is the pattern in which a month of incurred claims becomes completed. For example a run out pattern may look like the following:

Month	Completion Factor
4	94%
3	89%
2	78%
1	35%

In the first month, say January, 35% of that month's incurred claims are also paid. In February, 43% of the ultimate incurred claims for January are paid. By April, 94% of the incurred claims for January have been paid.