



Recommended Capital Adequacy Reserve for HealthTrust, Inc.

As of June 30, 2021

Prepared for:
HealthTrust, Inc.

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SUMMARY OF OPINION

It is my opinion that as of June 30, 2021 HealthTrust, Inc. should target a required capital adequacy reserve for the protection of its beneficiaries of between \$90 million and \$145 million. This amount is in addition to other required reserves. To reach this conclusion I relied on generally accepted actuarial methodologies.

My opinion is based on a sound actuarial methodology and assumptions as to future events. While I relied on financial data and information provided by HealthTrust to establish some of these assumptions, HealthTrust directed me to use the assumptions I believed were most appropriate and reasonable based on my actuarial training and experience in conducting actuarial analyses as applied to organizations similar to HealthTrust. As such, I chose the assumptions to use based on my professional judgment.

A change in assumptions will change the results and possibly the related conclusions. Actual experience will differ from the assumptions chosen and as such actual results will likely differ from estimates.

I, Catherine Murphy-Barron, am a member of the American Academy of Actuaries and meet its qualification standards to render the actuarial opinion contained in this report.



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BACKGROUND

HealthTrust, Inc. (HealthTrust) provides medical, prescription drug, long- and short-term disability, life and dental benefits to towns, cities, counties, schools, and quasi-municipal organizations in New Hampshire. Health benefits make up the bulk of HealthTrust's business, accounting for about 93% of HealthTrust's claim expenses for the fiscal year ended June 2021. HealthTrust's member groups purchase guaranteed cost health coverage similar to a fully insured arrangement in an insurance company. The health claims are administered through Anthem; however, HealthTrust retains the entire risk for the benefits.

HealthTrust is a pooled risk management program operating under Chapter 5-B of Revised Statutes Annotated (RSA) of the State of New Hampshire. RSA5-B:3 I states that "A political subdivision, by resolution of its governing body, may establish and enter into agreements for obtaining or implementing insurance by self-insurance; for obtaining insurance from any insurer authorized to transact business in this state as an admitted or surplus lines carrier; or for obtaining insurance secured in accordance with any method provided by law; or for obtaining insurance by any combination of the provisions of this paragraph."

HealthTrust retains the services of a consulting actuary to develop premium rates and claim reserves for the benefits provided to its members. A pooled risk management program under this statute is not an insurance company¹, however, the services provided by HealthTrust to its members mirror the services provided by health insurance companies to policyholders. Like an insurance company, HealthTrust needs to hold funds on its balance sheet for the protection of its covered individuals. These funds can be referred to as capital, surplus, or risk reserve. For the purposes of this report we refer to them as a "capital adequacy reserve" in order to be consistent with the terminology used by the HealthTrust Board of Directors. For any risk bearing entity, an adequate capital adequacy reserve is crucial for continued viability and the protection of its beneficiaries. It is needed to:

- Cover variations between actual and expected experience that occur from year to year,
- Protect against unforeseen events,
- Maintain service capabilities, and
- Ensure that all commitments will be met.

The New Hampshire Supreme Court's interpretation of RSA5-B, upheld in its opinion² issued January 10, 2014 the requirement that a pooled risk management program "establish necessary reserves in accordance with an actuarially sound methodology and that it return amounts in excess of the amount needed for administration, claims, reserves, and reinsurance".

At its meeting on March 4, 2014, the HealthTrust Board of Directors voted to engage Milliman to "offer an opinion, based upon generally accepted actuarial methodologies, regarding the capital adequacy reserve that is needed for the HealthTrust pooled risk management program to maintain solvency, in addition to any other required reserves."

This report presents my opinion as to the capital adequacy reserve for the HealthTrust pooled risk management program as of June 30, 2021 and describes the methodology used to reach said opinion.

¹ RSA5-B:6,I

² Appeal of Local Government, Inc., No. 2012-729 (N.H. January 10, 2014)

RESULTS

It is my opinion that as of June 30, 2021, Health Trust should target a required capital adequacy reserve for the protection of its covered beneficiaries of between \$90 million and \$145 million. The amount should be held in addition to other reserves, such as incurred but not reported (IBNR) claim reserves, premium deficiency reserves, and any other required reserves. To reach this conclusion, I used a stochastic modeling approach which is a generally accepted actuarial methodology for determining capital adequacy reserve levels. The methodology used to reach this recommendation is consistent with that used in prior years.

The ability of an organization to adjust premium rates to account for variations in expected claims or an unforeseen event impacts an organization's appropriate capital adequacy reserve level. Sometimes, due to competitive pressures or government oversight, an organization will be unable to implement a premium increase in a timely manner after an unforeseen event. Such is the case for HealthTrust with its July renewals. Approximately, seventeen percent of HealthTrust's enrollees renew in January of each year with the remaining 83% renewing in July. Premium rates for both renewals are developed in October of the prior year, using claims experience for the 12 months ending June 30th. This is a typical timeline for premium rate development for groups with an effective date of January 1. Implicit in these premium rates is 18 months of trend.

This is not a typical timeline for groups with a July 1 effective date as claims will be trended 24 months as opposed to 18 months, adding to the uncertainty of the projection. In October of each year HealthTrust notifies July renewal groups of next year's expected premium rate, based on claims through June 30. Ordinarily rating for a July block of business would be based on claims experience through at least December of the prior year, if not March of the current year, thereby limiting the additional uncertainty from trending claims an extra 6 months. In addition, the extended delay between the experience period and the rating period means it is not always possible to reflect current deterioration in experience into the renewal rating. The groups are not guaranteed the proposed rate but are given a guaranteed maximum rate (GMR), which is typically up to 2% higher than the October estimated rate. The premium rates are revisited in March using claims paid through December of the prior year. Each group will be charged the revisit rate unless it is higher than the GMR, quoted in October, in which case the group pays the GMR and HealthTrust bears the cost of the shortfall.

As 83% of HealthTrust's enrollees are July renewals, prices are effectively set in October for approximately \$500 million worth of claims as opposed to \$330 million if these groups were to renew in January.

We set the capital adequacy reserve for HealthTrust at an amount such that there is only a 5% chance of HealthTrust becoming insolvent within 5 years. We believe this level balances the two competing capital requirements. First, HealthTrust must hold enough capital adequacy reserve so that it can weather most unforeseen events. The incentive here is for the organization to accumulate capital so that it can handle any and all events that may happen, i.e., a very small likelihood of insolvency.

The other requirement which has the opposite incentive is the requirement, under New Hampshire law, RSA 5-B, that the organization return to groups all funds beyond those required for administration, claims, reserves, and purchase of excess insurance. The incentive under this requirement is to return most, if not all, surplus, i.e., a much higher probability of insolvency. HealthTrust's premium rate equals expected claims plus expected expenses. There is no profit load built into the rates. The assumptions used are based on the actuaries' and staff's reasonable expectation as to experience during the projection period. There is no explicit conservatism built into these assumptions. Therefore, even if all the assumptions are correct, in some years costs will be higher than projected and in others, costs will be lower due simply to normal fluctuations, but on average premiums will equal costs. If surplus is returned to enrollees any year there is a gain, then HealthTrust may not have enough capital adequacy reserve in years with a loss.

We believe using a 5% chance of insolvency reasonably balances these two competing incentives.

We chose a 5 year threshold for insolvency for two main reasons:

- At the time of premium rate development HealthTrust knows with reasonable certainty the true level of historical claims used to develop the premium rates, although there is a possibility that claims will improve or worsen during the long period between the end of the experience period and the effective date of the new rates. July groups get the benefit of any improvements in claims between the time of the GMR rating and the revisit rating but HealthTrust bears the cost of any deterioration in claims, beyond the GMR, during the same period. After a bad year, the premiums can reflect any necessary premium increases due to the bad year. However, most organizations will hold enough capital adequacy reserve so that it does not have to make premium or benefit changes that are so draconian that the market will not accept them and therefore lose a large portion of enrollment. Ideally an organization will spread the premium realignment over multiple years.

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- In addition, given that 83% of HealthTrust's business has a GMR, HealthTrust will be well into the 2nd year of the group's coverage before it can implement any needed rate adjustment.

Given the above considerations and HealthTrust's goal of protecting its covered individuals, we feel 5 years is a reasonable projection period for the purpose of estimating HealthTrust's capital adequacy reserve.

Since HealthTrust operates like an insurance company and is subject to many of the same risks as an insurance company, it is reasonable to consider the requirements imposed on insurance companies when thinking about risk management and capital adequacy reserve for HealthTrust. The National Association of Insurance Commissioners (NAIC) has established Risk-Based Capital (RBC) standards for setting minimum capital and surplus for licensed insurance companies. The NAIC asked the American Academy of Actuaries to develop the formulas and factors for health RBC. The Academy's recommended factors were set to cover a 5% probability of insolvency over a seven year period. For HealthTrust, we also used 5% probability but over five years, a slightly shorter time period. This is slightly less conservative than the health RBC. The American Academy of Actuaries in its RBC development was addressing all health-related risks including some products with long durations, such as long term disability and long term care insurance. HealthTrust's coverages – medical, dental, and short term disability – are all short duration products, so a somewhat shorter time period is appropriate.

A major driver of the level of capital adequacy reserve required is the organization's ability to increase or decrease premiums without having a detrimental impact on the long term viability of the pool. We therefore developed our capital adequacy reserve estimate under two premium development scenarios.

Under the first scenario, HealthTrust has the ability to recoup the full amount of any losses in the rate renewal, subject to a rate increase that is 5% above the expected long term trend. Conversely, if HealthTrust experiences excessive gains, the premium rate increase is adjusted downwards subject to 5% below the expected long term trend. Under this scenario we estimate the capital adequacy reserve required at June 30, 2021 to meet the 5% chance of insolvency over five years to be \$90 million.

Under the second scenario, HealthTrust is unable to implement a rate increase above the expected long term trend. In this case losses will be recouped over several years. Conversely, if they experience excessive gains, the rate increase is held to the expected level without downward adjustment to recognize favorable claims experience. We estimate the required capital adequacy reserve as of June 30, 2021 under this scenario to be \$145 million.

HealthTrust is not limited by regulation on the price it charges for its policies and so it appears to have the ability to recoup the full amount of any losses. In reality, due to market pressures and the risk of losing a large number of groups if premium increases are considered too high, there will be times when HealthTrust has less ability to increase premium rates than it would like to have. Therefore, I provide these two estimates, \$90 through \$145 million, as the range for a required capital adequacy reserve for HealthTrust as of June 30, 2021.

The result of any analysis involving estimation of future events is heavily dependent on the underlying assumptions. Our underlying assumptions are described in the methodology section below. Any changes to these assumptions will change the results and possibly the related conclusions. Actual experience will differ from the expected values.

METHODOLOGY

In order to determine the amount of capital adequacy reserve HealthTrust needs to remain solvent and therefore ensure its beneficiaries' are protected over the next 5 years, with 95% confidence, we used a stochastic model. Stochastic models use probabilities to forecast a wide range of possible results, rather than a single outcome like deterministic projections that focus on expected values and not variances from expected. The purpose of the model is to determine needed levels of capital adequacy reserve by assessing the likelihood that specified target levels will be adequate under a wide range of possible scenarios.

Some variables in our modeling are quantifiable using statistics gathered from historical data, for example trend. Other variables are not easily quantifiable usually because they happen so infrequently that there is little data on the frequency or impact of these events. For example,

- Systems problems, such as provider payment errors, that cause rating problems due to lack of recognition of the actual underlying claim costs, or
- Errors in reserves due to poor technique or change in claim processing patterns.

In general, we used insurance industry assumptions and our actuarial judgment, tailored where appropriate for HealthTrust, to determine the impact and the probability of occurrence for most of the events described below. The target amount for the required capital adequacy reserve covers all coverages for which HealthTrust bears the risk and was developed assuming that the variability between actual and expected for all coverages is the same as it is for medical coverage. Medical coverage represents approximately 93% of total claim dollars.

Our analysis starts with a baseline, deterministic projection which represents our best estimate of premium, claims, and expenses projected annually for five years. Once we have set the baseline scenario, we develop a list of possible events that could change the financial position of HealthTrust relative to the best estimate values. We then use actuarial professional judgement and actual experience to choose which events are most appropriate to model. We define each event by determining its impact on key financial metrics, such as loss ratio, claim reserves, lapse rate, or new business rate. The stochastic model then combines the baseline projection with the possibility of these events occurring at various magnitudes using Monte Carlo simulations.

A major driver of the level of capital adequacy reserves required is the organization's ability to increase or decrease premiums without having a detrimental impact on the long term viability of the pool. We therefore developed our estimate of HealthTrust's capital adequacy reserve under two pricing scenarios:

- Under the first scenario HealthTrust is able to adjust product prices beyond the expected long term trend to correct for mispricing, high claims, or any issues that cause a financial loss. Therefore if premium rates in any one year exceed HealthTrust's obligations and HealthTrust experiences losses, they are able to implement a rate increase to a level high enough to recover losses, subject to 5% above the expected long term trend. Conversely, at the other end of the spectrum, if HealthTrust experiences gains, the rate increase is adjusted downward subject to 5% below the expected long term trend. This allows losses to be covered by future premium revenue rather than from the capital adequacy reserve, thereby reducing the required level of the capital adequacy reserve.
- In the second scenario HealthTrust is unable to adjust product prices beyond expected long term trend to correct for mispricing, high claims, or any issue that causes a financial loss. Therefore if pricing in any one year is incorrect and HealthTrust experiences losses, they are unable to implement a rate increase above the expected long term trend in the following year high enough to recover the losses. Conversely, at the other end of the spectrum, if HealthTrust experiences gains, the rate increase is not adjusted downward but rather held to the expected level. Any realized loss will be funded from HealthTrust's capital adequacy reserve, thereby increasing the required level of the capital adequacy reserve that must be held.

ASSUMPTIONS UNDERLYING THE BASELINE PROJECTIONS

The baseline model projects the capital adequacy reserve on an annual basis from a June 30, 2021 starting point. The starting point for this analysis is based on the HealthTrust financial statements for the fiscal year ended June 30, 2021.

Please note that the other assumptions in our baseline projections represent a positive business environment, meaning the premium and claims trends will allow targets to be realized each year. The following describes the assumptions in the baseline, deterministic projection.

CLAIM AND PREMIUM TREND

For the purpose of the baseline projection we used the emerging and projected claim trend assumptions from the January 1, 2022 and July 1, 2022 rate development for the January and July renewals, respectively. The overall claim trend rate (medical, prescription drug, dental, and short-term disability combined) was assumed to be 6.5% in year one, 7.5% for year two, and 5.8% in all subsequent years.

Every year some groups move to less expensive plans at renewal resulting in a reduction in claims simply due to a benefit reduction. For this projection we made a 1.4% annual reduction to claims to reflect this expected plan “buy-down”.

Within our model, the premium is set at actual premium rates for the first two years and is based on HealthTrust’s target loss ratio in future years. Therefore by definition premium trend is the same as claim trend in years 3 and beyond.

LAPSE AND NEW BUSINESS RATE

After a period of relatively flat enrollment, HealthTrust is beginning to see an increase in enrollment that is expected to continue. Therefore, we assumed an annual net increase in enrollment each year of 2%, consistent with recent experience.

STOP LOSS COVERAGE

Specific stop loss insurance protects against a high cost claim incurred by any one individual in a year. Aggregate stop loss insurance covers the situation where total claims are higher than expected. We assumed the following stop loss coverage throughout the projection period:

- Specific stop loss coverage with a \$2.5 million dollar deductible
- Aggregate stop loss coverage with a 115% attachment point.

Given the size of HealthTrust’s population, the expected value of recoveries from individuals with claims larger than the specific stop loss threshold amount is a small percent of HealthTrust’s total expected claim level in a year. As such individual high cost claims do not have a material impact on the expected outcome and therefore does not have an impact on the resulting targeted claim level.

Similarly for aggregate stop loss there is no material impact on the target claim level because the expected value of claims above the aggregate stop loss attachment point is a small percent of the total expected claims in a year.³

TARGET FINANCIAL MEASURES

In our modeling, premiums are set each year to target certain key financial metrics:

- Target medical loss ratio (claims divided by premium): 91% in the first projection year and 93% in all subsequent projection years.
- Target administrative expense ratio (administrative expenses divided by premium): 9% in the first projection year and 7% in all subsequent projection years.

³ HealthTrust does not currently purchase stop loss insurance (specific or aggregate) as the expected return from such coverage, given their size, is much smaller than the amount HealthTrust could expect to pay for the insurance. However, since HealthTrust is prohibited from retaining excess reserves because it chooses not to purchase stop loss insurance, we developed our models as if stop loss coverage was in place.

- Target profit (profit divided by premium): 0%

Administrative expenses include any change in the capital adequacy reserve due to claims trend. We assume a 1.15% interest rate assumption in all years based on HealthTrust's recent investment results.

ASSUMPTIONS UNDERLYING THE STOCHASTIC MODELING

The Monte Carlo method is a computational algorithm often employed to simulate financial systems. It relies on repeated random sampling of a deterministic model's results (in this case, our baseline projection) to provide a range or distribution of outcomes. In the stochastic portion of the model, we considered several potential events that could have an impact on HealthTrust's financial results. These events could impact claims or premium levels with varying degrees of likelihood. The stochastic model samples the results of many simulations of the deterministic model adjusted for these events and summarizes the results. We modeled the following events:

NORMAL CLAIM FLUCTUATIONS

While claims costs are generally assumed to follow a predictable trend, total claims costs possess an inherent volatility that may cause a variance between actual and expected claims. The amount of volatility generally decreases as the number of enrollees in the risk pool increases. We created a claims fluctuation probability distribution (CPD) using CPDs from Milliman's *Health Cost Guidelines (HCGs)*⁴, adjusted to reflect HealthTrust's enrollment level at June 30, 2021.

SYSTEMS CHANGE

Health insurance carriers and risk pools pay claims in exchange for premiums. The speed at which claims are paid is a function of many variables, e.g., the rate at which providers submit their claims, the carrier's computer system, etc. When the rate of claim payment processing changes or there is some error that impacts claims payments, such as incorrect payment rates for certain providers, it can have a financial impact that is not immediately obvious. For example, when the rate of claims processing changes, it can cause reserves to be miscalculated, which causes the claim level for the current year to be misstated, which can lead to mispricing in the following year.

When modeling systems change we assume two things will happen. The primary impact is on claim reserve levels. When claims payments speed up or slow down the ability to estimate the outstanding claims is compromised. This can result in an under or over estimate of outstanding claims. The secondary impact from this event is that the actual loss ratio will not meet the target. If the claim reserve is over or under estimated, the resulting loss ratio will be lower or higher than expected.

CATASTROPHIC CLAIMS

Over the course of several years catastrophic events may occur. Catastrophic events may cause an unexpected large increase in claims. These events are by definition rare. They seldom occur but when they do the results can be devastating to an organization if it is not prepared. Inclusion of this type of event in our modeling is appropriate from an actuarial perspective. We assume that this type of event will occur on average, once every 20 years, which is a reasonable assumption for these types of events. Our model assumes that HealthTrust has both specific and aggregate stop loss insurance to protect against catastrophic claim events. The impact of both the cost of this insurance and any recoveries are incorporated into our results.

MISESTIMATION OF TREND

Estimating trends in claim costs is a crucial component of premium development. It is difficult to get the trend rate exactly right and it will have an immediate impact on results. Misestimation of trend can happen for many reasons, including such things as the TPA failing to notify the organization of a fee change or high utilization of a new expensive specialty drug, even relaxation of care management protocols which can cause an unexpected increase in utilization. When trend is misestimated the ultimate claim level is higher or lower than expected when the premiums were developed. Therefore claims will be higher or lower than the targeted

⁴ The HCGs are a cooperative effort of all Milliman health actuaries and represent a combination of their experience, research, and judgment. An extensive amount of data is used in developing the HCGs and that data is updated annually. The HCGs are widely used by health insurers in setting expected medical costs.

loss ratio relative to the premium that is collected. This impact can last for several years because it is not always possible to raise premiums high enough in one year to overcome the entire value of the misestimate. The secondary impact is that claim reserves will likely be misstated because generally trend miss is not immediately apparent and therefore claim reserves may be under or over stated.

NEGATIVE MEDIA EXPOSURE

Negative media exposure will impact the organization's ability to sign up new groups and retain existing members. Negative media exposure is anything that threatens the reputation of the organization and causes groups to move coverage to another organization, for example a scandal related to wrongdoing by the leadership or a data breach resulting in the exposure of beneficiary protected information. There are three main impacts from this event:

- The primary impact is on the lapse rate. A negative event may cause some groups that are covered by HealthTrust to leave the plan. Even if their prior experience with the organization is positive, there may be political pressure within the group to distance themselves from the organization.
- The secondary impact is on the new business rate. Negative media exposure will make it very difficult to successfully enroll new groups. Groups that are considering a move to HealthTrust may be less likely to make the move after such an event.
- The final impact is on claim levels. The organization will likely see an increase in the loss ratio (claims divided by premium) because we expect the healthier groups to have an easier time leaving, as they can easily get insurance elsewhere, which results in HealthTrust's overall loss ratio increasing, above that projected during rating.

CHANGE IN COMPETITIVE POSITION

HealthTrust's products are priced to cover expected medical expenses and administrative costs. If the resulting premium is higher than premium levels charged by competitor plans, then there will likely be a decrease in membership retention. Conversely, if premiums are lower than competitor premiums, HealthTrust may see an increase in membership. This event has the same three impacts as negative media exposure described above; changes in the new business rate, the lapse rate and the loss ratio, but in the case of this event the impact could be positive or negative depending on whether the premium rate is higher or lower than competitor rates.

MISPRICING OF PRODUCTS

If premiums are set too low or too high, the organization will see the same three impacts, change in new business rate, lapse rate, and loss ratio, as described in the change in competitive position above. The impact on each of these will vary depending on the order of magnitude of the mispricing. In the case where premiums are set too low, the plan will have to cover the excess of expenses over premium from its capital adequacy reserve. At the same time, new business could increase significantly due to the low price, resulting in a much larger volume of loss-making business, putting additional pressure on the organization's capital adequacy reserve.

The attached appendix shows the probability and impact we assumed for each of the events described above. Our assumptions are based on insurance industry experience and our own actuarial judgment.

CAVEATS AND LIMITATIONS

The opinion described in this report is based on assumptions as to future events. While I relied on financial data and information provided by HealthTrust to establish some of these assumptions, HealthTrust directed Milliman to utilize whatever assumptions it believed were most appropriate and reasonable based on its actuarial training and experience in conducting its actuarial analysis. As such, Milliman chose the assumptions to use based on its professional judgment.

Milliman has developed certain models to estimate the values included in this report. The intent of the models was to estimate HealthTrust's capital adequacy reserve as of June 30, 2021. We have reviewed the models, including their inputs, calculations, and outputs for consistency, reasonableness, and appropriateness to the intended purpose and in compliance with generally accepted actuarial practice and relevant actuarial standards of practice (ASOP).

The models rely on data and information as input to the models. We have relied upon certain data and information provided by HealthTrust for this purpose and accepted it without audit. To the extent that the data and information provided is not accurate, or is not complete, the values provided in this report may likewise be inaccurate or incomplete. If more relevant data becomes available, or if HealthTrust believes these parameters do not appropriately reflect its expectations, we should revise these assumptions. A change in assumptions will change the results and possibly the related conclusions. Actual experience will differ from the assumptions chosen and as such actual results will likely differ from our estimates.

This report is intended for the internal use of HealthTrust, Inc. We understand that this report may be provided to New Hampshire regulators for their internal use. We request that we be informed of any distribution to state regulators on this basis. This report may not be provided to any other third parties without Milliman's prior written consent. In the event such consent is given, the report should be provided in its entirety. Milliman does not intend to benefit any third party recipients of its work products, even if we consent to the release of the report.

Any reader of this report must possess a substantial level of expertise in areas relevant to this analysis to appreciate the significance of the assumptions used in the analysis, and the impact of the assumptions on the illustrated results. The report is intended to provide a sense of variability and risk of insolvency under the assumptions chosen and may not be appropriate for other purposes.

Catherine Murphy-Barron is a member of the American Academy of Actuaries and meet its qualification standards to render the actuarial opinion contained in this report.

APPENDIX

**Recommended Capital Adequacy Reserve for HealthTrust
Assumptions for Events Modeled**

| Systems Change | | | |
|-----------------------|-----------------------|----------------------------|------------------------|
| Probability | Primary Effect | Secondary Effect | Tertiary Effect |
| | Reserve Miss | Loss Ratio Increase | None |
| 1% | 25% | -2% | N/A |
| 4% | 13% | -1% | N/A |
| 30% | 0% | 0% | N/A |
| 30% | 0% | 0% | N/A |
| 30% | 0% | 0% | N/A |
| 4% | -13% | 1% | N/A |
| 1% | -25% | 2% | N/A |

| Catastrophic Claims | | | |
|----------------------------|----------------------------|-------------------------|------------------------|
| Probability | Primary Effect | Secondary Effect | Tertiary Effect |
| | Loss Ratio Increase | None | None |
| 1% | 0% | N/A | N/A |
| 4% | 0% | N/A | N/A |
| 30% | 0% | N/A | N/A |
| 30% | 0% | N/A | N/A |
| 30% | 0% | N/A | N/A |
| 4% | 0% | N/A | N/A |
| 1% | 10% | N/A | N/A |

| Misestimation of Trend | | | |
|-------------------------------|----------------------------|-------------------------|------------------------|
| Probability | Primary Effect | Secondary Effect | Tertiary Effect |
| | Loss Ratio Increase | Reserve Miss | None |
| 1% | -6% | -6% | N/A |
| 4% | -4% | -4% | N/A |
| 30% | -2% | -2% | N/A |
| 30% | 0% | 0% | N/A |
| 30% | 2% | 2% | N/A |
| 4% | 4% | 4% | N/A |
| 1% | 6% | 6% | N/A |

| Negative Media Exposure | | | |
|--------------------------------|-----------------------|-------------------------|----------------------------|
| Probability | Primary Effect | Secondary Effect | Tertiary Effect |
| | Lapse Increase | Sales | Loss Ratio Increase |
| 1% | 0% | 0% | 0% |
| 4% | 0% | 0% | 0% |
| 30% | 0% | 0% | 0% |
| 30% | 0% | 0% | 0% |
| 30% | 0% | 0% | 0% |
| 4% | 10% | -30% | 2% |
| 1% | 10% | -30% | 2% |

| Change in Competitive Position | | | |
|---------------------------------------|-----------------------|-------------------------|----------------------------|
| Probability | Primary Effect | Secondary Effect | Tertiary Effect |
| | Lapse Increase | Sales | Loss Ratio Increase |
| 1% | -20% | 60% | -3% |
| 4% | -13% | 40% | -2% |
| 30% | -7% | 20% | -1% |
| 30% | 0% | 0% | 0% |
| 30% | 7% | -20% | 1% |
| 4% | 13% | -40% | 3% |
| 1% | 20% | -60% | 5% |

| Mispricing of Products | | | |
|-------------------------------|----------------------------|-------------------------|------------------------|
| Probability | Primary Effect | Secondary Effect | Tertiary Effect |
| | Loss Ratio Increase | Sales | Lapse Increase |
| 1% | -5% | -8% | 3% |
| 4% | -3% | -5% | 2% |
| 30% | -2% | -3% | 1% |
| 30% | 0% | 0% | 0% |
| 30% | 2% | 3% | -1% |
| 4% | 3% | 5% | -2% |
| 1% | 5% | 8% | -3% |