Actuarial Society of South Africa

MARKING SCHEDULE

OCTOBER 2019

Subject F201- South African Health and Care Specialist Applications

QUESTION 1

i. List the data that would need to be collected through the website in order to produce a premium quotation.

Candidates performed well in this bookwork question. Most candidates showed knowledge that medical scheme membership is a requirement to purchase a gap cover product.

Confirmation that the potential policyholder currently belongs to a medical scheme (membership certificate).

Individual product information including:

- Date of birth
- Marital status
- Gender
- Number of dependents
- Level of benefits

Quoting websites are typically aimed at individuals rather than groups, however should they cater for group products, additional information will be required regarding the employer and then information for each employee and their dependents to be covered under the policy.

Need to consider the trade-off between collecting less information for a simpler quoting process and experience, versus more data to determine accurate pricing.

[Total 3]

ii. Discuss additional risks to the insurance company that arise from the use of the price comparison website.

Candidates demonstrated a good understanding of potential risks that could impact the insurance company from the use of the price comparison website. Candidates were able to identify the insurance risks, technology risks and operational risks in the context of the market environment scored well.

This could encourage buying based on price and not on benefit leading to higher lapses or reputational risks if mis-sold. This could lead to lower future new business.

This could introduce price pressures in the market to offer the lowest price to generate sales which might reduce profit margins and could even make products loss making.

If the company aims to offer the best service to customers or better terms and conditions, it may lose out as the website may not fully reflect the terms and conditions of the product or make clear all of the additional features provided.

Not all product features can easily be reduced to website based comparisons as benefits may be non-standardised. This means that consumers may make choices with incomplete information, and that competition is reduced to only those aspects which are directly comparable (including price).

This may lead to misleading comparisons and the customer may not have purchased the best available product. Hence there are risks of accusations of mis–selling which can lead to ombudsman claims / lawsuits / regulatory fines.

There will be additional operational risks; for example, internal systems and external website systems need to be compatible, and be able to "talk to" each other, for example updating of premium rates.

There may be additional risks relating to data security.

There is a risk that the data captured by the comparison site is not sufficiently detailed or accurate.

There is a risk that premiums change upon asking additional questions, etc, for example if there is further underwriting when the customer reaches the insurer's website/sales process which the customer may not be aware of when choosing the insurer's quote.

There is a risk of selling higher than expected additional new business through the comparison site channel (compared with what would have been sold through financial advisors anyway) with consequent implications for admin capacity and/or new business strain.

There is also a risk of selling lower than expected additional new business through the comparison site channel (compared with what would have sold through financial advisors) so

the initial costs/investments of setting up the arrangement may not be recouped e.g. costs to set up system links, etc.

There is an expense risk arising of greater than expected increases in the charges levied by the price comparison website.

There is additional counterparty risk arising from reliance on the third party comparison site e.g. counterparty IT issues leading to a loss of sales and related reputational risk from association with the comparison websites if they gain bad publicity (e.g. from sales of other types of insurance).

The insurance risks may differ if the target market differs between those using comparison websites and those who would go direct to an insurer, or via a financial advisor.

There may be an increased risk of non-disclosure if customers perceive the comparison sites to be relatively detached from the insurance company.

[Total 6]

iii. Outline the points that should be made in the report

Candidates scored relatively well in this question. The question required candidates to work through a full experience review of their current book of business compared to the newly acquired business through the website channel. They needed to demonstrate an understanding of the different intermediated channels and how these could impact the experience, thus focusing attention on different elements of the portfolio's performance.

The report should set out the details of the experience investigation, including the data used, methodology and assumptions made, the results and considerations, leading to recommendations.

The experience investigation should use relevant data for sales, lapses, policyholder, claims and expense data from business sold via the online channel versus the financial advisor channel.

Data should cover the period of interest, i.e. the past year…

…and use data from prior periods to provide a basis of comparison, for the example the previous year or two depending on the size and development of the book of business.

The report should show a comparison of the overall portfolio of policies and how it has grown over time and how the introduction of the online channel has impacted this growth.

New business

For financial advisor sales and online sales, calculate the experience over the year (and relative to prior years) of the following:

Volume of sales by number of policyholders for each channel measured by number of policyholders.

Total premium income for the year (and by month) for each of the channels.

Characteristics of policyholders to understand whether the new business is within a similar target market or whether the online business has attracted a different market.

The pricing point of premiums sold via each channel to establish if the online sales are taking place at lower premium compared to policies sold via the financial advisor.

Further detail on the sales experience could be analysed for example which month during the year experienced the highest sales, the sales experience following various marketing or broker engagement initiatives and other factors that may influence sales experience during the year under review.

Expenses incurred in selling the products through each channel, including commissions and operational expenses.

For the online channel, it may be helpful to understand the number of customers following through the entire sales process and how many stop in each stage of the sales process to understand why sales are not being concluded.

Lapses

The conversion rates from leads to sales for independent brokers should be compared to the conversion rate from site visits to sales for the website channel.

Lapse experience of business sold via each channel by duration of contract.

For the online channel, it will be important to establish if contracts are lapsed shortly after being taken out which may be a proxy for mis-sold business.

Lapses by premium amount to establish if policyholders with more expensive cover sold through financial advisors are cancelling their cover and purchasing it online, if it is equivalently cheaper online.

Characteristics of policyholders lapsing their products for example by age, gender, employment group or individual.

Reasons given for lapses during the cancellation process, for example affordability issues, poor service received by the insurer, etc.

Policyholders

The analysis should include reference to the number of policyholders signed up and lapsing as well as their demographic profile for example by age, gender, group or individual, distribution channel, and any other demographic information available.

Assuming that the application process requires a medical scheme certificate to provide proof of membership, analysis could also be done by type of medical scheme, benefit option level.

Claims experience

The claims experience of each portfolio by distribution channel, policy type, policyholder segmentation (e.g. age, gender, etc), duration, group or individual, benefit option level, etc.

The claims experience analysis should show if the claims experience of policies sold through financial advisors is better or worse than that sold through the online platform, allowing for the premium (claims ratio) and duration of the cover.

Expenses

Commissions paid to financial advisors for business brought in via this channel, where applicable (expectation for online quotes and sales to be direct).

Expenses paid to the price comparison website, including commissions and any other expenses that may have been incurred in the process of making the online sale.

Marketing expenses - existing and new given the changes in distribution channels.

Once off expenses incurred in establishing the infrastructure to support sales coming through the price comparison website, for example systems developments, call centre changes and training, additional staff, changes to sales process. The extent to which these expenses are expected to recur will need to be assessed based on improvements to the initial set up, volumes expected and experience.

The payback period on any investments made will need to be taken into account.

Profitability of financial advisor versus online business

The above analysis should culminate in the analysis of the profitability of the business by distribution channel for the year under review…

…And compare the profitability to prior years.

Should the online sales channel bring in more profitable business than the financial advisor channel, it may be appropriate to recommend that they continue using this channel…

…However, taking the following considerations into account:

- Expected future profitability of the business
- Pricing point of business sold online and the extent to which this may be putting price pressure on the financial advisor business
- Lapse experience so far and how this is expected to develop into the second year of operation
- The costs of operation for the online business and how this may need to increase or decrease to accommodate future sales volumes
- Underwriting processes, requirements and decisions may be different for online business and intermediated business
- Financial advisors' perceptions of the online channel and how it may impact their relationships with policyholders with whom they may have other lines of business from the same insurer
- Reputational risks (e.g. online complaints)
- Competitive pressures (for example are other gap cover providers also selling online or via online aggregators)
- Reinsurance impacts, if any, for example if there is a reinsurer involved, the reinsurance fees may differ based on the source of business due to the quality of the business, or for different underwriting processes.

Other points to consider

The report should also include commercial and market considerations that could impact on the future business to be sold via the online channel, for example are other gap cover insurers selling through this online platform (or another).

Relationships with brokers – both for corporate and individual business and how these can be strengthened to improve sales and retention

Performance of group business versus individual business and whether it makes sense to continue to sell both lines of business online…

An online distribution channel tends to be retail focused so it may be more appropriate to sell only individual gap cover through the price comparison website and continue using independent brokers for group business…

However, the analysis of experience of group and individual business would assist to inform this decision.

[Total 11]

QUESTION 2

Describe the approach you will take to evaluate the various choices available for Hat Co and Fish Co in support of a decision by the management teams of each company. Your answer should reflect the commercial and competitive considerations for the employers as well as the current regulatory and policy environment for medical schemes.

Candidates were able to provide a good range of relevant points for this question and therefore scored relatively well.

Candidates were explicitly requested to consider the commercial context for the employers thus pointing to evaluation of the cost of subsidising the scheme and how companies that are now split may not necessarily have a mutual interest in the medical scheme. Better candidates were able to distinguish what's in the employer's best interests in this regard compared to the members' best interests.

Where information was not given that would have been useful in evaluating the situation, it was important that candidates demonstrated an understanding of how such information could influence the decision making rather than making conclusive statements.

Few candidates sufficiently covered the regulatory and policy environment for medical schemes which are an important consideration that was explicitly stated in the question.

The approach is based on an assessment of the value proposition offered by Horton Med to each employer. The value proposition is interpreted as the overall value that the employers and employees derive from participation in Horton Med. This includes value for money, i.e. contributions paid relative to benefits available and benefits claimed…

…And quality of service received by the scheme members, both for healthcare delivery and non-healthcare delivery including service standards and member experience.

Horton Med may provide brand value for employees working for the company as an employee benefit for existing employees and assist to attract new employees / retain existing employees.

Subsidies provided by the employer to keep the scheme – currently provided to active employees and retirees, assisting to enable employees to afford the scheme and thus make it compulsory, limiting anti-selective entrants and exits.

The relative differences of each company's employees demographic profile and their relative needs separately, compared to combined to be able to assess the value proposition of Horton Med for each group.

Membership

The number of employees in Hat Co is significantly smaller than Fish Co, therefore Fish? Co comprises a larger proportion of the membership of the scheme and the influence of their profile is therefore more significant.

Number of employees in Hat Co and Fish Co (separately and combined) are both very small compared to the open medical schemes considered, and below the 6,000 member threshold required to register a new scheme with the Council for Medical Schemes.

The employees in both Hat Co and Fish Co are relatively young with 5 years difference between them. The age profile of Hat Co is older however it is not clear whether this is due to additional pensioners (if these can be allocated to the underlying employer) or due to an overall older group of employees.

Relative to the open schemes, Fish Co is younger than all of them, therefore implying a lower claims cost, all else equal. Hat Co employees average age is more in line with the open schemes average age.

The number of retired members is not given, however because there is a post retirement subsidy in place, it can be expected that retired members stay on the scheme and therefore raise the average age.

The amount of the subsidy is also not given, therefore it is not known whether the subsidy is a significant portion of the contribution. If so, it would most likely lead to higher retention rates of retired members.

The family size of Hat Co employees is larger than Fish Co employees. with larger families. The types of dependants, adults compared to children, may differ significantly between the two companies which would impact their healthcare needs and their expected claims.

In comparing the open medical schemes to Horton Med, it will be important to compare the nature of employment of Hat Co and Fish Co (mostly manufacturing type businesses) to the business that predominate the open schemes as this may influence the underlying claims risks, for example exposure to chemicals and physical labour versus office environment.

Geographical concentration is important to assess to understand if there are particular factories with large numbers of employees or if employees are spread around the country.

Geographical concentration is also a factor to consider if there are provider networks being used in the various regions, and the proximity between employees, the workplace and medical professions in the network(s) would be important.

Differences in incomes between the two employers and how these employees are currently spread by income band on the income banded benefit option.

It will not be possible to compare to incomes in the open scheme market as this information is not available except for some of the so called lower income benefit options where contributions are income rated.

The existence of pensioner members is important to consider as these members may not necessarily be easily allocated to an underlying company, so if there is a split, it may be difficult to determine which pensioners move out and which stay.

The existence of the post retirement subsidy for retired members remaining on Horton Med needs to be considered and whether the subsidy will continue to be paid should there be migration to an open scheme. Similarly, the subsidy for active members should be considered.

Comparative contribution tables

Number of benefit options for Horton Med given nature of employees, and compared to open schemes and the choice available to members.

Income rated benefit options – scheme 1 does not offer an income rated benefit option, so employees within lower income bands may be negatively impacted if there is a move to this scheme as they would be paying the 'full' contribution for each option. This is an important consideration depending on those who would be impacted by a significant contribution increase on a non-income banded option.

Contribution structure for each option and each scheme – for example the existence of income rated options to cater for lower income earners is important as the scheme is compulsory for employees. Whether the contribution tables differ in structure in terms of charging for dependants i.e. whether they are PAC or M+.

Contribution increases

Indexed contribution increases provide an overall view of contribution increases for that particular benchmark option over a period.

Choice and comparability of benchmarked benefit option needs to be considered as this may not necessarily be the options that most members would select on migration.

It would be important to consider contribution increases on a per option level as some options may have experienced higher increases than other options with varying underlying drivers of these contribution increases.

For example, are the contribution increases driven by anti-selective membership movements for that option, membership profile, supply side factors or a combination of these factors.

A review of changes in option selection and membership mix over time would help to isolate where the option preferences among members have been more favourable and how this has influenced the option mix.

The expectation for future contribution increases on an option level and overall level.

Mitigating actions put into place to manage contribution increases currently and in future.

Are retirees defaulted to the lowest income band to enable affordability of the contributions in retirement?

Benefits

Understand benefit structure of each of the benefit options, for example comprehensive option and PMB option to cater for different levels of healthcare needs and affordability, or are they more similar.

Use of networks to deliver care, for example in the income rated option and how the geographical distribution of these providers matches the employees within each of the respective workforces.

Cost to deliver benefits on each option, for example per life per month (PLPM) figures for in and out-of-hospital benefits and total benefits.

Availability of a savings account facility – this may be more appealing for some membership groups over others and influence choice of benefit option as well as out of hospital expenditure behaviour.

Benefit changes made in the past and how these have impacted the PLPM figures.

Benefit option comparability to open schemes – conduct a thorough comparison of the benefit structures, benefit limits and other factors such as co-payments, networks, etc to understand which benefit options are most closely resembling Horton's options and how these differ.

Ex-gratia policy for Horton Med is a consideration as this would need to be compared to any such available in the open medical scheme market. Although some open schemes offer ex-gratia, they may not be as generous or paternalistic as on restricted schemes. Employees could potentially be worse off if they have or intend to apply for benefits under the ex-gratia process and budget.

Non healthcare expenses

Compare non healthcare costs across schemes to assess how much of the contribution income goes towards paying claims.

This may be influenced by the nature of the administration structures in place, for example self-administered versus administered by a third-party administrator and the underlying fee structures of each.

Nature of managed care agreements in place and how these may impact the nature of delivery of care to members, particularly those registered on chronic disease programmes.

Other non-healthcare expenses, for example do the employers pay the trustees for their services or do they fulfil these as employees of the company.

Reserves

The Rand amount level of the reserves and how these have been changing over time, for example have the reserves been growing due to better than budgeted (or in line with budget) experience, or have they been stable reflecting accurate pricing. Alternatively, have the reserves been decreasing due to losses being incurred and if so what are the underlying reasons.

Changes in the percentage reserve value (reserves as a % of gross contribution income) over time need to be considered, taking into account underlying changes in the contribution income levels which would impact the overall measure.

High reserve level for the restricted scheme suggests that the scheme has been making net surpluses over a period which has enabled the reserves to grow to such a level.

What is the reserve per member and how does this compare to open schemes

What is the notional reserve allocation per member based on the split of employers to understand if one of the employers has potentially contributed more – although on dissolution of the scheme reserves would be distributed equally, or on amalgamation reserves would be transferred in totality.

Subsidy policy

The Horton Group provides subsidies to both active and retired employees which impacts the affordability of the contributions.

With the split of the group, presumably the companies will continue to provide such a subsidy to active and retired employees, depending on the subsidy policy and terms of employment…

… however it should be established if this subsidy (particularly for active employees) will continue to be paid should the employees move to an open medical scheme.

On restricted schemes, the employer liability is more directly known as there are generally fewer benefit options, and in some cases employees are placed on certain options based on their level. Open schemes present more uncertainty to the subsidising employer.

The impact of the changes on the PRMA liability for the company as this represents a direct cost impact in the form of current annual subsidy payments and an impact to the balance sheet for the liability.

Structure of the subsidy, currently at 50% for active employees, may need to be reviewed to determine what this could purchase in the open market, and the exposure that the company faces should employees select more comprehensive options than is available through the Horton Med.

This would increase the value of the liability (and similarly decrease, should they select lower cost options) if their post-retirement subsidy promise is the 50% but would not be impacted if this promise was based on the fixed Rand subsidy currently provided to retirees.

Other considerations for moving to an open medical scheme

Employers would be subject to the decisions of the open medical scheme and are unlikely to have much or any say in the open scheme operations, pricing, benefit design and servicing.

Potential improvements to the value for money received by the employer and members.

There would be more of an arm's length arrangement for the delivery of medical scheme benefits, this could be positive if Horton Med delivered relatively poor quality (of care and/or services) or a negative if the quality delivery was high. These two aspects would need to be assessed.

The open scheme, by virtue of their larger sizes may have more preferential healthcare and non-healthcare arrangements in place and therefore may be able to deliver services more cost effectively.

The employer would no longer have the burden of managing the scheme and could free up the employer trustees to focus on their core jobs, however this is usually marginal.

Employee value proposition changes, employer would need to consider how to position this employee benefit to existing and new staff.

Choice of open scheme

Size of Hat Co and Fish Co relative to the open scheme (may have more influence in smaller scheme) however the numbers of employees at each employer is quite small in comparison to all schemes suggesting that any influence is likely to be relatively small, unless the membership is mainly made up of individual members.

All open schemes have an older age profile than Horton Med suggesting that Horton's contributions would be higher than in Horton Med, all else being equal.

Growth prospects of the open schemes (and related ability to offset ageing contribution increases)

Industry alignment, are any of the open schemes aligned to a particular industry in terms of its target market, could assist to mirror offering of Horton Med so employees have a similar experience.

Benefit comparisons and suitable mapping of employees to each option to establish that the options provide similar or comparable benefits to members, or enhance the choice available to them to be able to select suitable options for their needs and budget.

The resulting contribution mapping from the benefit mapping above to ensure affordability adequately catered for and identifying those members that are significantly impacted

Quantify the impact to the company / companies of potential benefit option changes and thus higher / lower contributions to be subsidised.

Contribution to benefit value for money of each benefit option to identify value differential for Horton Med versus open schemes.

Underwriting concessions – should membership move as a group as a result of the employer's choice to change schemes, these are likely to be waived by the open scheme, however this is not guaranteed and should be explored. Would this be done as part of a Status D membership change where the open medical scheme cannot apply underwriting?

Compulsory nature of medical scheme cover – would the employers continue on this basis in the open scheme environment, particularly if contribution increases are higher than in the restricted scheme.

Would the employer want to give the employees the option of more than one medical scheme to provide more options i.e. split risk and how would this impact on the underwriting that could be applied?

Implications of one employer group leaving and another staying

Would the scheme be sustainable with only one group – possibly only with the larger group given the relatively small sizes of each group of employers.

Would need to assess the size, demographic profile and option selection for each company on its own to determine the actual impact, however the small employer group is very small making it very unlikely to be a sustainable arrangement should the larger employer group leave.

Would need to assess the growth of members from each company which will depend on the growth strategy for each company in terms of new hires and retention policies.

Impact on tariff agreements – the larger (total) scheme may have some tariff agreement advantage over a smaller scheme, however the size differentials may be negligible in impacting on tariffs.

The costs of running a smaller scheme, could become more expensive on a per member per month basis, with implications for the employer in managing the scheme.

Current reserves would remain within Horton Med should one of the employers decide to leave the scheme and move to an open medical scheme.

There could be discussion for a partial or proportional transfer of reserves if all parties were willing.

Creating two separate restricted employer based schemes

CMS requirement for minimum of 6,000 principal members to register a scheme. Neither employer has sufficient numbers of employees to meet this criteria and therefore this would not be a viable option to pursue…

… Unless the number of retirees attributable to Fish Co exceeds 900…

Which is a significant pensioner ratio for the scheme to carry.

Would need to consider the financial viability of a smaller scheme and Hat Co moving to an open scheme arrangement.

Regulatory and policy considerations

The drive towards a National Health Insurance system and a focus on medical scheme consolidation by the Regulator, means that consideration should be given to whether it is

strategically sound to retain a restricted scheme, as once it is dissolved it may be very difficult to re-establish one.

Schemes with less than 6,000 members are under scrutiny by the Council for Medical Schemes and although this would not impact Horton Med at this stage, should one of the employers exit the scheme, it would be below this threshold and therefore subject to interrogation for amalgamation.

Alternatives to medical scheme cover such as primary care are becoming more prolific with the demarcation regulations having been finalised some years ago, presenting alternative choices for lower income employees in particular.

Should the recommendations of the Competition Commission Health Market Inquiry result in price regulation of tariffs, any competitive advantage due to size in terms of larger schemes negotiating lower tariffs may cease, in which case the larger open schemes may have less competitive advantage.

Proposed regulation of medical schemes that would drive consolidation of options as well as schemes would negatively impact on the ability of open medical schemes to compete for younger and healthy lives, implying that Horton Med may be better placed to continue to offer value for money to the employees.

[Total 20]

QUESTION 3

The proposed solution for Question 3 below outlines a detailed approach with various relevant points available for this question. Candidates are not expected to produce all the information outlined here to gain full marks for the question.

Candidates were not expected to produce the graphs and tables given in the solution to gain full marks for the question, however this detail demonstrates the breadth of points that were available and serves as a revision aid for future candidates who wish to attempt this subject.

Candidates were generally able to provide sufficient descriptions of a retrospective analysis, but most struggled to describe a prospective analysis in sufficient detail and with reference to ways in which future expected high cost claims could be modelled.

Many candidates struggled to interpret the financial information provided and simplify it to the extent that they could tackle the question sufficiently. Marks were awarded where relevant calculations were given as well as where suitable explanations were given, even if these were not accompanied by calculations.

Overall, there was a tendency for candidates to rely on bookwork knowledge and not real application to the scenario presented.

The appointed Healthcare Actuary has to comply with Standard of Actuarial Practice (SAP) 302, which sets out the considerations that bear to an actuary's professional work in advising medical schemes on reinsurance.

The purpose of SAP 302 is intended to describe a minimum level and quality of actuarial attention that is necessary to ensure that a reinsurance arrangement is appropriate.

The following outlines the considerations as per SAP 302:

The actuary needs to consider that a proposed reinsurance agreement is appropriate in that the agreement is in the interests of the medical scheme and its members

Given that the Scheme has experienced an increasing burden of high cost hospital cases over the last few years (i.e. 2015 to 2018), an appropriate reinsurance agreement could be in the best interest of members if the premium is appropriately priced…

…such that the reinsurer does not extract unreasonable profits from the Scheme in the long run (i.e. the reinsurance premium consistently and significantly exceeds the reinsurance claim recoveries).

Further investigation needs to be done to understand why this burden has increased over the years, e.g.

- Investigate if the rate of membership growth is aligned with the rate of increase in high cost hospital cases (i.e. determine if the admission rate per 1 000 lives for high cost hospital cases is relatively stable); or

- Investigate if the increased rate of high cost hospital cases is resulting from the existing membership base; or

- Investigate if the high cost hospital cases are for new members, and if so, check if underwriting for pre-existing conditions was waived; or

- Investigate if any of these high cost hospital cases are re-admissions;

- Investigate which component of the in-hospital claim is driving the increased cost burden: the hospital bill (such as the fees for the ward, theatre, equipment, ethical, surgicals, etc.) or the related cost for the hospital admission (such as the fees for the medical professionals).

The relative merits of the different types of reinsurance quotes (i.e. excess of loss vs quota share) needs to be considered in the context of the expected membership size in the future…

… as quota share reinsurance arrangements are best suited for a small membership base while claims volatility is high…

…but the membership experience of the scheme is showing consistent growth year-on-year…

…which strengthens the relative argument for an excess of loss reinsurance arrangement.

The reinsurance benefit pay-out is not clear whether is applies per policy (family) or per life, which needs to be clarified with the reinsurers. Furthermore, it should clarify if there are additional per beneficiary or per family limits per annum.

The actuary needs to consider that a proposed reinsurance agreement is appropriate in that the agreement is appropriately priced

This can be assessed by means of a prospective and retrospective analysis.

The actuary should undertake a quantitative analysis to determine the impact of the reinsurance contract on the healthcare result and solvency level of the medical scheme.

This should include an analysis under a number of scenarios and the associated likelihood of each.

The actuary should disclose and justify the methodology and assumptions employed.

The actuary needs to consider that a proposed reinsurance agreement is appropriate in that the agreement is appropriately priced – A Retrospective Analysis

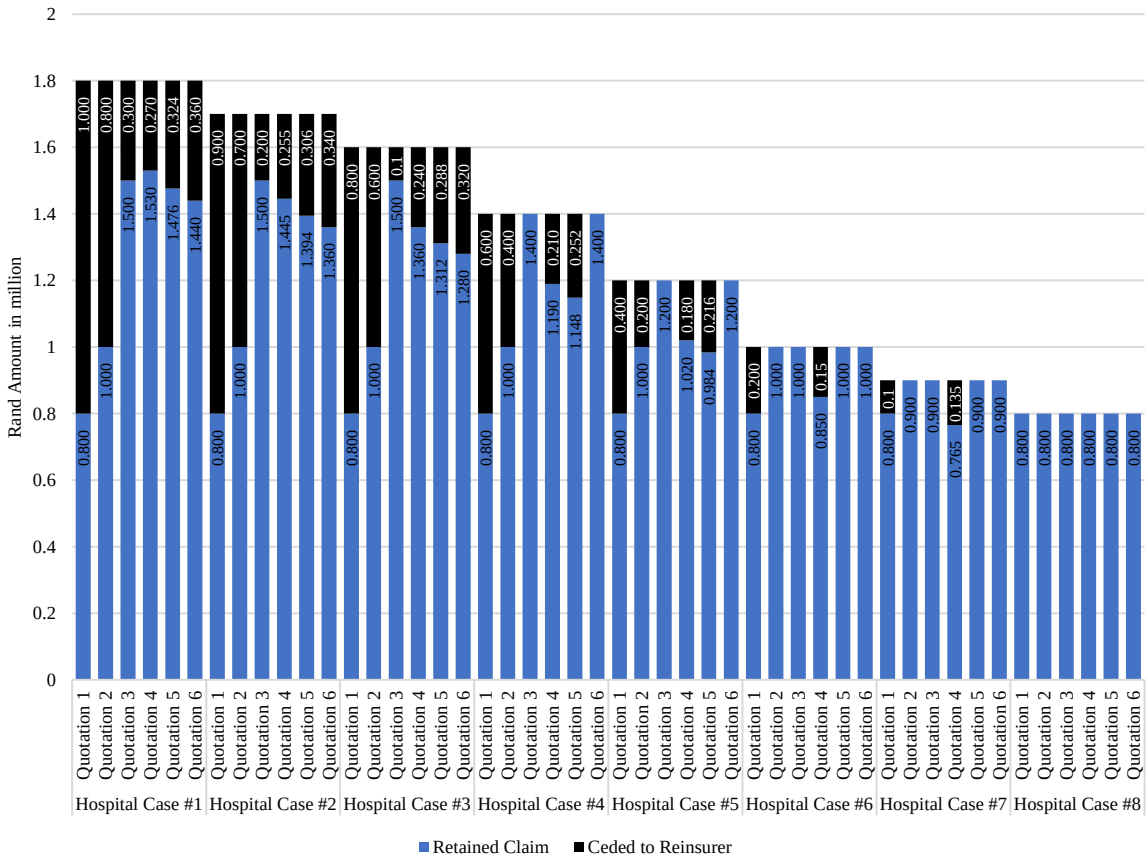
A retrospective assessment can be performed by applying the proposed reinsurance agreements to the high cost hospital cases of the last few benefit years as if these agreements were in place at those points in time…

…to determine the claims split between the medical scheme and reinsurer…

…as well as how the reinsurer's claims pay-out weighs up relative to the reinsurance premium…

…and how this would have affected the Statement of Comprehensive Income.

For example, each of the reinsurance quotations can be applied to the high cost cases in the 2015 benefit year as follows…



Such an analysis could determine whether the Scheme could have benefited from the quoted reinsurance agreements in the past, which could act as a guide whether the Scheme could benefit from such arrangements in the future.

The figure above illustrates that the Scheme would have benefited most (based on the most claims ceded to the reinsurer) from Quotation 1 had this agreement been in place in the 2015 benefit year (without considering the reinsurance premium).

However, appropriate inflationary adjustments would be required, for example:

- The claim amounts could be inflated to 2020 monetary terms and then apply the reinsurance quotation attachment points (which are assumed to be quoted in 2020 monetary terms); or

- The reinsurance attachment points (which are assumed to be quoted in 2020 monetary terms) could be discounted to, say, the 2015 benefit year while not applying any adjustments to the claim amounts related to the 2015 benefit year.

The actuary needs to consider that a proposed reinsurance agreement is appropriate in that the agreement is appropriately priced – A Prospective Analysis

A prospective assessment can be performed by applying the proposed reinsurance agreements to the projected high cost in-hospital cases expected to occur in the 2020 benefit year. In order to project high cost in-hospital cases for the 2020 benefit year, the method of stochastic simulation can be used, separately for…

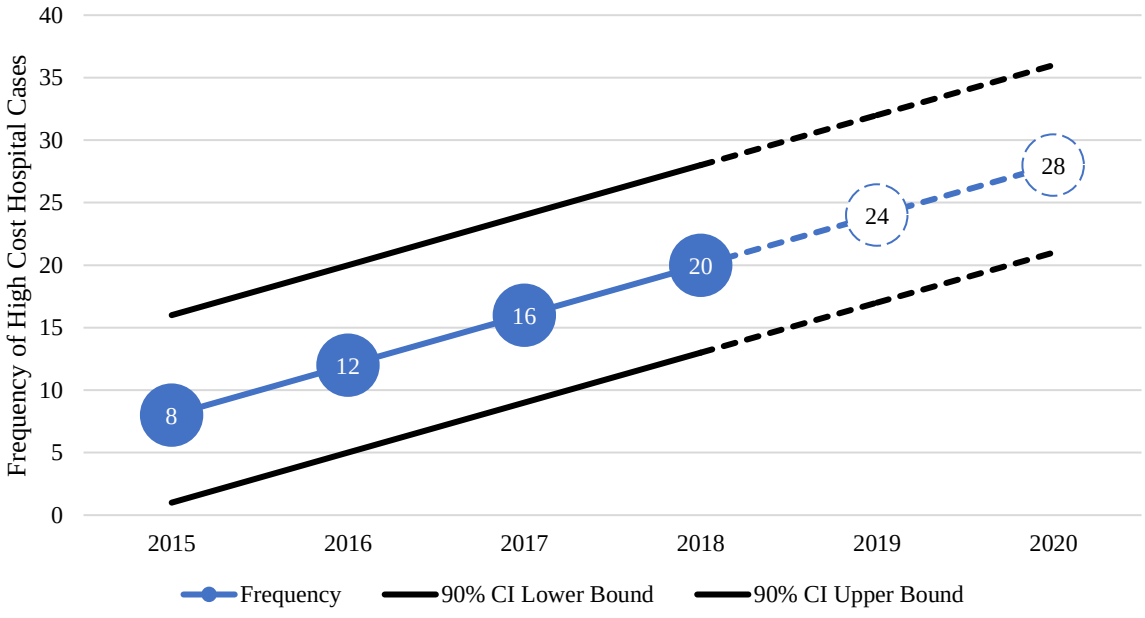
…a frequency distribution (to project the number of high cost hospital cases)…

…and a claims severity distribution (to project the claim amount of each high cost hospital case).

Frequency Distribution

The prospective analysis should include a construction of the frequency distribution to estimate the expected number of high cost hospital cases.

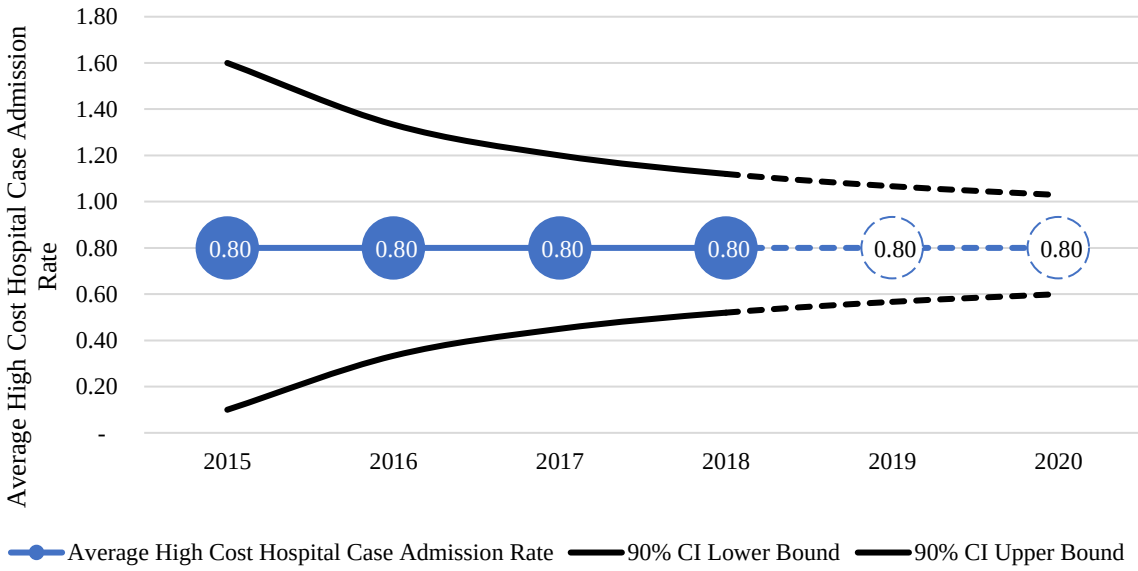
A high level analysis of the historic number of high cost hospital cases could be performed to obtain a crude estimate of the future number of high cost hospital cases, as follows.



[Please note that candidates are not expected to produce this graph; suitable interpretation of the numerical information provided should be sufficient]

However, the last mentioned analysis does not explicitly take account of the change in the membership pool size over time.

A reasonability check would include to analyse the high cost hospital *admission rate* over time so as to take account of the change in the membership pool size over time…



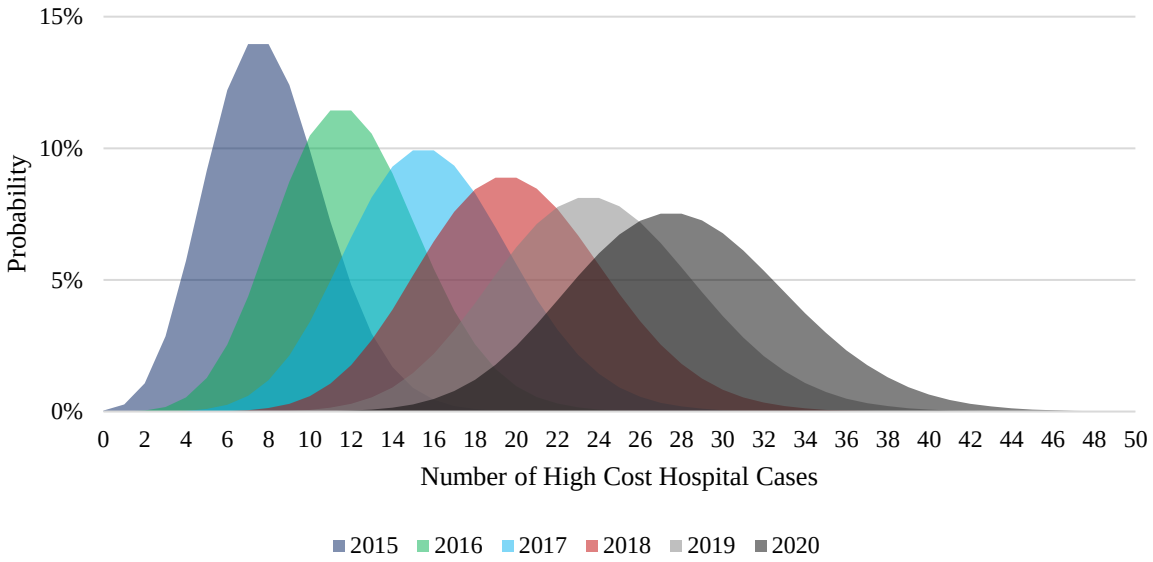
[Please note that candidates are not expected to produce this graph]

The last mentioned analysis is able to determine that the increase in the high cost cases is not due to an increasing disease burden, but rather an increase in the membership pool with an unchanged admission rate (i.e. constant disease burden).

A sensitivity analysis could therefore include a specific test for the sensitivity in the number of high cost hospital cases for small changes in the disease burden, i.e. high cost hospital case admission rate.

A potential issue that the actuary might have with this assessment is that the 2019 claims data is not yet fully run off at the time of assessment, while the objective is to obtain an estimate of the 2020 claims experience, which requires the actuary to estimate both the 2019 and 2020 claims experience.

Using the Poisson distribution, for example, as a proxy for the high cost in-hospital case frequency estimator could produce the following frequency distributions based on the available data.



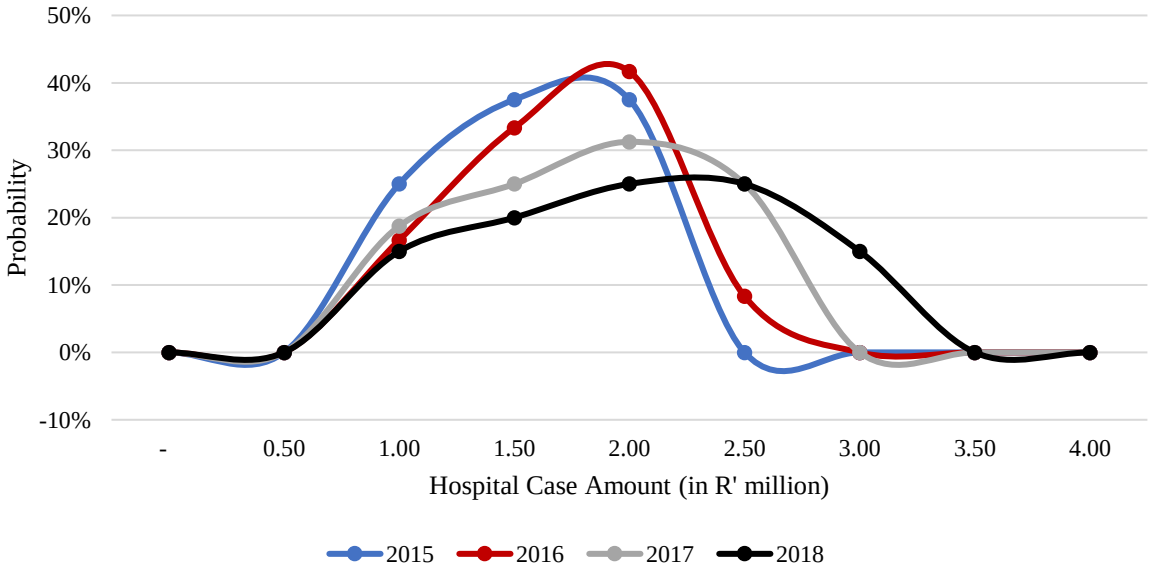
[Please note that candidates are not expected to produce this graph]

A large number of random samples could be drawn from these frequency distributions to estimate the number of high cost in-hospital cases.

An average of these random samples should approximately be 28 high cost in-hospital cases in the 2020 benefit year based on the distributions illustrated above and assumed membership growth.

<u>Severity Distribution</u>

The prospective analysis can be supplemented with a distribution of the severity of high cost in-hospital cases for each benefit year separately based on the provided data, e.g.



[Please note that candidates are not expected to produce this graph]

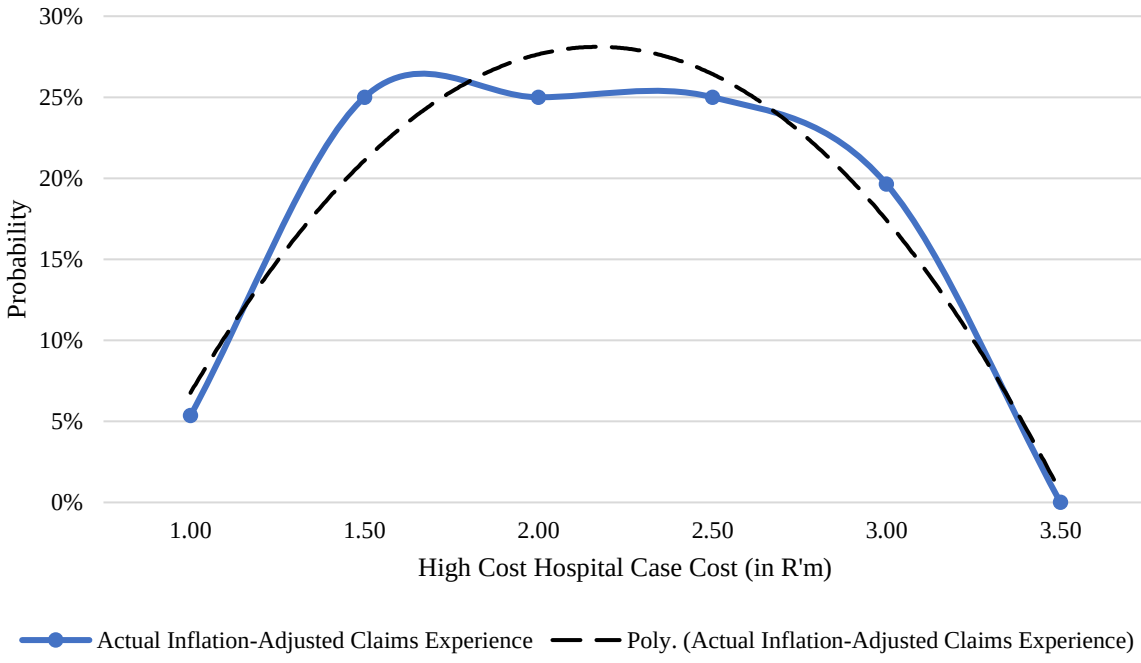
Such an analysis could indicate the likely change in the severity distribution of the high cost hospital cases over time.

However, by splitting the data for high cost hospital cases by benefit year provides a small volume of data within each benefit year, and introduces statistical volatility.

Another approach (to overcome the lack of data volume) is to inflation-adjust all the claims from each benefit year respectively to 2020, and group the data points together to optimise the data volume…

…which can then be used to determine a crude distribution of the severity of high cost claim amounts.

Then a smoothed or fitted distribution could be obtained, as shown below.



[Please note that candidates are not expected to produce this graph]

Then a stochastic modelling exercise can be performed to estimate the high cost in-hospital claims experience in the 2020 benefit year based on a large number of simulations…

…where each simulation estimates the number of high cost hospital cases in the 2020 benefit year, and a claim amount for each high cost hospital case, for example…

	Simulation										
High Cost Hospital Case	**#1**	**#2**	**#3**	**#4**	**#5**	**#6**	**#7**	**#8**	**#9**	**#10**	**…**
#1	3.0	2.5	2.4	2.1	1.5	1.8	1.1	2.4	1.0	1.5	
#2	2.5	1.5	2.4	2.1	2.5	1.1	1.1	2.4	1.5	2.5	
#3	1.5	2.0	1.4	1.6	3.0	2.3	2.1	1.4	2.5	1.0	
#4	2.5	1.0	2.4	1.6	2.5	1.8	2.6	1.9	2.5	0.8	
#5	3.0	1.5	1.2	1.1	2.5	2.8	0.9	1.4	2.0	1.0	
#6	2.5	2.0	1.4	2.1	3.0	2.3	1.6	1.9	1.5	1.0	
#7	2.5	1.5	1.4	1.1	3.0	2.8	1.1	2.9	1.0	1.5	
#8	2.0	0.8	2.4	2.6	2.5	1.8	1.6	1.4	1.5	2.5	
#9	2.5	2.0	1.9	0.9	2.5	2.8	1.1	1.9	1.0	1.0	
#10	2.5	1.0	1.2	2.6	3.0	2.3	1.6	2.9	1.5	0.8	
#11	2.5	1.0	1.2	1.6	2.0	1.8	1.1	1.9	0.8	1.0	
#12	2.5	1.0	1.4	2.6	1.5	2.3	2.1	1.9	1.0	2.0	
#13	3.0	2.0	1.4	2.6	2.0	1.1	1.6	1.4	1.5	1.0	
#14	2.0	1.5	2.4	1.6	1.5	2.3	2.1	1.9	2.0	1.0	
#15	2.5	2.5	2.4	2.6	2.0	2.8	2.6	2.4	1.5	2.5	
#16	3.0	2.0	2.9	1.6	2.5	2.3	2.1	1.2	2.5	2.5	
#17	2.0	2.0	2.4	2.1	1.5	2.3	2.1	1.9	1.0	2.0	
#18	2.0	2.0	2.4	2.6	3.0	1.3	2.1	1.4	2.0	2.5	
#19	2.0	1.0	1.9	1.6	2.5	1.3	2.6	1.4	2.5	2.5	
#20	2.0	0.8	2.4	1.6	2.5	1.3	1.1	2.4	2.0	1.0	
#21	3.0	1.0	2.9	0.9	2.5	1.3	1.6	2.9	2.5	1.5	
#22	3.0	1.0	2.4	0.9		1.1	2.6	2.4		0.8	
#23	2.0	2.5	2.4	1.6		1.8	2.1	2.9			
#24	1.5	1.0	2.4	1.1		2.8	1.1	2.9			
#25	2.0	1.0	2.4	2.1		2.8	1.6	1.4			
#26	2.0	1.5	2.4			2.8	1.6	1.9			
#27	2.0	1.5	2.4			1.3	2.1	1.2			
#28	3.0	1.0				1.3		2.4			
#29	2.0	1.0				2.3		1.4			
#30	2.0					2.8		2.4			
#31	2.5					1.3		1.9			
#32	1.5					1.3		1.4			
#33	3.0					1.3		2.4			
#34	3.0							1.9			
#35	2.0							1.4			

[Please note that candidates are not expected to produce an illustration of a simulation exercise]

The Actuary should perform reasonability checks for each simulation to confirm the output is credible for the purpose at hand, for example:

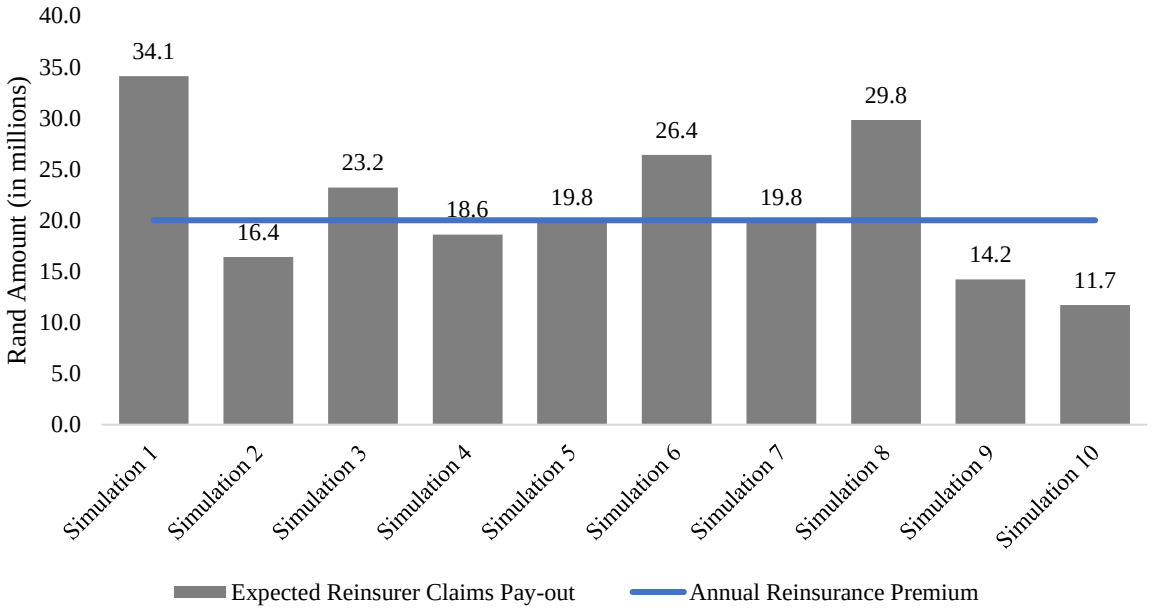
- Check that the simulated number of high cost cases is in a reasonable range, i.e. between 20 and 40 based on the estimated confidence interval;
- Check that the minimum of all the simulated high cost hospital cases amounts is higher than R 800 000;
- Check that the average of all the simulated high cost hospital cases amounts is approximately R 2.1 million;
- Check that the maximum of all the simulated high cost hospital cases amounts is lower than R 3 000 000;

For each of the simulated high cost cases, the reinsurance quotation can be applied. For example, the Quotation #1 from RSA Re could be applied to the simulated claims above to estimate the **Reinsurer Claims Pay-out** as follows:

	Simulation										
High Cost Hospital Case	**#1**	**#2**	**#3**	**#4**	**#5**	**#6**	**#7**	**#8**	**#9**	**#10**	**…**
#1	1.0	1.0	1.0	1.0	0.7	1.0	0.3	1.0	0.2	0.7	
#2	1.0	0.7	1.0	1.0	1.0	0.3	0.3	1.0	0.7	1.0	
#3	0.7	1.0	0.6	0.8	1.0	1.0	1.0	0.6	1.0	0.2	
#4	1.0	0.2	1.0	0.8	1.0	1.0	1.0	1.0	1.0	0.0	
#5	1.0	0.7	0.4	0.3	1.0	1.0	0.1	0.6	1.0	0.2	
#6	1.0	1.0	0.6	1.0	1.0	1.0	0.8	1.0	0.7	0.2	
#7	1.0	0.7	0.6	0.3	1.0	1.0	0.3	1.0	0.2	0.7	
#8	1.0	0.0	1.0	1.0	1.0	1.0	0.8	0.6	0.7	1.0	
#9	1.0	1.0	1.0	0.1	1.0	1.0	0.3	1.0	0.2	0.2	
#10	1.0	0.2	0.4	1.0	1.0	1.0	0.8	1.0	0.7	0.0	
#11	1.0	0.2	0.4	0.8	1.0	1.0	0.3	1.0	0.0	0.2	
#12	1.0	0.2	0.6	1.0	0.7	1.0	1.0	1.0	0.2	1.0	
#13	1.0	1.0	0.6	1.0	1.0	0.3	0.8	0.6	0.7	0.2	
#14	1.0	0.7	1.0	0.8	0.7	1.0	1.0	1.0	1.0	0.2	
#15	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	0.7	1.0	
#16	1.0	1.0	1.0	0.8	1.0	1.0	1.0	0.4	1.0	1.0	
#17	1.0	1.0	1.0	1.0	0.7	1.0	1.0	1.0	0.2	1.0	
#18	1.0	1.0	1.0	1.0	1.0	0.5	1.0	0.6	1.0	1.0	
#19	1.0	0.2	1.0	0.8	1.0	0.5	1.0	0.6	1.0	1.0	
#20	1.0	0.0	1.0	0.8	1.0	0.5	0.3	1.0	1.0	0.2	
#21	1.0	0.2	1.0	0.1	1.0	0.5	0.8	1.0	1.0	0.7	
#22	1.0	0.2	1.0	0.1		0.3	1.0	1.0		0.0	
#23	1.0	1.0	1.0	0.8		1.0	1.0	1.0			
#24	0.7	0.2	1.0	0.3		1.0	0.3	1.0			
#25	1.0	0.2	1.0	1.0		1.0	0.8	0.6			
#26	1.0	0.7	1.0			1.0	0.8	1.0			
#27	1.0	0.7	1.0			0.5	1.0	0.4			
#28	1.0	0.2				0.5		1.0			
#29	1.0	0.2				1.0		0.6			
#30	1.0					1.0		1.0			
#31	1.0					0.5		1.0			
#32	0.7					0.5		0.6			
#33	1.0					0.5		1.0			
#34	1.0							1.0			
#35	1.0							0.6			
Total	**34.1**	**16.4**	**23.2**	**18.6**	**19.8**	**26.4**	**19.8**	**29.8**	**14.2**	**11.7**	

[Please note that candidates are not expected to produce an illustration of a simulation exercise]

After the simulation exercise is performed, the Actuary will be in a position to compare the estimated Reinsurer's pay-out to the annual premium quoted by the reinsurer, as follows:



[Please note that candidates are not expected to produce this graph]

And determine a probability that the reinsurer's pay-out will exceed the quoted premium.

For example, using the snapshot analysis above, the estimated reinsurer's pay-out exceeds the annual premium in 4 of the simulated 10 scenarios, which provides a crude probability of 40% that the reinsurer's pay-out will exceed the premium.

This probability will converge to a true probability as the number of simulations are increased (e.g. 1 million simulations).

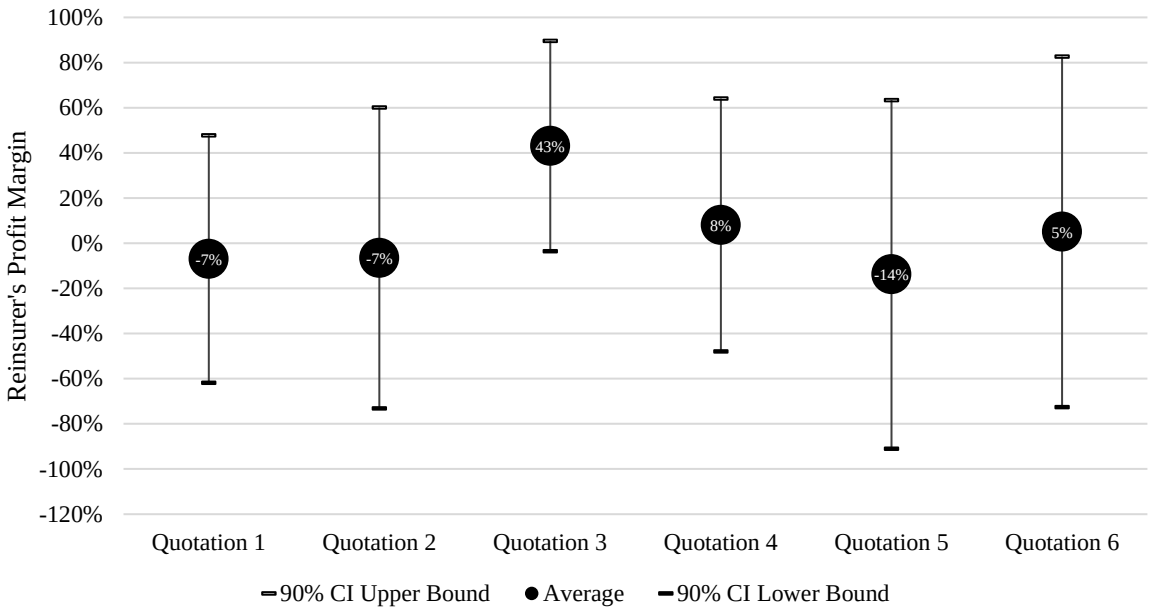
The Actuary should, inter alia, base his/her recommendation on the Reinsurance quotation that has the highest probability that it will operate in the best interest of the Scheme, i.e. the reinsurer's claims pay-out should exceed the premium.

However, this does not take account of the magnitude of the recoveries…

Another analysis could entail estimating the reinsurer's profit margin in each year of cover…

…Where the reinsurer's profit margin is estimated as

(Reinsurance Premium) / (Reinsurance Claims Pay-Out) – 1



[Please note that candidates are not expected to produce this graph]

Such an analysis could provide a "quick and dirty" indication of reasonability of the quoted premiums, e.g. Quotation 3 appears to be significantly overpriced based on this analysis…

But such an analysis would be dependent on the number of simulations used…

…And the level and shape parameters to construct the frequency and severity distributions.

Such an analysis should be supplemented with a longer term projection of these profit margins based on the expected premium escalations.

Given the low occurrence of high-cost hospital cases, the data of this Scheme alone is unlikely to provide a credible basis for the estimation of the frequency and severity of such cases.

The actuary will need to supplement such an analysis with additional data sources - perhaps from internal experience on similar contracts, or industry data, or appropriate benchmarks or publications.

The main question from a trustee's perspective is to determine whether entering into the contract is in the best interests of members.

The "value for money" purchased through a reinsurance contract should be evaluated with reference to the reduction in variability of projected future results rather than the absolute levels of expected financial results.

This can be demonstrated by modelling an aggregate loss distribution, or even a probability of ruin, for the Scheme with and without reinsurance.

With reinsurance, the distribution is likely to have a smaller variance, even though the net expected expenditure to the scheme will be higher than without reinsurance.

So the probability that the scheme will fail to meet statutory solvency targets without reinsurance should be demonstrably higher than with reinsurance.

The Scheme will have to price to recover the expected cost of reinsurance from its contribution income.

And this may be seen as an onerous requirement.

But this cost should be weighed against the certainty that it will be able to comply with the regulatory targets.

The actuary needs to consider that a proposed reinsurance agreement is appropriate in that the agreement is appropriately priced – Other considerations

Is the scheme an open or restricted membership medical scheme? Generally, due to open enrolment and restricted underwriting, open schemes face greater risks of adverse claims fluctuations. Restricted membership schemes are less exposed with closed schemes being the least exposed. There may be exceptions to these relative risk classifications.

What is the risk profile (in terms of age/gender/income levels, etc) of the scheme currently and is there a risk that this might change in the future resulting in adverse fluctuations in claims experience? What levels of membership turnover have been experienced?

New Products or significant changes to existing products. It may be prudent to reinsure a larger proportion of the underlying risk in respect of a new product or when a product has been significantly altered. A relatively large risk transfer may be appropriate until the experience on the product has settled and the scheme has a clearer understanding of the underlying risks. This is also relevant to a large scheme introducing a new product onto the market.

Is the scheme intending to actively market for growth or acquire new membership? In the current environment, it is difficult to predict the expected risk profile of new members, which in turn creates further uncertainty in expected claims experience. This will also be a function of marketing strategies and target markets. Generally, the greater the expected new business growth, the greater the need for reinsurance.

Are new markets being targeted where little is known about the expected claims experience?

What has been the trend in claim patterns and are these trends likely to continue into the future?

Currency Risks. What is the exposure to imported inflation through items such as medication and technology?

What steps have been taken to mitigate risks to the scheme? This may include current reinsurance contracts, underwriting practices and other risk management programmes.

How will readmissions be treated?

How is cost per in-hospital case defined? For example, is it based only on the hospital bill, or is it inclusive of professional fees in hospital as well?

Will the reinsurance arrangements also be applicable if the Scheme has alternative reimbursement arrangements in place related to hospital cases?

The actuary needs to consider that a proposed reinsurance agreement is appropriate in that the terms of the agreement are such that the agreement operates as intended

Is the reinsurer non-specialist or specialist in medical scheme reinsurance in the particular territory and how does this impact their ability to deliver on the terms of the agreement?

Is the reinsurer local or offshore based and how does this affect the nature of the agreement?

What is the credit rating of the reinsurer (for example, by Standard & Poor)? This is important particularly for reinsurance into the London market.

Have a number of reinsurers been approached and has the best possible arrangement in terms of structure and pricing been achieved?

Did the other reinsurers perhaps not have the risk appetite for the Scheme's hospital claims risk?

What is the level of brokerage payable (if any) for the reinsurance to be placed and what are the terms (i.e. frequency) of brokerage payable?

Is a profit share payable and is the level reasonable? Profit share normally varies according to the size of the reinsurance transaction, the potential volatility of experience and the level of service to be provided.

Has sufficient data and information been given to the reinsurer in an attempt to obtain the most favourable arrangement?

Have the relevant areas where the reinsurer can add value been considered, such as knowledge and expertise, ongoing service and support.

Is the reinsurance structure appropriate given the scheme specific considerations above? Structures might include, quota share, individual excess of loss or stop loss arrangements.

Is the reinsurance premium reasonable given the scheme specific risks above? The actuary should consider the expected claim costs, the appropriate margin to provide for variance in claim costs and scheme-specific risks and the margin to provide for reinsurance expenses in order to make such an assessment. The cost of capital of the reinsurer is a further factor for the actuary to consider.

What are the criteria for premium adjustments?

Does the objective of the reinsurance agreement meet the intention of the Trustees in entering into such an agreement?

Contract details. What is the term of the contract, renewal terms and cancellations clauses? What are the terms of any profit share payment? The actuary should pay particular attention to the termination provisions for termination by either party.

The actuary must ensure that any associations with any reinsurers, medical scheme administrators or any conflicts of interest are properly disclosed

The actuary should perform a review of the relationships and disclose accordingly.

The actuary should be provided with a written guarantee from the Trustees that he/she has been supplied with full details on all agreements between the medical scheme and the reinsurer

The actuary should ensure that the relevant information has been sourced and include such in the report.

The actuary should make it clear to the Trustees of the medical scheme that they are responsible for the decision to purchase reinsurance and that the actuary's role is adviser in this regard

The actuary should ensure that the format of the advice including the report is adequate to facilitate the decision-making process.

The actuary should apply his/her mind to the application of the actuarial control cycle to the reinsurance process

The environmental assessment should include legislative requirements and risks...

…followed by legislative compliance monitoring and risk experience monitoring once the reinsurance arrangement is implemented.

The actuary should provide a report to the Trustees of the Medical Scheme in a format consistent with the requirements of the Medical Schemes Act

The information contained in the report should be sufficient to the extent that an external independent actuary could formulate an independent opinion.

Significant departures from this Standard of Actuarial Practice should be noted in the report and the reasons for such departures fully explained.

The report should include the following:

- A statement as to whom the report is addressed and the date at which the report was prepared.
- Confirmation that the actuary is acting in an independent capacity.
- A general description of the proposed reinsurance agreement.

- A description of the information reviewed by the actuary.
- A description of the medical scheme risks to be addressed by the proposed reinsurance agreement.
- A description of the terms and price of the proposed reinsurance agreement, with particular reference to the termination and renewal conditions.
- A statement of any brokerage and/or profit commission payable.
- A description of the process followed in obtaining reinsurance quotations and a summary of these quotations.
- A comment on the likely impact on the accumulated funds of the medical scheme.
- An opinion on the appropriateness of the proposed reinsurance agreement.
- An opinion on the appropriateness of the reinsurance premium and the methodology which has been followed to make this assessment.

[Total 30]

QUESTION 4

i. Describe how you would apply the actuarial control cycle to design and cost this product

This question tested candidates' ability to apply the actuarial control cycle to a particular insurance market context and product. Candidates who did not follow the actuarial control cycle lost marks. Marks were given where the actuarial control cycle was applied implicitly but sufficiently to demonstrate an ability to work through the various aspects of the control cycle.

Candidates showed poor understanding of a health insurance product versus a medical scheme product, with many relying too heavily on the specific South African medical scheme market dynamics and challenges.

General commercial and economic environment

What is the need for the product and the reasons for introducing the solution?

Is there a gap in the market and what is the gap:

- What healthcare indemnity products already exist in the market and does JG sell any of these types of products?
- Does this provide an attractive top-up cover to existing products?
- Is there a public healthcare system and how are the public charged for healthcare goods and services?
- Could we attract clients that would not normally buy healthcare cover i.e. are we attracting a new client base?
- Perhaps there are a number of group clients where the members want more cover than that offered through their employer arrangements
- Is this a "cheap" way to get more cover than buying all from one insurer – "arbitrage opportunity"?
- Then there is the possibility of eating into your own book
- Consideration of own and others existing product ranges available
- Consideration of the competitive landscape for the product
- The types of individuals and groups that would be attracted to such a product to meet their needs?
- Do these individuals or groups have existing cover or would they be new to the insurance environment?

Specify the problem

- How to set the appropriate premium for this product so as to balance the profitability and attractiveness of the solution
- What are the policy terms and conditions to mitigate adverse selection
    - Including minimum and maximum age at entry
    - Renewability / policy duration
    - Eligibility

    - Underwriting
    - Other reasonable examples
- Should JG take out reinsurance to protect against volatility especially during the first few years? How does this affect the premium and expected claims patterns?
- How will the product be sold, for example through brokers, direct to consumer via telesales, email and / or online? How will this choice of distribution channel affect the expenses and the resulting premium?
- How does the policy address an existing healthcare financing need?

<u>Develop the solution</u>

- Can we use data from Impetus? Does this data include claims severity and claims incidence?

- If so, how do we use this data
    - Look at claims development over time for an individual or family
    - Model the incidences where they would reach the threshold and then the range of claims in excess of this
    - Do we consider the level of Sum Insured and relative claims size since these may differ between countries, taking into account that other country data may have comparability issues
    - Look at "standard" conditions that are unlikely to have differences in treatment protocols as the treatment of these should be similar and we could "translate" the cost between countries.
    - Examples could include:
        - Childbirth
        - Tonsillectomy
        - Spinal fusions
        - Etc
    - Would the individual claimants breach the SI threshold multiple times over the period?
    - Simulate or model with multiple threshold and SI combinations

- How do we convert the current product into meaningful results for JG?
    - May have to find a conversion factor based on JG data, as discussed above
    - But young and developing company so there may be impediments to translate information between the territories/countries.
    - So there may be insufficient own information thus it may be difficult to perform any modelling
    - Could one approach a reinsurer that has a more developed book of business and has similar solutions in the same country as JG?
    - Are there any industry statistics (but the penetration is low so would these have low levels of credibility?)

- Operationally –
    - how would claims be collected, validated and assessed, this would need to be thought out and documented
    - Would we rely on the claims experience from the joint venture?

- There is a danger that the base insurer does not invoke as much rigor in their underwriting and claims assessment
- Would the rules that they use to assess claims at the same standard of your own
  - Providers used
  - Admission of a claim rule
  - Fraud detection
- Do we ensure that the client has other cover in place, e.g. do they have medical insurance in place, or do they rely on State for initial cover, or pay out of pocket?
- Do we need to assist with the marketing material so as to ensure that the purchasers are adequately aware of what they have purchased?

Monitoring the experience

- This would be critical in this case as it is a new solution
- One would need to ensure that the claims and policy administration systems are able to deal with the policy features etc.

Professionalism

- You need to ensure that you and the team in country adhere to all local legislation
- And local actuarial guidance on product development and pricing
- Also to ensure that suitable precautions are taken to ensure reasonable translation of the results between countries
- The policy terms and conditions should adhere to the TCF principles or local equivalent guidelines

[Total 18]

ii. Discuss what you would consider in your feedback to the regulator including the appropriateness of the current framework and suggested alternative frameworks

This question tested capital principles as was relevant for this product and market. It required candidates to think about a proposed solvency framework and how this could be improved given a developing health insurance market and company.

There was a lack of depth in a number of the solutions provided. Candidates defaulted to risk based capital and only the good candidates managed to test more than this alternative – so missing a number of "easy" bookwork marks. There was almost no recognition that the "regulator" was questioning the rigor of current methods. Hence while it was acceptable to mention standard scheme solvency methods, there was limited associated comment as to the appropriateness of these methods.

Capital is needed to back the risk accepted by the insurer and would need to exceed a minimum amount.

One needs to consider the term of the liabilities when considering the capital regime and how much capital is needed.

In health insurance the liabilities are more generally short term (i.e. one year renewable contracts) and so it's likely that a simpler method can be considered and the one in place could be appropriate.

The appropriateness

- At a company level, this is generally acceptable and used in many countries.
- But deterministic as it relies on a view of the Assets, Liabilities, premium income and expenses.
- There is no real way to ensure that all risks are included and so there could be additional capital required.
- Is this appropriate for a new and growing company as is the case for JG, since their experience is still developing and so unexpected risks may present.
- Potentially not since the premium levels may not capture the level of risk that is being taken up…
- One needs to also consider how claims and operational risks are considered.

Alternatives - consider how they work / formula and comment on likely appropriateness:

- Simple premium cover, e.g. 25% of gross annualized contributions, such as used in the South African Medical Schemes environment.
- The approach is easy to calculate and explain to the Regulator and other stakeholders
- But does not take into account the reality of the risk exposed to (e.g. operational, liquidity and credit risk).
- The Regulator is unlikely to consider this method since they are already questioning the more rigorous method.

- The Financial Soundness Valuation (FSV) method or framework could be considered as this is an "extension" of the current method in place
- Under this method the capital required is the bigger of the minimum capital adequacy required (MCAR) and the Solvency Capital Adequacy requirement (SCR)
- The MCAR is similar to the current method where the SCR is the extension
- The SCR is the Basic Solvency Capital Requirement (BSCR) plus the Operational Risk Capital factor (OP)
- The BSCR improves the above method since it takes specific risks into account and ensures that there is an allowance that not all risks are correlated
- The OP is a factor that takes the premiums and provisions of the insurer into account in a more rigorous way than the current method
- Hence this method takes more of the insurers risk into account and can be more appropriate for the growing insurer
- It is also simple to calculate and assess
- Risk based capital methods could be considered
- But this is more complex and would the regulator be in a position to adequately evaluate the models and output?
- Does it adequately take into account the risks being faced by a particular insurer
- And specifically by a new and growing insurer like JG where there is the potential of many more unknowns which might not be taken into account in a RBC model
- However, it would be able to take into account the risks presented by different lines of business
- Such as the "traditional" health cover and the new Restore benefit as there will be different risk profiles

[Total: 12]