

EXAMINERS' REPORT

November 2019 examinations

Subject F101 — Health & Care Fellowship Principles

INTRODUCTION

The attached report has been prepared by the subject's Principal Examiner. General comments are provided on the performance of candidates on each question. The solutions provided are an indication of the points sought by the examiners, and should not be taken as model solutions.

SOLUTION 1

Part (i) Students were required to outline the benefits of OSF as compared to tied agents. This question was reasonably answered. Students who performed well were able to generate enough points ensuring they fully explained the benefits of OSF.

Part (ii) This question required students to apply their knowledge of factors that influence claims experience. This question was very poorly answered, with most candidates struggled to generate enough points or included points related to other premium elements. Candidates also struggled to apply generic points to the specifics of the question and thus were unable to generate sufficient breadth in their answers.

Part (iii) was pure bookwork, and most students were able to score well.

Overall this question was poorly answered by most candidates, largely due to their performance on part(ii).

i)

- Economies of scale for non-healthcare costs (such as marketing & sales)
 - o e.g. costs of advertisements can be spread over more policies
- The insurer can use its customer database to cross-sell
 - o i.e. sell the PMI product to customers that have an existing life policy
- The OSF is well established which means that it has additional reach in terms of market penetration
- The OSF will only sell the large insurer's PMI business, unlike the tied agents who also sell competitor products. Thus, moving to OSF reduces competitive pressures.
- The insurer will have better control of the sales process: risks they sell to; information conveyed; what the mix and churn rates are and how to adjust them.
- The insurer will have better ability to provide training to their OSF to ensure TCF.
- OSF likely to be remunerated more through salary than commission which reduces the incentive for misselling policies.

ii)

Demographic profile (a precursor to claims experience) is dependent on the distribution channel/target.

By changing the distribution arrangement, the composition of the demographic profile has changed....

- ...from predominantly employer groups to individuals (retail)
 - o Groups are less subject to anti-selection
 - ... e.g. as the PMI product might be part of the cost-to-company package/compulsory/offered to all employees/more diverse base
 - o So more individuals would imply more anti-selection on average
 - Especially given the basic underwriting associated with the product
 - o And hence the shift in profile would imply higher claims ratios under the new sales arrangement

- ...and possibly from younger lives to older lives
 - Retail lives as per info also include post-retirement annuities
 - i.e. higher pensioner ratios
 - Whereas group lives would be more highly weighted to the active workforce
 - Claims costs increase with age
 - And given the limited underwriting, this would increase the claims ratios.
- The geographic / socio-economic composition of lives could have been altered
 - For example, the large insurer might sell more business to the financially sophisticated/affluent market in large urban areas
 - ... that is more aware of claiming under their PMI benefit
 - ... and has easier access to providers such as doctors/specialists
 - Whereas some of the employer groups might have been in less urbanized areas (e.g. factory workers/miners) instead of big cities
 - ... and thus had reduced access to medical services
- Employer groups might have worksite health services as well
 - Reducing the claims under the PMI product
 - And might have wellness days for preventative screening/testing
 - ... also reducing claims
- A change in the gender composition could also alter the types and sizes of claims
 - e.g. if the new profile has more females, maternity related claims and complications might be much higher
 - Or the prevalence of breast cancer
- The demographic profile could have changed from healthier lives to sicker lives
 - As being part of the workforce has a basic requirement of health
 - The insurance group might have a very relaxed underwriting policy with regards to its CI business...
 - ... and therefore the lives that the PMI product is being cross-sold are sicker on average
 - e.g. might have higher cancer prevalence/incidence of heart disease...
 - ... and hence increase claims ratios

(Wide selection of marks available here for any valid comment on how the new sales arrangement could have changed the claims experience of the PMI business)

iii)

- Independent intermediaries
- Direct marketing

SOLUTION 2

For part (i) only a few candidates considered factors that would affect the relative claims experience of females and most focused on the benefit differences. Part (ii) was reasonably well answered although many students included duplicate points e.g. state of health and chronic conditions is not adequately distinct. For part (iii) most candidates covered points on data adequacy and good students included issues of complexity and reputation.

i) Difference in premium rates between Existing and Proposed plan due to:

Morbidity Experience

In Existing Products, both male and female lives are covered and gender neutral premium rates are offered to the customers. Gender neutral rates may have been arrived at by assuming a mix of male and female lives.

Premium rates vary between male and female lives due to difference in morbidity experience of the two groups – some of the reasons for variation listed below:

- Difference in occupation pattern of male and female. Risky jobs, e.g. mining usually undertaken by male lives
- Difference in smoking pattern, e.g. in certain societies, smoking is less common amongst female lives
- Difference in alcohol intake e.g. alcohol intake may be more amongst male life.
- Difference in dangerous hobbies, like participating in adventure games
- Difference in the diet or attitude towards exercise
- Biological differences in male and female bodies also contribute significantly towards different morbidity experience.
- Certain diseases are more prevalent in one gender e.g. certain forms of cancers like cervical cancer common in females

Proposed product covers only female lives and therefore, gender neutral premium rates may not be directly comparable with the premium rates offered under the proposed plan.

Claim conditions covered

The proposed plan only covers cancer whereas existing products cover wider range of CI diseases. The incidence rates under two product types may differ significantly, resulting in variation in premium rates.

E.g. - Existing products may also offer cover for Heart and Kidney diseases, which are completely excluded from proposed product. On the other hand, new product may be covering some forms of cancer, which are otherwise excluded from regular CI plans, e.g. Skin cancer.

Higher Margin for Adverse deviation

Proposed product would be the first product in market offering cover for diseases on standalone basis. Company may have built higher margin for adverse deviation in premium rates compared to existing products due to lack of experience.

Reinsurance Arrangement

Since there is no past experience for the proposed plan in market, Company would need significant help from the Reinsurer to price this product. Company may have opted for a lower retention limit under this plan compared to other products, resulting in higher premium pay-outs to the reinsurer. This cost would be baked in premium rates and would result in variation from existing rates

Expenses

The proposed plan is first of its kind in the market and hence, greater marketing costs are associated in promoting this product. Also, the product would incur additional set-up related costs. A higher loading for expenses may be required in premiums under this product compared to existing plan

ii) Possible rating factors:

- Age
- Occupation
- Location
- Benefit amount (sum assured)
- Smoker Status
- Medical history
- Family's medical history
- Cooling off period/exclusions
- Types of cancer covered
- Policy Term
- Options provided, like tiered benefit, waiver of premium, indexed sum assured etc.
- BMI

iii) Some of the pricing challenges are:

Product design

Difficult to ascertain the exact needs of customers and to create a product catering to those needs, for e.g. how much payment to be made at each stage of cancer. No similar product exists in the market, therefore, difficult to access the exact needs and create features addressing them.

Deciding the types of options to be provided and doing a cost benefit analysis of those options. (If they add value to the company)

Defining the policy wordings, terms and conditions, product exclusions etc.

Making the product features consistent with the competitors. Too much deviation may make product difficult to sell.

Availability of data:

Data available may not be sufficient enough to be divided into credible homogeneous groups like sum assured, occupation, location etc.

Plan is offered only to female lives, which further reduces the level of data available.

Data may not be available by various risk factors like types of cancer, progression of disease etc.

Data available may not complete. There may be missing entries in the data

Data may have errors

Data available may be outdated for drawing any conclusive evidences. For e.g. breast cancer once life threatening, if detected in early stage is curable now.

Pricing Model and Assumptions

Difficult to model complicated benefits

Difficult to allow for flexible benefits like tiered benefits, waiver of premium etc. in pricing model

Difficult to allow for guarantees and options in pricing model

Requires multi state modeling in order to capture transition between various stages, for e.g. healthy state, different stages of cancer like CIS, early stage, critical stage etc.

Medical inflation is challenging to assess

Difficult to ascertain claim incidence rates with limited level of data

Underwriting

Significant morbidity risk associated with such plans and therefore, a strong underwriting policies is required

Challenges in defining the approach to be taken for standard and substandard lives, e.g. whether to offer cover to a person who has family history of cancer, finalizing the medical grids basis which extra premium will be charged to substandard lives.

Difficult to assess the level of underwriting to be done. Too strict and too relaxed underwriting process compared to the competitors poses a risk

Difficult to do cost benefit analysis on the level of underwriting

Challenges with the credibility of medical reports.

Possibility of fraud from medical centers cannot be ruled out

Claim incidence and amount

Assessing the rate of medical inflation a challenge

With the new technological advances and diagnosis available,

- o Cancer is now usually identified at an early stage, thereby increasing the possibility of claim
- o Better medical facilities, increasing the life expectancy resulting in claim for longer duration

Fraud, anti-selection by customers leading to higher claims payouts

Difficult to access onset of cancer

Other challenges

Since no other product similar to this product exists in the market, there may be additional challenges associated with pricing, like:

Regulatory constraints on product design, e.g. substandard rating factors, underwriting practices, exclusions etc.

No prior experience, therefore additional expenses associated in product set-up

- o May need to hire staff with prior experience in such products
- o Reinsurer assistance, which comes with a charge
- o May need separate claims and data management systems to handle such products

There may be challenges associated with getting a comprehensive reinsurance arrangement for such plans

May need to explore different distribution channels to reduce morbidity risk under such products e.g. online channel may have better morbidity experience than brokers.

SOLUTION 3

This question was disappointingly answered as a high proportion of the marks were for bookwork points. Parts (i), (ii) and (iii) were mainly bookwork. Well prepared students who had engaged with this part of the syllabus were able to perform well on part (iv).

i) Using the tweedie distribution allows one to directly model claims incurred data which typically has a large point mass at zero

- ii) - Age is a continuous variable which makes splitting into distinct risk cells difficult
- This would lead to explosion in the number of risk cell combinations
 - Leads to problems in model interpretation
 - And credibility of the data within risk cells

iii)

The model appropriateness can be assessed using

Deviance residuals - measures the distance between the actual observations and the fitted values

Standardised Pearson residuals - the difference between the observation response and the predicted value, adjusted for the standard deviation of the predicted value and the leverage of the observed response.

Residual plots - plots of residuals against fitted values. Which should ideally be symmetrical about the x-axis and fairly constant across the width of fitted values.

iv)

| Age | RUB 1 | RUB 2 | RUB 3 | Diabetes | Exposure (Life Months) | Expected Per Life Per Month | Total Expected Expenditure |
|-----|-------|-------|-------|----------|------------------------|-----------------------------|----------------------------|
| 55 | 1 | 0 | 0 | 0 | 330 | R1,089.96 | R359,686.80 |
| 63 | 0 | 0 | 1 | 1 | 550 | R1,723.37 | R947,853.50 |
| 74 | 0 | 1 | 0 | 0 | 88 | R1,571.00 | R138,248.00 |
| 85 | 0 | 1 | 0 | 1 | 20 | R1,826.50 | R36,530.00 |
| | | | | | | | R1,482,318.30 |

| | |
|--------------------|--------------|
| Actual Experience | 1358280 |
| Balance to be Paid | -R124,038.30 |

SOLUTION 4

Part (i) Students were required to describe the risks and propose mitigations to the situation. Most students were able to discuss at least some risks and propose potential mitigations. Those who scored well identified several different risks and mitigations, and were able to avoid repeating points.

Those who proposed underwriting (or re-underwriting) those taking-up the option were flagged by the examiners. This is a highly frowned upon point as it would go against the underlying principle of the option and would deem the option pointless and to have no value. It would also be against the TCF principle.

Part (ii) Students were required to describe how they would price for this option. Students seemed to struggle to generate enough points for part (ii). Most students were able to discuss what the price differential was as well as the three methods that could be used to price, however those who performed very well were able to think about how to load for the cost over the different policy durations, as well as consider the data requirements and assumptions. Students needed to demonstrate they understood the difference between the North American Method and the Conventional method to be awarded the marks, as well as explain what they would use a Stochastic model for, rather than just listing these approaches.

Overall the question was reasonably answered, with those who were well prepared able to score high marks.

(i)

- Going from being subsidized at group rate to paying full amount at standard individual rate
- Take up of option by lives with higher risk
 - Communicate option widely to get better take up
 - Require notice period to access option
 - Maximum age
 - Pre-existing condition exclusion or waiting period
- Inadequate pricing in premiums charged
 - monitor experience and revise assumption
 - consider reinsurance for catastrophes or concentrated risk
- Dissatisfaction with option available
 - clear communication
- Risk that lives choose a higher benefit plan when exercising the option
 - only allow lives to continue with their existing benefit plan if they take up the option
- Airlines often experience high staff turnover, thus a risk for high churn rates
 - require a minimum period of working for Zebra Airlines before being allowed to take-up the option

(ii)

- The price of the option would be the premium foregone due to not being able to load standard rates after exercising option. In other words, the difference between the premium charged at standard rates currently being paid on a group basis versus the premium that

would have been charged under standard rates, where it is for an individual who has undergone underwriting and had a commensurate loading applied.

- Require assumptions for take up proportion; risk loading of those exercising; and the morbidity experience of those taking up the option.
- Will need to identify data sources to assist with informing the assumptions required for pricing. The data may need to be adjusted to be representative of the airline's working force and other specifics.
- Could use the North American Method that assumes a proportion of lives will exercise the option. Would need to estimate the select mortality experience.
- Unlikely to have adequate data for North American Method
- Could use conventional approach, which assumes all lives, exercise the option.
- And experience "ultimate" (not underwritten) experience/morbidity.
- Could also use a stochastic approach to model the proportion that take up the option and their expected experience.
- But need adequate data to populate assumptions for the number exercising.
- There would need to be an estimate for the period of cover before the option
- ...and the estimated time period of cover under the option.
- There would also be the amount of loading foregone
- Determine the present value of the loading foregone
- This amount would need to be spread over expected period of group coverage (period prior to option being exercised)
- The rates could be tested against what is being offered in the market to ensure they are still competitive, especially for good risks that would help balance out the bad risks.
- Many assumptions so need to monitor experience regularly, and can even perform sensitivity testing for precaution.

SOLUTION 5

This question was reasonably well answered by most candidates.

Part (i) was pure bookwork.

Part (ii) was bookwork with application, and candidates that structured their answers and used sub-headings (e.g. 'costs', 'benefits' and 'conclusion') generally performed better. Most candidates explained the cost element but did not generate enough marks on the benefit component, failing to explain how to quantify the reduction in claim costs before and after the programme.

Part (iii) was also bookwork with application. The programme focuses on out-of-hospital care and medicine management, so candidates outlining only hospital quality metrics did not score full marks. E.g. chronic medication adherence/blood sugar levels would be an important measure to address quality of care.

For part (iv) some candidates confused "formularies" with "treatment protocols". Candidates also lost marks for using concepts such as "prescribed" vs "funded" interchangeably, not being

clear on the roles of healthcare providers vs insurers (healthcare funders). Many candidates omitted mentioning the member impact in relation to cost savings for the insurer.

In part (v), candidates generally performed well on this question.

For part (vi), some candidates listed benefit design elements (e.g. co-payments, rand limits, exclusions) instead of managed care interventions.

A wide range of marks were available.

i)

- Reducing the **cost** of medical events
- Improving **quality** of care provided
- Ensuring that medical services are delivered in an **appropriate setting**
- Ensuring that high-risk members are managed and receive appropriate care
- **Reducing the number of unnecessary medical services**

ii)

General

CBA converts the benefits of an intervention (i.e. the programme) into a monetary value, and compares to the actual costs – sensible comparison to make informed decisions upon, however, controversial to place a monetary value on human life or health. Some of the benefits may be directly measurable in monetary amounts (cost savings), but others not (health outcomes).

Cost

Determine the costs related to the programme

- This would be the total cost of clinical staff/systems development/admin staff to run the programme
- This might be allowed for in the budget/accounts as
 - o a fixed cost or
 - o a per-life-per-month (plpm) fee

Benefits

Calculate claims costs related to diabetes (e.g. diabetes related hospital admissions) *before* the programme

- Divide by suitable exposure over the year to get a plpm cost

Calculate claims costs related to diabetes (e.g. diabetes related hospital admissions) *after* implementation of the programme

- Divide by suitable exposure/lives to get a plpm cost

⇒ The difference between the two would be the healthcare savings on a plpm basis

(You want to strip out membership movements if it is not a fixed fee)

Additional, non-monetary benefits that should be allowed for (and converted to a monetary amount) include:

- Improved quality of life – healthier, happier, if previously not managed or not managed as well

- Increased life expectancy
- Fewer health events exacerbations

Compare

Compare the plpm fee and the plpm savings and see if there is a cost savings

If there is a cost savings → continue with the programme, otherwise consider to stop it

Possible extra marks for other considerations such as

- Member satisfaction
- Marketability benefits
- Reduction in co-morbidities (i.e. if a member has diabetes and hypertension (“high blood pressure”), following up on doctor’s visits will also reduce the hypertension)
- ...

iii)

- Patient mortality rate
- Chronic medication adherence (e.g. blood sugar levels)
- Patient questionnaires
- Specialist referral rate
- Hospital admission rates
- Number of complaints received

(any 4 – other valid option as well. Only consider first 4 listed)

iv)

- At its most basic level, a formulary is a **list of medicines**.
- In this case it will be a list of medicines to treat patients with **diabetes**.
- The formulary will list mainly **cheaper generic medicines (where they exist)**
- **Members** choosing to use more expensive medicines may have to **fund the difference** between the cost of the formulary medicine and the one that they have chosen, or that has been prescribed to them

v)

- It may **aggravate** policyholders, who may feel that they should have access to medicines not approved by the insurer – causing not to renew policies
 - Especially *existing* policyholders who used to be able to claim for medicines in full, but now have to incur co-payments for exactly the same medicine
 - *First time policyholders* may only come to know of the relevant formulary at the time of claiming for the condition (e.g. after being diagnosed as diabetic) – so less of an effect

It is also possible that a very restrictive formulary may restrict access to **quality** healthcare

E.g. a medicine formulary may unfairly exclude an expensive medicine and recommend an alternative which does not act as a complete substitute for the original excluded medicine

Can actually *increase claim* costs in the long run

vi)

- **Specialist and GP networks // Preferred provider networks**

Restricting access to a selected network of specialists and GPs, with whom preferential charging structures have been agreed.

Can also be used for hospital networks

Can also include specialist referral

- **Hospital pre-authorisation**

When the policyholder needs to go to hospital he/she should call the insurer to discuss the proposed treatment, check whether it is covered under the treatment protocols (e.g. length-of-stay covered) and whether the hospital is on the network list

- **High cost case management**

This involves monitoring the policyholder while they are in hospital by communication with the healthcare provider. This can facilitate planning of the patient's discharge from hospital and follow-up care or changes in the treatment regime.

- **Preventative tests and wellness programmes**

Offering health risk assessments to policyholders / wellness incentives might help to policyholders to take better care of their health through better eating habits/more active lifestyles thereby preventing type 2 diabetes

- (any valid 3 with brief description)

SOLUTION 6

For part (i), Students not linking the generic reasons for reinsurance to the question scenario weren't awarded marks.

In part (ii), the 40% quota share was misunderstood for 60% reinsured rather than 60% retained. The original terms was often applied to the sum insured instead of R500m premium, and the original terms was applied the wrong way around with retained vs reinsured being mixed up. A handful of students calculated Maximum Individual Loss only i.e. the highest cover amount was only focused on and other policies left out

Part (iii) asked students to decide which of the two quotes, if any, to go for but some students examined the need for reinsurance in general without relating to the two quotes. A disappointing number of students mentioned the cost and didn't even tie to answer when they had just calculated the cost in previous answer! No marks given for a general cost statement if not tied to answer in some way – either R100m difference or Reinsurer A more expensive than B.

i)

- Limit the overall exposure to risk
 - New product line which the insurer has no past experience in, hence a lot of uncertainty
- Limit large losses from individual risks

- Medium-sized insurer, so large individual losses can have a significant impact on free assets, solvency, profitability
 - Concentration of employer group schemes increases this risk
- Smoothing of results
 - Shareholders prefer smooth development of accounts – risk of volatility higher with new product line
- Availability of expertise
 - New product line, insurer likely needs assistance with design, pricing, distribution, etc.
- Increased capacity to write more/larger business
 - Reduced volatility and limited overall exposure to risk can allow the insurer to write more business and write larger policies.
 - The group market is characterised by large chunks of risks taken on at a time rather than individual risks so the insurer can quickly reach its capacity limit
- Financial assistance from the reinsurer
 - There may be tax/capital arbitrage and/or reinsurance commissions to assist with reserving/new business strain or recouping development costs
- **Reinsurer A**
 - Treaty 1 – $40\% * R500m = R200m$
 - Treaty 2 –
 - Policy 1 – nothing ceded, hence no additional premium
 - Policy 2 – $0.6 * 75m \Rightarrow 45m$ after QS $\Rightarrow 20/45$ ceded: Premium = $20 * 10\% = R2m$
 - Policy 3 – $0.6 * 150m \Rightarrow 90m$ after QS $\Rightarrow 65/90$ ceded: Premium = $65 * 10\% = R6.5m$
 - Treaty 3 –
 - Premium = $90\% * 10\% * (25m * 2 + 0.6 * 25 - 40) = R2.25m$
 - Hence total Premium = R210.75m
- **Reinsurer B**
 - Treaty 1 – $20\% * R500m = R100m$
 - Treaty 2 –
 - Policy 1 – $0.8 * 25m \Rightarrow R20m$ after QS $\Rightarrow 5/20$ ceded: Premium = $5 * 10\% = R0.5m$
 - Policy 2 – $0.8 * 75m \Rightarrow 60m$ after QS $\Rightarrow 45/60$ ceded: Premium = $45 * 10\% = R4.5m$
 - Policy 3 – $0.8 * 150m \Rightarrow 120m$ after QS $\Rightarrow 105/120$ ceded: Premium = $105 * 10\% = R10.5m$
 - Hence total Premium = R115.5m

i)

- Roughly a R100m difference in reinsurance premiums cost – significant amount!
 - This difference is predominantly due to the QS portion
 - The impact on total claims of the surplus/XoL components of each treaty is almost negligible under both given the size of the book and the small number of large policies
- Bear in mind the purpose of getting the reinsurance –
 - if mainly to reduce overall exposure to risk due to being new in the market, no experience, etc.
 - then high initial QS – reinsurer A - (albeit at a premium) is probably preferable, until experience emerges and the insurer understand the peculiarities of its CI group business
- Levels of reinsurance commission may differ depending on reinsurer – and depending on the extent of new business strain for the insurer, larger QS – reinsurer A - may be preferable
- Additional assistance needed from reinsurer – terms on which this is available and from which reinsurer
 - Levels of technical assistance may differ between reinsurers – irrespective of price, given new entrant into the market, the reinsurer offering the most technical assistance, claims and underwriting support probably preferable
- Impact on profits – reinsurance expected to have a net-cost
 - Aim to maximise profits, subject to other considerations given
- Impact of large claims – both offer protection with A having a higher retention limit on individual policies, but the XoL policy limiting the overall risk if all three policies suffer high claims
- B has lower retention per policy, but with no XoL the total claims liability for the large policies will be slightly higher
- Other considerations include:
 - Reinsurer's reputation
 - Their solvency levels (i.e. default risk)

Other business with the reinsurer – ease of on-boarding/existing relationships, etc.

SOLUTION 7

Overall, this question revealed somewhat of a gulf between the students' ability to answer bookwork questions and application questions.

Part i was well answered by the majority of students. Only those who were poorly prepared, either in terms of bookwork or exam technique, scored poorly on this part of the question.

Part ii asked students to apply the knowledge in a more specific manner by giving details of an impending merger and asking them about specific issues relating to the pricing process. Few students scored above 50% for this part of the question. Many failed to recognise the main issues prevalent in the scenario and few realized that the lower level of chronic benefits on Recovery will

likely mitigate the higher chronic prevalence on Veritas and may also lead to selective lapsing which advantages the insurer.

(i) Pricing process

- Choose base period for the pricing exercise, such that data is:
 - Of sufficient volume
 - Carries sufficient detail
 - Over a long enough period to indicate trends
 - Recent enough to be relevant (systems, channels, benefits, lives, etc.)
- Collect the data
 - The company should have sufficient recent internal data regarding claims experience
 - Given its size and market share
- Split data into homogenous groups
 - Ensuring that cells contain enough data and are credible
 - Combine smaller risk cells to ensure credibility
- Adjust the base values/ data, allowing for:
 - Unusually heavy or light experience
 - Large or Exceptional claims
 - Trends in claims experience
 - Changes in risk profile over the data period
 - Changes in cover
 - Changes in the cost of reinsurance
 - Incomplete claims (IBNR)
 - Seasonal variation in claims
 - Changes in agreements with suppliers
 - Adjust the past data for claims inflation between the years included in the base period
- Calculate the Burning Cost Premium per risk cell/homogeneous group
 - Half Mark for formula as example
- Analyse the data and adjust the sub-divided BCPs for any changes in the insurer's practice or relevance of the past data.
- Project the adjusted base values forward allowing for:
 - Changes in policyholder profile by benefit option, allowing for possible option movements the following year
 - Renewal rates, new business expectations
 - Claims inflation, allowing for increases in professional fees, hospital tariffs and medicine prices next year.
 - Changes in cover – for example, benefit enhancements or reductions for the following year.
 - Trends – specifically allowing for changes in the frequency of accessing health services or changes in treatment methods between years. (one example is enough)
- The insurer will have to allow for other loadings:

- Expenses associated with the product,
- Commission levels
- Solvency margins required by the regulator
- Any contingency margins for unexpected claims experience, if not allowed for earlier.
- Investment income earned on the assets underlying the insurance products
- Profit margins taking into account the shareholders required return on capital
- Other considerations
 - The insurer will have to check the competitiveness of the product against competitors within the market.
 - Policyholder reasonable expectations, including past practice, marketing literature
 - Regulatory requirements i.r.o. pricing – e.g. community rating, price ceilings, etc.
 - Sensitivity testing of premiums to gain a sense of the significance of key assumptions and the variability of results to incorrect assumptions.
 - May have to allow for through additional margins or loadings where appropriate and possible

(ii) Specific issues:

- The pricing actuary should consider the risk pool of Veritas and how its claims experience compares to Recovery Health.
 - Overall, a similar age profile will likely lead to a similar claims experience, all other things equal.
 - However, age alone is not a reliable indicator of the underlying risk profile/ claims experience of Veritas.
 - Given that Veritas beneficiaries have a higher chronic disease prevalence, it is expected that costs for these benefits will be higher next year, on average.
 - However, as Recovery has lower chronic benefits, an adjustment will be made to take this into account.
 - Adjustments will need to be made to other claims categories for the change in risk profile.
 - Any changes to the claims experience will need to take into account the benefits available under Recovery policies
- The pricing actuary should also consider the commission payable on the book of Veritas policies:
 - If Recovery's commission is lower than what Veritas was paying, there is a risk of more lapses or fewer renewals as intermediaries move their clients in order to maximize commission.
 - Alternatively, allow for higher commission in the pricing basis for the Veritas policies. If the Veritas commission structure leads to lower commissions, then intermediaries may churn policies prior to the merger in order to increase their earnings.
 - However, in a competitive market, commission structures are likely to be closely aligned between competitors.

- The expenses associated with the merged book of policies will need to be adjusted to reflect the new volumes of business on the books
 - Recovery will likely bring the Veritas policies onto its own administration platform, with variable expenses per policy likely to remain at current Recovery levels
 - There will be some economies of scale due to the higher policy volumes, leading to lower fixed expenses per policy
 - However, the expenses related to the merger will need to be recouped in future and allowed for in the pricing basis.
 - E.g. systems upgrades, hiring new staff, premises, etc.
- The reserves held by Veritas will be transferred to Recovery, however these will be deficient as Veritas is not currently solvent.
 - This means that the merged risk pool will have lower solvency reserves than Recovery currently has.
- The pricing basis for next year and beyond will need to include an additional margin to allow for the building of reserves within the five year period.
 - Depending on how large Recovery's reserves were before merger – may have been sufficient to make up the deficit Veritas had given their size, economies of scale, lower chronic benefit entitlements, etc.
- Allow for lapses/non-renewals –
 - likely to be good for Recovery's risk profile – lower chronic benefits, which may mean the chronically ill join another competitor, and the healthier remain
 - on the other hand, too high lapses, too few renewals may mean that cost of merger can't be recouped, and significant reduction to reserves

There is a risk of reputational damage, and a knock-on effect on future sales and renewals as a result, due to reducing the benefit entitlement of those from Veritas – to the extent this cannot be managed, allowance needs to be made for it in the assumptions