

Actuarial Society of South Africa

MARKING SCHEDULE

OCTOBER 2022

**Subject F201 - South African Health and Care
Specialist Applications**

QUESTION 1

- 1(i) Discuss the rationale of the product's benefit design philosophy, and why there would be a demand for such a product. [10]**

Candidates struggled to answer this benefit design philosophy question. The candidates who differentiated themselves approached this question by identifying a range of relevant problems in the private healthcare market and linked each of these to a benefit design feature that aims to solve the identified problem.

Some candidates were unsure about the country and legal entity applicable in this scenario, and subsequently debated the legality of this product rather than answering the question.

Although the question was specifically asking about benefit design, many candidates veered onto other topics such as underwriting, pricing, risk management, distribution, etc.

Candidates also seemed to not appreciate the "Action Word" in the question and tended not to fully discuss the issues as was asked and rather attempted to write in point form.

The proposed solutions below assume the country in question is South Africa, however, a discussion in the context of another country is also valid.

The product's benefit design philosophy addresses the following themes:

- Certainty
- Transparency
- Prepaid or upfront payment
- Out-of-pocket expenditure
- Cash-paying target market
- Simplicity
- Flexibility

Certainty

In the eyes of the patient, the cost of private healthcare is highly uncertain due to:

- **Information asymmetry:** the severity of the healthcare cost depends on the condition diagnosed and the treatment prescribed which is not known to the patient upfront.
- **Tertiary healthcare:** the uncertainty of cost is exacerbated in the case of tertiary care as a typical individual would not have experienced hospitalisation frequently in their lifetime to understand the variability in healthcare cost.
- **Varying tariffs between providers:** The National Health Reference Price List (NHRPL) was published by the Council for Medical Schemes as a reference list of tariffs to assist schemes set reasonable benefits in cases where a scheme was unable to negotiate rates with all the healthcare providers its members used...

...The Council for Medical Schemes has later clarified that the NHRPL is intended to be a costing model utilising average benchmark values and standardised assumptions. It aims to create the stimulus for greater levels of differentiation of benefit and pricing levels within the private health sector—and thereby promote competition among healthcare providers and between medical schemes...

...The distribution of actual costs experienced by providers is such that for a portion of providers facing higher than average costs (or who work at lower than average productivity or efficiency levels), they may need to charge above NHRPL to achieve their target income and profit...

...However, equally there will be a substantial portion of providers who could charge less than NHRPL and recover their actual costs and achieve their target income and profit levels. These are providers who are more productive than the average practitioner or who experience lower costs than the average.

- **High increase in tariffs:** The cost of private healthcare has increased at levels in excess of consumer price inflation over recent years.

Therefore, a product that introduces certainty of tertiary healthcare cost would provide peace of mind and increase the propensity to generate demand for such a product.

Transparency

Patients are often shocked when they receive their various medical bills and experience this as hidden fees being revealed after a healthcare service has been rendered due to:

- A healthcare provider cannot always communicate the healthcare cost upfront. This can either be due to the provider not wanting to disclose their tariffs in the market, or...

...due to the patient's condition and treatment not being known upfront.

- **Fragmented tertiary care billing:** A typical hospital patient would receive separate bills from the hospital, surgeon, anaesthetist, radiologist and pathologist.
- **Complexity of medical scheme benefit design:** medical scheme members are not always aware of the various co-payments and deductibles they are subject to, and they often blame their healthcare provider for not communicating these upfront. A medical scheme member may be interested in this product where the surgery or medical procedure is not covered by their medical scheme benefits, for example, cosmetic surgery.

Therefore, a product that can remove the “shock value” associated with medical bills and introduce transparency of cost upfront would provide peace of mind and increase the propensity to generate demand for such a product.

Prepaid or upfront payment

Offering a product that enables pre- or upfront payment enhances the certainty experienced by the patient as his or her expectations are managed by clear communication.

Prepayment can avoid the “shock value” associated with in-arrears medical billing, and increase the propensity to generate demand for such a product.

The prepaid feature implies that recurring premiums, contributions or payments are not required.

Out-of-pocket expenditure

Medical scheme members often question the value-for-money of medical schemes when paying expensive medical scheme contributions, while often incurring out-of-pocket expenditure due to limits being reached, co-payments or depleted medical savings account.

In this instance, the product is targeted towards cash-paying patients, which implies the cost of the Prepaid Global Fee will be paid out of the patient’s pocket, but such a patient could view any higher-than-expected cost as an out-of-pocket payment...

...such as additional fees due to medical complications, or hidden fees.

Therefore, a product that can guarantee zero additional out-of-pocket expenditure – for the specific treatment required – would provide peace of mind and increase the propensity to generate demand for such a product.

Cash-paying target market

A key problem is the issue of affordability. While healthcare is a basic requirement, the South African population is diverse in its affordability levels. Thus there is a primary level of demand with additional services demanded by those with higher affordability levels.

The private healthcare sector services only 7 million members – approximately 15% of the country’s population. The rest of the population is largely dependent on the state.

This is a product that consulting surgeons can offer to their cash-paying patients as an alternative to referral to a state waiting list for needed care. This product can provide relief to the State’s healthcare burden and reduce waiting times.

This product also provides an opportunity for patients without insurance cover or medical scheme membership to opt for care within the private healthcare sector.

The fact that this product can be paid in cash, makes this product so much more flexible in terms of how this cost can be funded. The patient can obtain a loan, crowd-fund or pay with savings or disposable income.

The use-it-or-lose-it concept does not apply, but rather buy-as-needed.

This product is voluntary and can be purchased on an as-and-when basis.

Repeat purchasing of this product is possible, making this an innovative product feature.

Simplicity

Medical schemes and health insurance products have complex benefit designs – members, policyholders and/or patients hardly have a comprehensive understanding of these products.

While this product is simple in its nature: pay a once-off fee for a single procedure - in full.

Cash paying patients may not necessarily be aware of the complexity of medical scheme benefit design and nonetheless may be attracted to the simplicity of this product.

The simplicity is further enhanced given that this product does not rely upon cross-subsidisation – a concept not always appreciated by laypersons.

Flexibility

Medical schemes are highly regulated by the Council for Medical Schemes, resulting in little to no variations in benefit designs between schemes, and thereby limiting the scope for tailored solutions.

This product can be treated like an optional top-up benefit to a medical scheme coverage or health insurance product, making this product a flexible solution.

[Total 10]

1(ii) Describe the nature of the surgeries or medical procedures that could be considered for such a product. [10]

Candidates performed well in this question by not only describing the relevant nature of the procedures (and the reasons why) but substantiated their answers by contrasting the procedures that would be irrelevant given the product philosophy.

Candidates are not expected to have a clinical background for this examination, but those who are exposed to the healthcare industry and who accumulated some medical knowledge managed to differentiate themselves in this question with insightful clinical dimensions and valid examples.

Some candidates did not follow the instruction of the question, and rather suggested ways how to identify the relevant range of procedures to be offered within this product design, for example conducting a market needs analysis.

Although incorrect terminology was not penalised, it was disappointing that candidates failed to demonstrate their professional competence by using various incorrect terms interchangeably for the product outlined in the preamble: “coupons”, “vouchers”, “capitation”, “policies”, “schemes”, etc.

As the Prepaid Global Fee is intended for cash-paying patients, affordability is critical to ensure this market will be able to afford a once-off expense in advance. The nature of the surgeries or medical procedures is therefore driven by factors affecting the affordability of the product.

Frequent/high demand

The considered surgeries or procedures should be performed frequently by healthcare providers which translates into a direct high demand for the Prepaid Global Fees...

...while frequently performed procedures also generate high volumes of granular data that is advantageous for analytical and pricing purposes.

Frequently performed procedures also have the ability to stimulate efficiencies, translating into fewer complications, faster theatre times and stability in cost.

Examples of frequently performed procedures include cataract removal, tonsil removal, appendix removal, wisdom teeth extraction, hip replacement, knee replacement, shoulder replacement, and scopes.

Low complication rate

The considered surgeries or procedures should have low complication rates, i.e. where patients do not often require additional medical attention during the procedure while in theatre and/or during recovery.

That is, the surgeries or procedures should be deemed a low risk procedure such that the theatre time is predictable and the probability of utilising higher levels of care is low.

Surgeries or procedures with high complication rates are likely to be expensive and volatile due to unpredictably long theatre times, and...

...recovery in expensive wards such as the Intensive Care or the High Care units with unpredictably long lengths of stay.

Surgeries or procedures with low complication rates are likely to be more affordable and have more stable costs to assist in predictable pricing and lower required margins for risk.

Low mortality rate

The considered surgeries or procedures should have a low mortality rate as a high mortality rate is often as a result of (or associated with) a high complication rate, which can result in expensive and unpredictable pricing.

Small variability in cost

The considered surgeries or procedures should have a small variability in cost to assist with the predictability in pricing.

This implies that the considered surgeries or procedures should have:

- small variability in theatre times;
- small variability in the nursing staff involved (number of nurses and speciality of nursing skills);
- small variability in the medication used (used during the surgery, during recovery and those dispensed to be sent home with the patient);
- small variability materials and consumables used during the surgery;
- small variability in length of stay;
- small variability in the level of care.

Short theatre time

The considered surgeries or procedures should have a short duration in theatre to assist in the affordability of the product.

The short theatre time is also indicative of the potential low risk associated with the procedure...

...and the efficiency at which the procedure can be performed.

Short length of stay

The considered surgeries or procedures should have a short length of stay, implying a fast in-hospital recovery time to assist with the affordability of the product.

It could be the aim to consider day cases only where no or only one overnight stay is typically required. If the care required during recovery could be provided in the home setting this would also reduce costs and improve affordability.

Preferably the in-hospital recovery should be spent in lower level of care (i.e. the general ward) with a small probability of long lengths of stay in higher levels of care.

Sufficient supply of healthcare providers

The considered surgeries or procedures should have sufficient surgeons or medical specialists available or willing to perform these procedures.

The considered surgeries or procedures should be commonly done by surgeons to be considered fairly routine surgery.

Other valid considerations

- Once-off procedures, or procedures where the likelihood of a subsequent procedure is very low.
- Single surgeries or common combinations of procedures that can be performed during the same admission (e.g. tonsillectomy and adenoidectomy, or breast enlargement and breast lift).
- Procedures of which the cost is somewhat age-agnostic.
- Minimal need for specialised equipment or facilities.
- Elective, non-emergency, and/or planned procedures that could lend itself to pre-authorisation.
- Procedures that are typically not covered by medical schemes.

[Total 10]

1(iii) Explain how you would determine a price for such a product that would satisfy the benefit design philosophy. [15]

Candidates usually perform well in pricing questions, but in this particular question only a few were able to differentiate themselves by applying their prepared pricing response to the context of this question. For example, candidates who did not realise that the procedure would be performed with certainty upon sale explained in detail how claims incidence rates would be estimated, which did not attract any credit.

Some candidates were unsure about the legal entity offering this product, not realising that a global fee product is an ordinary retail product subject to the Consumer Protection Act that any entity can offer. There is no need to be registered as a medical scheme, insurer, financial services provider nor a hospital group.

The proposed solutions below assume that the actuary is employed by an employer that either has a good relationship with healthcare providers (such as hospital groups and specialists to contract) or is a healthcare provider, enabling access to granular data for the purpose of pricing. However, other assumptions are valid, and explanations regarding the implications for data availability received credit.

Hospital Data

The time period of the data should be recent, but the actuary should be careful of data during the calendar years of 2020 and 2021 as the data might be distorted by the COVID-19 pandemic.

The data should be used to ascertain the severity of the procedure cost only, while there is no need to estimate utilisation trends or claims incidence rates. We know with certainty that this procedure will be performed upon sale (i.e. the probability of occurrence is 100%).

The hospital data should provide historic fees for these procedures that should be sufficient to cover or make sufficient contribution towards hospital costs including:

- Catering costs
- Payroll
- Administrative expenses
- Medical Support Services
- Repairs and replacements
- Operational costs
- Profit.

The above investigation could be performed by means of an activity-based costing exercise.

Identify the relevant CPT codes for each procedure...

...while liaising with a healthcare professional or a clinical coding specialist to understand the implications of including or excluding certain CPT codes.

Apply rules to the data as per protocols or clinical entry criteria, for example

- Age limits: is the procedure for children only, or adults only.
- Length of stay limitations: if the intention is to consider day cases only, then exclude data points where the length of stay exceeds 1 day or procedures with a high proportion of cases with more than 1 day length of stay.
- Level of care: if the intention is to consider cases with limited probability of higher levels of care, then exclude data points where patients required care in High Care or ICU wards or procedures where patients often required care in High Care or ICU wards.
- Consider trimming the distribution: exclude a specified portion of the left and right tail of the probability distribution to discard likely outliers.

Perform a scenario test where the above data points are excluded, and another scenario where no data points are excluded, and use the relative difference of these scenarios to quantify the risk associated with complications.

Investigate the data whether the hospital typically owns the equipment required to perform the procedure, or does the specialist need to bring the required equipment, and quantify the difference of the usage fee between the hospital and the specialist.

Investigate whether the data includes cases where the procedure can be done with local anaesthesia, or general anaesthesia only.

Investigate whether the data reveals common procedure combinations, e.g. colonoscopy and gastroscopy that should be grouped as one product...

...and assess whether the combined cost can be less than the sum of the individual procedures.

Investigate whether the data reveals if there are multiple procedures per patient and whether there are cost differences in these cases, e.g. if one patient requires two cataract removals or multiple teeth extractions.

Protocols

Incorporate the relevant protocols of this product in the pricing, for example:

- The bill of the materials and consumables can be agreed upfront and priced for as the sum of each material, assuming the healthcare professionals will abide by these prescribed materials.

- The maximum theatre time can be agreed upon and priced for using this maximum theatre time.

Protocols (like the above) can also be informed by the historic data, while liaising with a healthcare professional to appreciate the clinical nuances.

Provider networks

Set up a network of efficient providers and negotiate favourable rates to assist in affordability of the overall product:

- Specialists
- Anaesthetist
- Pathology labs
- Radiology.

The negotiation strategy should include that these products enable a new market to be channelled to these providers...

...while appreciating that these are not medical scheme members, but cash paying patients.

Determine the healthcare cost

The healthcare cost per procedure would represent the sum of the following:

- Hospital cost
- Medication cost
- Specialist fee
- Anaesthetist fee
- Pathology fee
- Radiology fee.

The healthcare cost should be sufficient to cover all the fees, and there is no cross-subsidisation mechanism.

Expenses

The following expenses need to be added to the healthcare cost to build the Prepaid Global Fee:

- Administration fee
- Bank charges
- Risk margins
- Profit margin.

Allowance for commission cannot be loaded into the price as this product is not a financial product, and therefore a financial intermediary or broker cannot sell this product. Although it can be argued that a healthcare provider or specialist who recommends this as a funding solution to a patient deserves a financial reward or some form of commission for the referral, under South African regulations healthcare providers may not earn commission.

Tax

Value-added tax needs to be added to the final price.

Rounding

The final sales price should be rounded (perhaps to the highest R100), as well as each agreed tariff for each provider.

Future prices

The components of the Prepaid Global Fee should increase with inflation every year to align with the inflationary practice in the private healthcare market.

Competitive Comparison

A competitive comparison would be difficult to perform as similar products are unlikely to be available in the market.

And if there are comparable products in the market, it is unlikely that the cost breakdown would be publicly available.

[Total 15]

1(iv) Outline various ways how the price can be reduced to support affordability, stating any deviations from the benefit design philosophy in doing so. [15]

The candidates who performed well in this question structured their answers in a way to address the dual instruction of the question.

Limit the length of stay included in the price and apply per diem rates after the Length of stay limit has been reached.

The actuary can limit the length of stay for a specified number of calendar days' treatment in hospital, which will be included in the price.

The specified number of calendar days can vary by each Prepaid Global Fee, for example the length of stay limit can be 1 day for a Tonsillectomy, but 3 days for an appendix removal.

A fixed daily fee (per diem fee) surcharge can be levied for additional days' treatment in hospital following the length of stay limit.

The fixed daily surcharge amount can vary by each Prepaid Global Fee, however the amount per day can remain the same within a Fixed Fee Category.

This price reduction mechanism deviates from the benefit design philosophy as follows:

- **Certainty:** it is not certain whether the patient will exceed the length of stay limit or not, and therefore the cost of the medical procedure is not certain
- **Prepaid or upfront payment:** the certain part is paid upfront, but if the length of stay limit has been reached, the balance (i.e. out-of-pocket expenditure) is paid in arrears
- **Out-of-pocket expenditure:** if the length of stay limit has been exceeded, it will result in an out-of-pocket expenditure

Exclude certain costs such as the doctor's account, radiology, pathology or prosthesis.

The actuary can include the following in the Prepaid Global Fee that purely relates to costs incurred by the hospital:

- nursing
- theatre time
- ward fees
- medicine
- consumables (syringes, gloves, plasters etc).

While the actuary can exclude (some or all of) the following from the Prepaid Global Fee that are fragmented from the hospital costs:

- doctor's account
- radiology (x-rays or scans)
- pathology (blood tests)
- prosthesis
- take home medication.

This price reduction mechanism deviates from the benefit design philosophy as follows:

- **Certainty:** only the hospital cost is certain in amount, while the excluded amounts are not certain.
- **Prepaid or upfront payment:** only the fee related to the hospital cost is payable upfront, while the excluded components are payable in arrears.
- **Out-of-pocket expenditure:** The excluded components would be experienced as out-of-pocket expenditure with uncertain magnitude.

Allow the patient to purchase with a loan.

By allowing the patient to purchase the Prepaid Global Fee with a loan is not technically a price reduction mechanism, but rather a mechanism to spread out the payment of the Global Fee.

Depending on the licenses available to the issuer of the Prepaid Global Fee, the issuer can either offer the loan to the patient directly, or partner with an external bank to grant loans for these Prepaid Global Fees.

This price reduction mechanism deviates from the benefit design philosophy as follows:

- **Certainty:** The amount of the Prepaid Global Fee remains certain, however, depending on the terms of the loan (i.e. the interest rate) the patient can end up paying more than the Global Fee amount, which makes the interest portion uncertain.
- **Prepaid or upfront payment:** In the eyes of the patient this product is no longer paid upfront, but rather paid in instalments in arrears.
- **Out-of-pocket expenditure:** The interest portion of the loan becomes a series of out-of-pocket expenditure.

Exclude complications.

The Prepaid Global Fee could include the price that relates to an uncomplicated case, and if there are complications, then the costs above the Fee would not be covered, and will result in out-of-pocket expenditure.

This price reduction mechanism deviates from the benefit design philosophy as follows:

- **Certainty:** This product provides certainty in cost when there are no complications, but any costs incurred as a result of the complications are uncertain.
- **Prepaid or upfront payment:** The certain portion of the Fee remains payable upfront, while the costs related to the complications would be payable in arrears.
- **Out-of-pocket expenditure:** The costs related to the complications will be an out-of-pocket expenditure for the patient.

Exclude higher levels of care.

The Prepaid Global Fee could relate to recovery in the general ward, while any costs associated with care required in higher levels of care (e.g. high care ward or the intensive care unit) will be excluded.

This price reduction mechanism deviates from the benefit design philosophy as follows:

- **Certainty:** This product provides certainty in cost when higher level of care is not required, but any costs incurred as a result of higher levels of care are uncertain.
- **Prepaid or upfront payment:** The certain portion of the Fee remains payable upfront, while the costs related to the higher levels of care would be payable in arrears.
- **Out-of-pocket expenditure:** The costs related to higher levels of care will be an out-of-pocket expenditure for the patient.

Other valid considerations

- Introduce strict provider networks
- Include strict formularies.
- Restrict to certain age groups (for example, excluding the high-risk cohorts).
- Do not proceed with a particular procedure in its entirety.
- Offer the care in a different country if this is more affordable.
- Lower the profit requirement (which means the benefit design remains intact).
- Lower the expenses if possible (which means the benefit design remains intact).
- Sell at a loss and rely upon cross-subsidisation from other products.
- Introduce monetary limits.

[Total 15]

QUESTION 2

- 2(i) Discuss, with reference to the graphs above, the extent and effect of anti-selection faced by the South African medical scheme industry. Define all terms used in your discussion. [15]**

Candidates made great use of the graphs to point out valid trends on the topic of anti-selection and used these well to support their statements regarding anti-selection in the South African medical scheme industry.

Candidates who addressed the second instruction of the question by defining all terms used scored well. Some candidates defined terms that were not relevant to the scenario set out. E.g. defining the statutory solvency requirements where clearly not related to the scenario.

Definitions of terms used in the discussion:

- **Anti-selection:** Anti-selection occurs when a member obtains medical scheme cover because he/she believes that his/her risk is higher than the medical scheme has allowed for in the pricing. Anti-selection is also recognised as the tendency for sick or sub-standard lives legitimately to take up options providing additional cover without evidence of health. Anti-selection relates to the rational behaviour of members rather than illegal or fraudulent behaviour such as non-disclosure.
- **Prescribed Minimum Benefit:** Prescribed Minimum Benefits (PMBs) are a set of defined benefits to ensure that all medical scheme members have access to certain minimum health services, regardless of the benefit option they have selected. The aim is to provide people with continuous care to improve their health and well-being and to make healthcare more affordable. PMBs are a feature of the Medical Schemes Act, in terms of which medical schemes have to cover the costs related to the diagnosis, treatment and care of any emergency medical condition; a limited set of 271 medical conditions (defined in the Diagnosis Treatment Pairs); and 26 chronic conditions (defined in the Chronic Disease List).
- **Open medical scheme:** Open medical schemes are open to the public and anyone can join if they are over 18, not currently a member of another medical scheme and can afford to pay the monthly contributions.

Restricted medical scheme: Restricted (also known as closed) medical schemes are administered on behalf of companies for their staff and their families, or can be joined by people working in a particular industry.

Anti-selection has been identified by stakeholders to be the primary driver of the high inflation of medical scheme contribution rates experienced in the last decade, undermining both the sustainability and affordability of medical schemes.

An analysis of the demographics of medical schemes from the Council for Medical Schemes annual reports show that medical schemes are significantly older than the general South African population.

From Figure 1 it is apparent that the medical scheme population is significantly older than the general South African population, with medical schemes carrying an increasing percentage of the South African population by age.

For example, Figure 1 illustrates that 35% of South African males over 80 belong to medical schemes, while only 8% of males between ages 20–24 are covered.

Figure 1 also highlights the extent of anti-selection by females in their childbearing ages, with the percentage of females covered by medical schemes being about 30% higher than that of males during the ages of 25–39.

The **Prescribed Minimum Benefit** package includes almost all maternity care, and thus, it has become a common phenomenon for women to join a medical scheme to have their children and to leave if/when the children are healthy.

Figures 2 and 3 compare the age distribution for medical schemes members between 2006 and 2017 for **restricted** and **open schemes** respectively. From these figures the ‘twin peaks’ phenomenon is apparent.

This is due to the anti-selective effects mentioned above, exacerbated by the lower propensity by parents to cover older children (as well as young adults who no longer qualify to be dependants on their parents’ medical scheme not taking up membership of their own).

This is likely to be due to affordability and the fact that they can enter up to the age of 35 without penalty. This is as per the definition of late joiner penalties set out in the regulations to the Medical Schemes Act.

What is most concerning from the figures is the extent of ageing that the open medical schemes have experienced in comparison to the restricted schemes. While the restricted schemes have gained younger and healthier lives between 2006 and 2017, the reverse is true for open schemes, which are highly exposed to risks of anti-selection.

For example, in 2006, 17.1% of restricted scheme members were below age 35. By 2017, this figure had increased to 24.6%. In comparison, the percentage of open scheme lives below age 35 had decreased from 39.0% in 2006 to 28.1% in 2017.

These profile shifts have manifested in increasing healthcare expenditure, which have been borne by open medical scheme members in the form of higher contribution rates.

The differences in experience between the open and restricted schemes is substantiated when analysing claims between lives that join individually and those that join as part of an employer group...

...as well as those employer groups who have allowed their staff to choose between their restricted scheme and an open scheme, referred to as split risk arrangements.

Individual members typically have an older age profile and higher chronic prevalence than employer group members do.

This difference in age profile will also translate into the claims experience with individual members claiming more than group members (after adjusting for age, gender and chronic status).

The impacts of anti-selection manifest in a deteriorating risk profile for medical schemes, leading to higher claims, which must be funded by increasing contributions.

Medical scheme contribution inflation has been outstripping the consumer price index (CPI) across the industry – prior to the COVID-19 outbreak.

This effect is greater for open schemes than for restricted schemes and is a result of the trends discussed above.

This unsustainable inflation undermines solidarity in two key ways:

- it prevents (by acting as a barrier for) new members from purchasing cover and
- it encourages medical scheme members to buy down to less expensive benefit options or withdraw from coverage altogether.

This is most likely to affect younger and healthier beneficiaries, or lower income earners who are most price sensitive.

[Total 15]

2(ii) Outline the underwriting tools available for South African medical schemes to counter anti-selection. [10]

This was a straightforward bookwork question about underwriting tools that medical schemes can utilise. Most candidates knew their bookwork and answered the question very well.

Better candidates made the point that schemes could choose whether to implement these measures or not.

Some candidates discussed other mechanisms to counter anti-selection such as benefit design elements and pricing structures, but these discussions did not attract credit as these are not underwriting tools.

The Medical Schemes Act permits the following tools to manage anti-selection:

- Late joiner penalties that can be applied from the age of 35
- Condition-specific waiting period of up to 12 months
- General waiting periods of up to 3 months

Late joiner penalties

A late joiner penalty may be applied to the portion of a member's contributions related to the principal member or a dependant who joins a medical scheme after the age of 35.

Such penalties may continue to be applied following the transfer of a member to another medical scheme.

An amnesty period applied to late joiners who joined a medical scheme before 1 March 2001.

Creditable coverage means any period in which a late joiner was:

- a beneficiary of a medical scheme
- a beneficiary of an entity doing the business of a medical scheme which, at the time of his/her membership of such entity, was exempt from the provisions of the Act
- a uniformed employee of the South African National Defence Force, or a dependant of such employee, who received medical benefits from the SANDF
- a beneficiary of the Permanent Force Continuation Fund.

But excluding any period of coverage as a dependant under the age of 21 years.

A late joiner means an applicant or the adult dependant of an applicant who, at the date of application for membership or admission as a dependant, as the case may be, is 35 years of age or older, but excludes any beneficiary who enjoyed coverage with one or more medical schemes as from a date preceding 1 April 2001, without a break in coverage exceeding three consecutive months since 1 April 2001.

A medical scheme may apply late joiner penalties to a late joiner and these penalties must only be applied to the portion of the contribution related to the member or any adult dependant who qualifies for late joiner penalties.

The contribution penalties have been capped according to the applicable penalty band:

- 1 to 4 years: $5\% \times \text{contribution}$
- 5 to 14 years: $25\% \times \text{contribution}$
- 15 to 24 years: $50\% \times \text{contribution}$
- 25 + years: $75\% \times \text{contribution}$

For the purposes of calculating which penalty band to apply the following formula can be used:

The number of years referred to above = [the age of the late joiner at the time of his/her application for membership or admission as a dependant] minus (35 + [the number of years of creditable coverage which can be demonstrated by the late joiner])

The onus is on the late joiner to provide proof of creditable coverage.

Sufficient proof includes medical scheme membership certificates and a sworn affidavit in which he/she declares:

- the relevant periods in which he/she was a member or dependant and the name or names of the relevant medical schemes or other relevant entities corresponding with such periods; and
- that reasonable effort has been made to obtain documentary evidence of such periods of creditable coverage, but have been unsuccessful.

Waiting periods

A condition specific waiting period for a maximum of twelve months, during which no benefits are payable for a condition for which medical advice, diagnosis, care or treatment was recommended or received within a twelve month period prior to the date of application for membership.

A medical scheme can ask the applicant for a medical report only in respect of any condition for which medical advice, diagnosis, care or treatment was recommended or received within the last 12 months.

A general waiting period of three months, during which no benefits are payable.

The waiting periods do not apply to the Prescribed Minimum Benefits unless the member was not a member of a medical scheme during the 90 days prior to the date of application for admission.

No waiting periods can be applied if a beneficiary applies for medical scheme membership within 90 days of termination from previous medical scheme if the reason for changing medical schemes is due to:

- a change of employment
- an employer changing or terminating the medical scheme of its employees, in which case the transfer must occur at the beginning of the financial year, and reasonable notice has been given to the scheme to which the application has been made for the transfer to occur at the beginning of the financial year.

However, existing waiting periods that have not yet expired which were applied by the previous medical scheme can be carried over for the unexpired duration.

No waiting periods can be imposed on a beneficiary who changes from one benefit option to another, but existing waiting periods can still be applied.

No waiting periods can be applied to a child born during the period of membership.

The rationale behind the waiting period provisions is that the condition-specific waiting period should only be applied once in a person's lifetime, provided that the member does not remain uncovered for a period of 90 days or longer...

...while the general waiting period is a disincentive against "scheme hopping".

[Total 10]

2(iii) Explain the effectiveness of the underwriting tools outlined in part (ii). Include an explanation of how you would assess the effectiveness of each underwriting tool. [12]

Most candidates struggled to assess the effectiveness of each underwriting tool.

Many described the tools and how they work and why they were introduced into the environment, which was a repeat of the previous question for the most part.

Better candidates could identify ways in which the underwriting tools could be evaluated but unpacking how these underwriting tools are used and identifying the impacts on the cohorts affected against a comparator group.

Candidates introduced other concepts into their responses which were not related to underwriting such as income cross subsidies and contribution table structures which wasted time.

All underwriting tools

A simple assessment of all underwriting tools is to calculate the percentage of members where such restrictions have been applied and start the assessment by determining the significance of its application.

Perform this simple calculation separately for new entrants in a given year, and all beneficiaries in a given year per underwriting tool.

It is likely that only a small percentage of new members receive a waiting period. As underwriting is discretionary, competitive pressures compelling schemes to waive waiting periods may contribute to these low levels.

Such an investigation is likely to indicate that current underwriting tools are ineffective as risk mitigation tools to protect schemes from anti-selection as the large majority of members are able to enter the scheme without waiting periods or late joiner penalties, despite the levels of anti-selection observed in the industry.

Late joiner penalties (LJPs)

The later in life that members join a medical scheme, on average the higher the claims costs and contributions will be.

A late joiner penalty (LJP) should theoretically be set at least at a level so that the higher claims costs are recovered by the scheme through the higher contribution.

When doing this calculation, allowance should be made for expected mortality rates, future claims inflation and investment returns.

A theoretical requirement can be calculated using claims costs by age to construct a theoretical LJP structure.

The LJPs can be calculated by age band using the present value of expected future claims divided by the present value of expected future contributions.

Expected values can be based on risk adjusted claims curves and allowing for mortality and discounting. Risk adjustment can be based on age, chronic conditions and other factors reflecting differentiators of claims experience.

However, the above assumes that there is no anti-selection by members who only join later in life and are subject to an LJP. One would expect there to be some form of anti-selection from members who are given an LJP when joining a scheme as only members who really need the medical care would be willing to pay the LJP.

The analysis can account for this by comparing the risk-adjusted claims of joiners that received an LJP to the risk-adjusted claims of those that did not receive an LJP.

Such an analysis is likely to show that the members who did receive an LJP claimed between 10% and 20% more after adjusting for age than those that did not receive an LJP.

This difference is also likely to increase as the LJP increases.

In order to compensate schemes for taking on this anti-selection risk, the theoretical LJP should thus be increased in the order of 10% to 20%.

The quantum of the South African medical scheme LJP can also be compared to that applied in other private health sectors.

Condition-specific waiting periods

Many serious and high-cost conditions require treatment over several years, or even the lifetime of the member. (Some examples include rheumatoid arthritis, ulcerative colitis, haemophilia, Crohn's disease and multiple sclerosis.)

These thus have significant long-term financial consequences for schemes, and the current 12-month condition-specific waiting period (CSWP) is not sufficient to counter the effect of anti-selection for these high-cost long-term conditions.

Similarly, medical schemes face significant cost when obliged to fund certain expensive drugs required by rare disease patients.

The prevalence rates can be assessed across all chronic conditions and it can be determined whether the increasing prevalence rates can be explained by natural ageing of a Scheme or not.

To demonstrate the impact of the inadequacy of the CSWP as a tool for medical schemes to protect against adverse claims experience, the gross loss ratio (calculated as claims/contributions) can be compared between new lives joining a scheme with and without the 12-month condition-specific waiting period, in their first three years of membership.

It can be expected that lives entering a Scheme with a CSWP should have a significantly lower loss ratio in Year 1 (due to the 12-month duration of the waiting period), than subsequent years once the CSWP has expired.

The loss ratios for these members in Year 2 and Year 3 should also be significantly higher when compared to new members without the CSWP.

In this context, a 12-month waiting period is expected not to be sufficient protection for the scheme and its members, as a person diagnosed with one of these conditions can wait out the period and then claim substantially more than they pay in contributions for the rest of their life.

General waiting periods

Comparing the claims experience of lives with and without the general waiting period should highlight similar inadequacies of the general waiting period.

The average annual claims experience of those with a general waiting period is expected to be higher (on a risk-adjusted basis accounting for age, gender and benefit option) for those with a general waiting period compared to those without a waiting period.

The higher average annual claims for lives with the general waiting period should be sufficient evidence that the majority of those joining schemes for the first time and those switching schemes largely do so on an anti-selective basis.

[Total 12]

2(iv) Outline other ways – apart from underwriting currently allowed by regulation - to combat anti-selection. [13]

The results of this question were disappointing while mixed where many candidates failed to provide the obvious options, for example of risk rating. As above some candidates introduce the structure of the contribution tables as a method. Others talked to benefit options and limits which are not applicable.

Those that did well identified the clear methods and explained how they would be used to combat anti-selection.

Risk rating of contributions

Risk rating contributions is the most obvious tool available to counter anti-selection across medical schemes.

This will not only ensure that the level of contributions reflect the underlying risk profile of each applicant, but it will also encourage younger and healthier lives to purchase coverage earlier, particularly if the age rating is based only on age at entry.

However, risk rating is unpopular in healthcare insurance markets of higher income countries, as consumers and policymakers perceive it to be unfair practice as older members who need the cover generally are less able to afford the significantly higher risk rated premiums.

Moreover, risk-averse consumers are likely to prefer flat premiums that do not change with health status, given that health status is most likely to deteriorate with age.

Most importantly though, risk rating goes against social solidarity and Universal Healthcare principles, which aim to protect those most vulnerable.

This could be addressed by risk rating contributions on the basis of age at entry into the medical scheme market. This is effectively the same as the LJP but being applied earlier than age 35 with more appropriate loadings.

Risk equalisation

Where community rating is an inherent characteristic of the health insurance market, a risk equalisation fund (REF) is necessary to equalise risk amongst insurers.

While the REF may not mitigate anti-selection at an industry level, a REF allows for an equitable distribution of the demographic profile across insurers to mitigate the impact of anti-selection at an individual insurer level.

A REF will also hamper the incentive for insurers to compete on risk selection (cream skimming) but rather compete on quality of services provided and contribution rates through better risk management.

Further, risk equalisation can promote social solidarity at an industry level, by ensuring the healthy subsidise the sick irrespective of their choice of scheme or benefit option.

This is particularly relevant to the South African medical schemes industry, where current regulatory provisions require each of the current 254 benefit options to be self-sustaining, severely limiting the potential of cross-subsidisation.

Contribution subsidies

Contribution subsidies or penalties for not purchasing cover is another tool that policymakers may implement to combat selection problems, including the asymmetry of information created by community rating.

However, in practice it may be difficult to quantify the optimum level of the subsidy that would maximise take-up while limiting the cost on the public purse.

For this reason, contribution penalties may be more a more efficient tool.

However, penalties may be politically unpopular, difficult to enforce, and may conflict with the goals of social solidarity particularly if the low-income or high-risk groups are disproportionately affected.

A combination of penalties and subsidies may therefore be most effective and efficient to mitigate anti-selection.

The current medical scheme tax credit could be reformed to ensure that lower income households earning below the tax threshold also benefit from these subsidies.

For example, instead of a tax credit for personal income taxpayers, all individuals purchasing medical scheme coverage could receive a partial subsidy from government.

Including income as a factor in the REF can further promote income cross-subsidies and enhance social solidarity.

In addition, late joiner penalties should be bolstered to better reflect the claims experience of lives who defer coverage.

This will have the dual effect of promoting early entry into medical schemes and improving the demographic profile of the industry, while enabling medical schemes to better meet the claims expenses of late joiners without penalising the rest of the risk pool

Contribution discounts can also be offered to those below age 35.

However, it is critical to note that there is a real risk that the costs of this will not be fully funded by the number of new young joiners.

This will then mean that the costs of the contribution discount will have to be borne by older members.

This will erode risk-cross subsidies from the young to the old inherent in the social solidarity framework of medical schemes.

Further, current late joiner penalties are already acting as a form of premium discount to those below age 35, yet they have proved to be unsuccessful in attracting young lives into the medical scheme environment.

Any contribution discount to attract new young joiners should thus be very carefully designed, together with schemes and administrators, to ensure that the benefits outweigh the costs to schemes and their members.

Similarly, waiting periods discourage anti-selection and keep premiums affordable.

However, the current structure of waiting periods in South Africa is ineffective and needs to be lengthened, particularly for pre-existing chronic conditions.

Exclusions

While exclusions relating to pre-existing conditions is a tool used by global insurers to combat anti-selection, these are unlikely to be effective in South Africa due to PMB regulations.

Further, consumers may perceive exclusion of high-cost conditions such as cancer or AIDS, as unfair, as these are often the very conditions for which insurance is most needed.

Such exclusions also work against social solidarity and Universal Healthcare principles, as the vulnerable are left exposed.

Policies across most developed countries permit exclusions for certain primary care services, but limit exclusions for higher cost services.

Mandatory membership

Another mechanism to address anti-selection is to mandate membership for a defined set of common benefits across all schemes for all those in formal employment earning above a defined income threshold.

Further, given the maturity and magnitude of medical schemes in South Africa, completing the partial reforms to develop an SHI system is the most feasible pathway towards Universal Healthcare.

Mandatory membership may be justified in healthcare insurance markets on the basis that this promotes social solidarity by enabling an equitable distribution of payments for health services.

Further, a mandatory private insurance sector may be used as a foundation to build a national health insurance system. This may be done by extending the mandate for coverage from the private sector to the public sector as the public sector evolves.

It has been estimated that prices in a voluntary environment are some 17%–23% more expensive than they would be under mandatory cover.

Similarly, it is estimated that open scheme contributions could be lower by 23% in an environment without anti-selection.

The influx of healthier and younger lives will not only have the direct once-off impact of significantly reducing medical scheme contributions, but will improve the demographic risk profile of schemes.

This will strengthen schemes' resilience to claims volatility and improve the long-term financial sustainability of the industry.

[Total 13]

END OF MARKING SCHEDULE