Actuarial Society of South Africa

MARKING SCHEDULE

19 MAY 2020

Subject F201- South African Health and Care Specialist Applications

QUESTION 1

1(i) State what are Prescribed Minimum Benefits (PMBs), the reasons why medical schemes are required to provide PMBs, and how to identify conditions covered and treated as a PMB. [6]

This question required candidates to describe the prescribed minimum benefits which was a standard bookwork question. Most candidates could demonstrate good knowledge about PMBs, while those who scored better could include some of more practical considerations around the operation of PMBs. Candidates scored well in this straight forward bookwork question.

What are PMBs

The Prescribed Minimum Benefits (PMB) are a set of defined benefits that must be provided to all members on all medical scheme benefit options.

PMBs are a feature of the Medical Schemes Act, in terms of which medical schemes must cover the costs related to the diagnosis, treatment and care of:

- any emergency medical condition;
- a limited set of 270 medical conditions (defined in the Diagnosis Treatment Pairs);
- and- 25 chronic conditions (defined in the Chronic Disease List).

Reasons why medical schemes are required to provide PMBs

The aim of PMBs is to provide people with continuous care, both in and out of hospital, to improve their health and well-being…

…by ensuring that benefits are available to manage conditions that would result in significant costs if not managed properly.

There are two main reasons why medical schemes are required to provide PMBs:

1. To ensure that medical scheme beneficiaries have continuous healthcare. This means that even if a member's benefits for a year have run out, the medical scheme must pay for the treatment of PMB conditions.

2. To ensure that healthcare is paid for by the correct parties and from the risk pool not medical savings accounts. Medical scheme members with PMB conditions are entitled to the specified treatments and these must be covered by their medical scheme from the risk pool (and not out of pocket), even if the patients were treated at a state hospital.

Other reasons include:

1. To provide minimum healthcare to everybody who needs it, regardless of their age, state of health or the medical scheme cover option they belong to.

2. PMBs have a part to play in ensuring that medical schemes remain financially healthy. When beneficiaries receive good care on an ongoing basis, their general wellness improves, resulting in fewer serious conditions that are expensive to treat.

3. To protect the interests of medical scheme beneficiaries by ensuring, for instance, that schemes first cover essential treatments before providing benefits for discretionary services.

PMBs are there to ensure that schemes do not offer cheaper cover by removing benefits, particularly those benefits that might affect the sick and elderly.

PMBs play a role in ensuring solidarity and cross subsidy within the medical schemes environment.

How to identify and treat conditions that are covered as a PMB

Annexure A to the Regulations to the Medical Schemes Act provides a list of conditions identified as Prescribed Minimum Benefits. The list is in the form of Diagnosis and Treatment Pairs (DTPs).

A DTP links a specific diagnosis to a treatment and therefore broadly indicates how each of the approximately 270 PMB conditions should be treated. The treatment and care of PMB conditions should be based on healthcare that has proven to work best, taking affordability into consideration.

Should there be a disagreement about the treatment of a specific case, the standards (also called practice and protocols) in force in the public sector will be applied.

The treatment and care of some of the conditions included in the DTP may include chronic medicine.

Medical schemes often have a list of conditions – such as cosmetic surgery – for which they will not pay, or circumstances – such as travel costs and examinations for insurance purposes – under which a member has no cover.

These exclusions, however, do not apply to PMBs.

PMBs are concerned about the diagnosis and treatment of a condition; not how the condition arose.

PMB services may be delivered through Designated Service Provider (DSP) networks which limit where beneficiaries may access care for these conditions.

Investigation of a suspected PMB does not need to be paid as a PMB unless the investigation confirms the condition is indeed a PMB.

1(ii) Outline the risks that GoodCare Medical Scheme is exposed to when using fee for service reimbursement for maternity benefits. [3]

Part (ii) required candidates to identify the risks of using a fee for service reimbursement model for maternity benefits. Stronger candidates could understand and explain the nuances of a fee for service model without reverting to over-servicing and charging in a blanket and exaggerated manner, fraud and mismanagement issues. Those which could demonstrate the nuances tended to score well in what was another straight forward bookwork question.

In fee for service reimbursement structures there is a financial reward for providing more services, such as additional consultations and scans.

This reward presents an agency conflict for the provider as there is a financial incentive to provide more services than is necessary.

This can lead to the phenomenon of over servicing. This issue is exacerbated with new technologies that might be deployed by the provider concerned such as ultrasound scans.

There is a risk that service providers over-charge for services due to the weak bargaining position of patients and the lack of contracted rates with medical schemes.

Fee for service means that providers of care work as individuals instead of in teams, care is not coordinated between them resulting in waste and poor clinical outcomes. There is no joint accountability.

Using more expensive new medical technologies and passing the higher costs directly to the scheme through risk funded benefits (and applicable to savings accounts).

Although the scheme can implement referral pathways in a fee for service structure, members may resist these and bypass any referral system whereby patients directly access specialist care where this is not necessary.

Fraud is more easily perpetuated within a fee for service reimbursement environment.

1(iii) Describe the factors you would have considered when designing and pricing the maternity benefit package for the 2020 benefit year. [18]

This question asked candidates to explain their approach to designing and pricing the new maternity benefit, noting that the benefit was introduced in 2020 and therefore this work was implicitly to be done last year (2019).

The question required candidates to apply the team approach to maternity care to both product design and pricing, recognising how it impacted each of these processes. Better candidates were able to apply the remuneration model and consider factors relevant to the design.

Marks were awarded where designing and pricing points were given in the context of the Scheme and with reference to the maternity benefit structure being changed. Generic or unsubstantiated points were not awarded marks.

Review the medical scheme market of maternity benefits

Given that Goodcare is an open medical scheme, it is important to compare the benefits offered for maternity care against those offered by other open medical schemes and establish the similarities and differences.

Given that maternity benefits are a PMB, the variation in benefit designs between schemes should be limited.

If Goodcare has a significant membership comprising of employer groups participating in the scheme, then the comparison should include the relevant restricted schemes as an additional benchmark to compare benefits and the value proposition.

The comparison should be done at a benefit option level so that the various levels of care available can be considered for each type of option.

For example, more comprehensive options may have more consultations and scans available while the more affordable (entry) options may limit the number of consultations and scans, within the bounds of PMB obligations.

For competitors offering a fee for service maternity care package, compare the components of such benefits…

…including aspects such as reimbursement rates, whether the benefits are provided within a network of doctors and hospitals, any co-payments, any benefit limits and managed care requirements.

For those offering services within a hospital network, compare the size of the network, geographical spread of hospitals contracted for maternity services, and which options these apply to should be investigated to assess the levels of accessibility to the services.

The level of reimbursement, particularly for specialists, is a key factor to compare as specialists are likely to charge (significantly) in excess of the scheme reimbursement rate, depending on the benefit option.

Identify competitors offering a similar maternity benefit to that proposed by GoodCare, and the components of such a benefit.

Identify trends in maternity benefit packages over time to establish which elements of the benefit packages have changed over time and how these have changed…

… for example increased allowance for the costs of specific scans as a means to reduce the risk of not identifying critical conditions such as down syndrome.

If the scheme has a partner gap cover provider that is sold alongside the scheme, it would be useful to review this gap cover product and other products in the market as members who have such products may be able to claim for the in-hospital specialist costs that are not fully covered by the medical scheme.

Identify and analyse maternity benefit differentiators for example private ward coverage, 3D scans, number of consultations, pre- and post-natal classes, etc.

The cost of delivering maternity benefits on a fee for service basis

Analyse historic claims data based on the fee for service reimbursement for each benefit option.

Calculate the frequency and severity of claims per benefit type, for example, specialists, pathology, medications, etc.

Analyse the hospital claims data by hospital group and network, if applicable, and non-network hospitals.

Maternity hospital claims are usually on a per diem basis, therefore consider the claims experience by first day and subsequent days.

Analyse the claims by factors including patient age, number of chronic conditions, high risk pregnancies, twins, complications from previous births.

Consider the claims experience for the period before the birth, the actual birth and then post the birth as each are likely to vary and be influenced differently by a change in model.

Consider the claims experience for natural births versus caesarean births and the trends of incidence of each type of birth.

Analyse the claims experience for the new-borns to identify which of these are high cost cases, for example neonatal ICU admissions for premature births.

Identify the various clinical indicators that are defined to be used for the care team model, for example complicated pregnancies due to co-morbid conditions and stratify claims experience by these indicators.

Introduction of a care team based model

Define the model – the scheme wants to introduce a team based model as a benefit enhancement for maternity benefits that is marketable to current and new members and determine if the model will cost the scheme additional monies (or result in potential cost savings) and better clinical outcomes.

Define how the model will be implemented before birth, for the actual birth and post birth.

Establish how the model applies to the mother and the infant, if at all.

Identify the components of the care team model including the various medical practitioners, hospital and other services and how this differs to the current complement of services.

Establish the frequency and severity of claims costs under this model.

Allow for the expected 'efficiencies' associated with the model in the frequency and severity…

… for example fewer or more specialist visits, shorter in hospital stay, etc.

Stratify the membership for different types of cases, for example, there may not be significant cost benefit for uncomplicated cases, however for co-morbid cases there could be reductions in the frequency and severity of costs if managed appropriately.

Examples could include shorter time in hospital, fewer consultations or possibly more consultations depending on the types of cases, change in mix of specialists doing consultations (e.g. more use of GPs and midwives / nurses).

Allow for potential changes in mix in natural versus caesarean birth rates and the corresponding costs involved.

Allow for potential changes in mix of uncomplicated versus complicated pregnancies and the corresponding costs involved.

Allow for differences in reimbursement rates of the medical practitioners and hospitals providing the maternity care services, noting that team based care will usually involve explicit contracts at agreed rates.

Reimbursement model for care teams that is outcomes based

As the envisaged reimbursement model is designed to improve clinical outcomes, the scheme will need to define what outcomes would lead to additional remuneration…

…for example lower levels of neonatal ICU admissions, lower levels of post-delivery complications, lower levels of maternal mortality, etc.

Establish the basis on which reimbursement is made and which outcomes are specifically measured for this purpose, for example is there a baseline fee for the whole maternity episode,

is it paid monthly or once off, how are complications dealt with, are there any carve outs or exclusions.

Examples of outcomes measures could include the neonatal admissions, rate of caesarean section deliveries, lower levels of complications from caesarean deliveries, higher attendance rates at post birth consultations.

Consider improvements in outcomes that could arise as a result of this model.

Establish if the model applies to the new-born infant as well as the mother, or only to the mother.

Consider the proportion of births that can be covered under this model, given it relies on an explicit contracting approach.

Identify the implications if members do not use the contracted teams.

Allowing for the expected volumes and profile of lives expected to utilise the benefit

Establish a period over which to analyse maternity cases and claims costs, for example the past three years, depending on how large Goodcare is. The period should be sufficient to give insight into claiming trends and relevant to reflect the most experience.

Calculate the number of maternity events per year and per benefit option to establish the claim rate for maternity benefits.

Identify the profile of lives that have claimed, for example by age as there is a strong correlation between age and childbirth.

Identify other variables explaining claiming patterns such as region, income levels (if data available, for example on an income rated low cost option), length of membership with the scheme, family size, chronic conditions, etc.

Calculate the number of maternity cases per claiming female and the length of time between maternity events to establish likely recurrence and timing.

Identify the range of costs for maternity events, for example for twins, premature births, complications associated with co-morbidities or older age, and other factors resulting in higher costs.

Identify the profile of the total current female membership of the scheme including those who have not claimed for maternity benefits on the scheme or at all (i.e. no dependents registered with the scheme).

Based on the actual experience, estimate the expected volume of maternity cases by considering the current membership of females and their likely rate of maternity cases based on age.

Assess the likely volume by taking account of the number of births that these members are likely to have while being members of the scheme before leaving, i.e. their duration on the scheme.

Consider the scheme's underwriting as it pertains to maternity as this will affects levels of anti-selection.

Allow for potential new joiners and the expected profile of these joiners (next section).

Allow for potential exits based on the benefit change (next section).

Consider the expected volumes on a per benefit option basis to take account of varying rates of maternity cases and expected cost differences per option., as well as differences in member age and gender profiles by option.

Implications on new business volumes and exits

As a significant life event, particularly for lower risk lives, it could be expected that the introduction of care teams might encourage new members to join who require maternity benefits.

Prospective members may be more likely to have higher rates of complications as this model of care caters more effectively for complex cases, and therefore increases both expected new volumes and associated claim costs.

New members may be attracted to the scheme for this benefit and then exit the scheme once they have used the benefit. This would increase new business volumes and lapses.

Female members planning to start a family, or increase their family, may decide to join the scheme as a principal member with their spouse and dependents remaining on another scheme, resulting in higher claim ratios for that member versus if they had joined with an entire family contributing.

Members may choose to exit the scheme as they may find the benefit to be more restrictive on their choice of doctor and hospital.

Take account of general and condition specific waiting periods while considering the PMB requirements of the scheme's underwriting criteria. This will limit members ability to join the scheme while pregnant and claim for these benefits.

Other factors to consider

If the arrangement includes the costs for the new-born, how to allow for neonatal ICU costs is a critical consideration as these costs are infrequent but can be extremely high.

Allow for other costs of the model of care that may not be included in the above, for example co-ordination time and administration that may not be covered under the healthcare costs.

Allow for inflationary increases in tariffs over the period of analysis and for the next year for each element of the benefit package.

Consider inflationary increases for births that overlap calendar years.

The benefit options that this new model would apply to and the period of transition from the current model to the new model.

Increased operational costs as a result of investment required to implement and manage the new model of care.

1(iv) List in detail the data you would collect to perform this analysis. Include four (4) examples of outcomes measures that can be used to evaluate the performance of the team based care contract and the data required. [6]

This was a straightforward application question which required candidates to give detail on the data they would require and specify outcomes that could be measured for the evaluation of the new model. This required candidates to think of measures that would encapsulate what the team model is trying to achieve and specify the underlying data required.

Marks were given for lists of data fields regarding membership and claims data, testing candidates ability to go into detail on data requirements.

Membership and claims data are required for all claiming members over the period.

Examples of fields to include in the membership data:
- membership number
- dependant number
- benefit option
- gender
- chronic conditions
- age
- income level, if available
- date of joining the scheme
- date of exit, if applicable
- region
- underwriting information
- individual or group membership

Examples of fields to include in the claims data:
- ICD-10 code for diagnoses
- Benefit category
- Amount claimed
- Amount paid to member
- Amount paid to service provider
- Date of service
- Date of claim payment
- Date of claim receipt
- Provider type
- Provider name
- Hospital length of stay
- CCSA codes
- Tariff codes

Examples of outcomes measures can include:

- Mortality rate of maternity patients
    - Require the number of maternal deaths per period
    - Require maternal patients exposed to risk during same period

- Number of still births against the number of live births
    - Require number of still births and number of live births

- Number of deaths of infants aged 0 – 28 days against the number of live births
    - Require number of deaths for infants in the age band against live births in same age band per period

- Chronic disease indicators
    - Such as for diabetes (type I or type II and pregnancy induced), hypertension, etc.
    - Registration on chronic disease management programme

- Birth premature etc.
    - Number of weeks or days premature
    - Number of babies born such as twins, triplets, etc.

This data might not be available on the administration system for the medical scheme and may need to be collected directly from the care teams if they have such data…

Or from the existing managed care provider.

An assessment of the quality of data recorded will be important as this is a new initiative and it is therefore likely to require some iteration to get the appropriate quality and completeness of the data.

Prior year benefits schedule with prior benefit package and current year benefits schedule with new package.

Agreements with all service providers involved in the care model.

1(v) Identify the risks associated with this change and propose ways in which the scheme can manage these risks. [10]

Candidates that considered a broad risk management approach to introducing the new benefit scored well in this question, rather than those that focused on risk shifting or transfer mechanisms only.

The conventional risk management mechanisms for medical schemes can be applied to manage claims risks, taking account of the change in reimbursement arrangement.

These risk management mechanisms include:

- Pre-authorisation for hospital admissions and how these compare to the fee for service model

- Ensuring that minimum benefits continue to be covered appropriately as per the PMB requirements on a per benefit option basis

- Auditing of accounts to assess the reasonability of charges for the hospital account as well as for the out of hospital services

- Review of claims to identify fraudulent claims

Adverse claims experience

Depending on whether the model is on a fee for service basis and the risks are retained by the medical scheme, the scheme is at risk of adverse claims experience for existing members receiving benefits through this model with claim costs being higher than expected.

If the model involves an element of risk transfer to the care team, such as an episode fee, then adverse claims experience may be contained depending on the underlying risks to be retained.

This can arise from higher claim costs from claiming members whereby their cases may need more intensive care than may have previously been applied.

The episode may be risk based therefore if the risk profile of members goes up, for example older members or more members with chronic conditions, then the episode fees will increase.

Anti-selective joiners and leavers

The scheme is at risk of anti-selective joiners and leavers – members joining the scheme shortly before claiming for a maternity event (subject to the underwriting provisions) and members leaving shortly after a maternity event.

The scheme needs to ensure that underwriting provisions are correctly applied to new joiners. This would apply particularly for individual members who may change schemes when they need to.

Benefit option movements

Depending on the differences in the benefit package between the benefit options, members may buy up to a more comprehensive benefit in anticipation of a birth in order to access higher levels of benefits and then buy down thereafter. The increase in claim costs is unlikely to be offset by the increase in contributions in that year.

The scheme is at more risk of benefit option buy downs whereby claims costs are similar but contribution income is lower.

Monitoring the experience of benefit option movements at the start of each year and those allowable during the year would give insight into the frequency of these movements and which options members are moving to / from to isolate problematic anti-selection.

The scheme could also review its policy on option movements to restrict mid-year option movements.

Benefit implementation risk

This risk can be managed by regular claims review for these members, ensuring that the model has been correctly applied and the scheme charged correctly.

The scheme is at risk of the care model not being implemented as expected. The risk can be managed by regular review of service provider contracts and performance metrics against the claims submitted.

The scheme is at risk of receiving inadequate, incomplete or poor quality data which would make it difficult to fully assess the value of the model. The scheme should monitor the data quality on the regular basis.

If the scheme changes the fee-for-service arrangement to an episode fee the scheme would need to collect clinical information that is no longer available via the fee-for-service claims data.

An assessment of the quality of data recorded will be important as this is a new initiative and it is therefore likely to require some iteration to get the appropriate quality and completeness of the data.

Outcomes data should ideally be objectively verifiable and not subject to self reporting bias risk.

Member expectations

If the scheme is a first mover on this model, there is a risk that the implementation is more complex and time consuming than expecting, not yielding the benefits to members that were expected.

Members may not understand the benefit model and how it works so there may be more intensive servicing of members required.

Members may not be satisfied with the benefit model and complain, resulting in reputational risk.

Members may not be used to the team based care approach and may prefer their current model of going to whichever medical practitioners that they prefer.

Marketing

There is a risk that the benefit model is misunderstood by current and prospective members resulting in lapses or reputational risk.

Brokers may not understand the model and therefore not necessarily sell the scheme effectively to prospective groups and individual members that may need the benefit.

Brokers may target members and bring risk onto the scheme that is worse than expected resulting in higher claims costs.

Risk mitigation strategies such as ensuring marketing literature is easy to read and understand, customer surveys, training brokers, targeting certain groups of the population or brokers.

QUESTION 2

2(i) Discuss the most significant factors resulting in premium variation between different insurers for this type of cover for the local staff and expatriate staff. [25]

The examiners expected candidates to perform well in this question as a good understanding of the F101 and F201 bookwork were sufficient to generate numerous valid points.

Successful candidates were able to distinguish themselves by managing their time for this question and providing a wide variety of points with supporting examples. As this is a "discuss" question, strong candidates were expected to not only show which factors could result in pricing variations, but also demonstrate an understanding of how every factor could result in a higher or lower premium among insurers in different contexts.

The proposed solution for Question 2(i) below outlines a detailed discussion 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 and serves as a revision aid for future candidates who wish to attempt this subject.

The most significant factors resulting in pricing variation from different insurers for this type of cover are discussed below.

Benefit Design

Insurers could have benefit design or terms and conditions variations (such as waiting periods, exclusions, co-payments, etc.) that could lead to premium variations.

For example, one insurer could charge no co-payment for in-hospital treatment, while another could charge co-payments for certain in-hospital procedures…

…The insurer charging no co-payment would, all other factors being equal, offer a higher premium compared to the insurer that does impose co-payments.

Insurers can levy co-payments for out-of-hospital treatment, and where these are applied, but co-payment amount would vary by insurer which would in turn lead to premium variations.

Co-payment structures could also differ between insurers (such as fixed, stated amount versus percentage of medical bill) which would in turn lead to premium variations.

The policies could differ in terms of the benefit definition, i.e. whether the benefit intends to reimburse medical expenses, to pay out a lump sum based on an event, or to reimburse up to a certain limit. Insurers offering policies with various benefit definitions would lead to premium variations.

Insurers may treat cases for extreme surgical complications differently (e.g. cover in full or cover to a certain extent) which would in turn lead to premium variations.

Different insurers might include different non-negotiable value-added services (e.g. repatriation of mortal remains, or wellness programmes to encourage healthier lifestyles) and the cost thereof will be embedded in the premium which would in turn lead to premium variations.

Some insurers might offer limited benefit coverage in its benefit design with the intention to offer optional rider benefits, e.g. medical expense shortfall cover, which would lead to pricing variations with or without the optional rider benefits.

Some insurers could embed rider benefits in its benefit design, such as a waiting list plan (if the country in question has a health system where queues can be skipped), which would lead to premium variations between insurers.

Different insurers might offer flexible benefits while others do not, which would in turn lead to premium variations between insurers.

If policyholders settled the bill from the health event in cash, insurers might treat the claims process differently when the policyholder is claiming back. For example, some insurers would approve the claim at the amount deemed appropriate, resulting in a short payment – while other insurers might engage with the provider to negotiate the initial bill.

Risk Management

Insurers could have various levels of risk management maturity or techniques in operation that could impact the insurers' expected claims experience to various extents and in turn lead to pricing variations.

For example, some insurers could have strict claims management practices (e.g. requiring pre-authorisation) which would lead to a more favourable expected claims experience, all other factors being equal, and in turn lower premiums.

Furthermore, some insurers could apply claims management differently, e.g. if pre-authorisation was not obtained, some insurers could default the claim to a nil claim, while other insurers could levy a co-payment as penalty.

Points below relating to underwriting should be cross marked against the following question on underwriting:

Different insurers could also implement various underwriting measures as a risk management strategy which could impact the premiums in the following ways…

…the cost of underwriting could be loaded in the premiums directly…

…the underwriting measures could have been successful in attracting a majority of good risks, which in turn resulted in a positive historic claims experience, which in turn would result in a lower premium…

…the underwriting outcome for an applicant could be that he or she is considered a poor risk and the premium could be increased accordingly…

…which is unlikely to occur on a group basis, but underwriting could still be applied to a group to some extent and the outcome could be that the risk of the group as a whole is poor, and that the premiums have to be adjusted upwards.

As a risk management technique, some insurers could charge age-dependent premiums, which could result in premium variations.

Insurers could manage the risk of latent claims differently which could result in premium variations, for example, some insurers might accept claims that are submitted within 4 months after the treatment date, while other insurers might only allow 1 month for claims submission after the treatment date.

Healthcare Service Providers

Insurers might prefer (or channel policyholders to) different healthcare service providers with different (clinical or performance) outcomes, which effectively creates a provider **outcomes-based profile** differential between insurers which would lead to premium variations.

For example, the profile of service providers could relate to any attribute that addresses the outcome of the provider, such as mortality rate, re-admission rate, and medicine prescription practice. A different mix of healthcare service providers by profile will result in profile variations, and as a result lead to pricing variations.

Insurers might prefer (or channel policyholders to) different healthcare service providers with different billing behaviours, which effectively creates a provider **billing behavioural profile** differential between insurers which would lead to pricing variations.

For example, some service providers could bill excessively relative their peers for the same procedure, and if insurers prefer these healthcare service providers, then the historic claims experience is likely to be worse compared to other insurers, which would increase the premium relative to other insurers.

Some insurers could have a network of designated healthcare service providers in place, while other insurers might not – this **accessibility** to certain service providers could lead to different claims experiences and therefore pricing variations.

Insurers could also treat non-network provider utilisation differently, for example, some insurers might impose a co-payment when a healthcare service provider outside the network was utilised, while other insurers might default the claim to a nil claim.

There could be pricing differences due to geography, for example urban versus rural areas may have different quality facilities and ease of access.

Insurers will have different levels of ability and willingness to negotiate more favourable rates with the healthcare service providers. Those insurers with strong negotiation power to drive down healthcare cost (or at least curb healthcare cost inflation) will be able to offer lower

premiums, all other factors being equal, compared to those insurers who do not negotiate with healthcare service providers.

Depending on the public healthcare system in the African country in question, some insurers might wish to rely on (or channel or setup a network with) the healthcare service providers in the public sector that could make the premiums more affordable.

Although limited, the ability of the insurer to channel policyholders to providers could vary depending on the level of IT systems that is available in the country in question.

Cross-subsidisation Ability / Strategy

Insurers who possess the ability to cross-subsidise (perhaps due to historically good financial performance) can under-price premiums which would lead to health insurance premium variations relative to insurers who are unable to cross-subsidise.

For example, an experienced insurer with a large, profitable, existing book of business could be in a position to under-price their premiums to some extent for new policyholders with the anticipation to cross-subsidise the expected loss on the new business with the expected profit on the existing business.

For example, an insurer could have the strategy to cross-subsidise between various benefit categories which could enable the insurer to offer a premium that is less than the sum of the risk premium parts of each benefit.

For example, a composite insurer could have the strategy to cross-subsidise between lines of business, such as between group life and health – allowing the health business to be sold as a loss leader.

Lapse experience

Different insurers will have seen different lapse experiences, especially given that these products are not intended to be held on a long-term basis, but rather for the duration of the need (which in this case is a 3-year period). The variation in historic lapse experience would result in various assumed future lapse experience and would therefore result in pricing variations.

The higher the expected lapse rates, the worse the position of the insurer to charge lower premium rates. Although, this depends if most lapses occur before the new business strain has been recouped, or after.

The lapse experience would also differ for small urban areas where the insurer's good client relationship could assist the persistency, which would enable the insurer to charge lower premiums (which is generally a significant driver of retention) to keep the client.

Mix of business by main rating factors

A different mix of business by the main rating factors among insurers will result in premium variations.

A greater proportion of older policyholders will, all other things being equal, lead to higher claims rates, and in turn higher premiums.

A greater proportion of female policyholders (and assuming that maternity benefits are covered by the policy), will, all other things being equal, lead to higher claim rates from maternity claims, and in turn higher premiums.
A greater proportion of children and extended families, will, all other things being equal, lead to additional levels of cross-subsidy, and in turn lower premiums.

Advances in medicine

Insurers are likely to take different approaches as to how advances in medicine are taken into account in benefits. For example, the latest advances in medicine could result in a higher healthcare cost inflation (such as a new, expensive AI healthcare technology), or lower healthcare cost inflation (such as a new generic drug). Insurers with different allowances toward advances in medicine will result in benefit variations and therefore premium variations.

The insurers could be from different countries, and they might not be aware of how the medicine has advanced (or lack thereof) in the specific African country in question.

The availability of medicine and medical technology is also a factor. Countries will have varying levels of access to medicine and medical technology.

The extent to which the country is exposed to advances in medicine and health technology will determine the extent to which the exchange rate is driving healthcare cost inflation.

Changes in the cost of treatment

Each country could be exposed to different levels of healthcare cost inflation, and each insurer could allow for this differently as each insurer might have a different outlook on the future healthcare cost inflation to embed in the premium.

Treatment protocols

Insurers might have different treatment protocols that prescribe the appropriate treatment for major medical events, and these could result in pricing variations.

The differences in protocols could be linked to differences in the environment and technology at hand, and in turn will determine whether the protocols are more basic or advanced.

Regulation

Depending on the insurers' main geographical location, insurers will adhere to different regulatory restrictions (e.g. investment limitations on asset allocation)…

…and/or regulatory requirements (e.g. solvency requirements, or prescribed minimum benefits) which result in pricing variations.

Different countries will have various taxation differences, advantages and disadvantages, which will further result in pricing variations between insurers based in different countries.

Profit

Insurers will have different profit requirements and as a result profit margins loaded in the premiums will differ among insurers, and will lead to premium variations.

It is also possible for some insurers to minimise their profit margins if they intend to sell this product as a loss leader.

Expenses

Insurers would be subject to different expenses for various reasons that need to be covered by the premiums (in part or in full), and as such insurers will have different expense margins loaded in the premium, which will result in premium variations.

Some insurers could self-administer this business, while other insurers could rely on a third-party administrator and the cost of administration will differ by administration model and administrator.

Some insurers could have a more traditional administration style where claims are mostly accepted with paper a submission which is a more manual process that increases staff cost. Whereas other insurers could have a modern administration style where claims are submitted electronically or with bots, which is a more automated process that reduces staff cost.

If an insurer offers a wide-ranging multi-lingual call centre service, the expense loading for this could be higher to cater for the language variety relative to an insurer with a narrower range of languages.

Insurers could also have different margins for brokerage commission loaded into the premium as commission structures and commission levels could differ between countries, which could result in premium variations.

Insurers could also have exposure to different expense inflation depending on the country and a different outlook on future expense inflation to embed into the premium, which will result in premium variations.

Exchange Rate

Depending on the insurer's geographical location, there could be exchange rate differences applicable to the **premium**, i.e. the currency in which Grow pays the premium (likely to be ZAR) might be different from the currency in which the insurer operates. This will especially be different if one insurer fixes the premium in Grow's denomination, while another insurer fixes the premium in the insurer's denomination and the exchange rate fluctuates significantly since the premium was set.

Depending on the insurer's geographical location, there could be exchange rate differences applicable to the **claim amounts**, i.e. the African country's currency in which the healthcare service will be incurred might be different from the currency in which the insurer operates. This will especially result in premium variations among insurers if some insurers have fixed or

expressed the claim amount in the African country's currency, the insurer's currency or some benchmark currency (such as USD).

The expected exchange rate differences applicable to the claim amounts could be allowed for in the premiums, which would result in premium variations.

Premium Increase Conditions

Each insurer would have different premium increase conditions, which would result in future pricing variations among insurers.

The premium increase conditions could also be a function of the country's productivity and imported inflation via the exchange rate. Therefore, insurers in different countries are likely to have different premium increase conditions based on different economic dynamics.

Data Availability

Pricing variations might arise due to, all other factors being equal, insurers using different data sources to set the premiums...

…which could be due to data related to the country in question not being equally available to each insurer…

…or the quality of data in this country being sub-par where each insurer needs to make assumptions or apply judgment to generate meaningful insights for future projections.

There are various data sets to use by each insurer: economic data to inform inflationary assumptions, healthcare data to inform healthcare cost inflation, historic claims data to inform future claims experience, etc. It is unlikely that each insurer has the same quality data for each of these data sources, and therefore pricing differences can arise from the source data being used.

In addition, the data might reveal that the mix of claims between in-hospital and out-of-hospital might differ by country which would further contribute towards pricing differentials.

Insurer's view of the African Country's Risk Profile

Each insurer's view of the risk posed in the each of the African countries of coverage (e.g. whether there is significant risk posed by tropical illnesses, pollution levels or dangerous conditions) will differ, and will lead to different assumptions with respect to claiming likelihood, and as a result pricing variations.

Staff Group – Local Staff

The insurers might offer different premiums to the **local staff** as they would not require medical evacuation and out of country assistance as they are already based in their country of origin where they can access their local healthcare facilities…

…however, this will depend on the maturity of the health system and quality of healthcare service available in the specific African country…

…which may be poor given that most African countries are Third World or developing countries where economic growth is poor and the healthcare system is underdeveloped.

Insurers might also offer different premiums to include the local staff's dependants.

Staff Group – Expatriate Staff

Insurers could also offer different premium rates to the expatriate staff members as they are chosen based on their experience which could mean these employees are **professional** and may have an **older age** profile.

Professional employees could be an indication of belonging to a higher socio-economic class, which is a proxy for good health, which could result in favourably, low premiums for the expatriate staff members.

However, the **older age** profile could be a proxy for a worse health profile, indicating the need for a more expensive premium rate in expectation of a poor claiming experience.

Given that the expatriate staff members are allocated to a country in Africa for a 3 year period, it can be reasonably expected that the staff members would want their families to join in the country, and as a result expect the premium to include family coverage. Insurers could offer premium variations in allowing for families.

The expatriate staff members would expect to be evacuated back to their home country when they need to receive tertiary care – especially in the case of State tertiary care.

Other

The type and extent of any reinsurance used for example to limit high cost claims or to limit aggregate cost exposure for the insurer(s).

Differences in sales methods, for example local fronting offices with physical infrastructure, with varying sales commission structures.

Differences in each insurer's physical presence in each country and how these might need to expand or adapt to providing cover to Grow and its employees in each country.

Each insurer's different view of the risk posed by the nationality of the policyholder might result in pricing variations.

Each insurer's different view of how the risk magnitude differs based on the length of coverage might result in pricing variations.

Each insurer's different view of the risk posed by the occupation of each Grow employee might result in pricing variations.

Solvency requirements required in each country where risk is to be written.

Group pricing versus portfolio pricing – some insurers may charge each employer group for the risk that they bring (or closely relating to their risk) while others may charge a group rate on a portfolio level for all group business. Other insurers might charge per policyholder / individual with limited to cross subsidies between groups and individuals.

2(ii) Suggest underwriting provisions that could assist the insurers to manage their risks while remaining competitive. [7]

The examiners expected candidates to perform well in this question as a good understanding of the A301, F101 and F201 bookwork will be sufficient to generate numerous valid points.

As this is a "suggest" question, strong candidates were expected to not only show which underwriting provisions could assist in managing the insurer's risks, but also to demonstrate the second-order impacts by contrasting the advantages and disadvantages of each suggestion.

The proposed solution for Question 2(ii) below outlines a detailed discussion with various relevant points available for this question. Candidates were not expected to produce all the information outlined here to gain full marks for the question and serves as a revision aid for future candidates who wish to attempt this subject.

Candidates needed to think about the health insurance context for underwriting provisions, thereby going wider than medical scheme underwriting. While there was some repetition with this question part and part (i), it was important that candidates went into detail in this question to obtain good marks.

Underwriting is the process of consideration of an insurance risk. This includes assessing whether the risk is acceptable and, if so, setting the appropriate premium, together with the terms and conditions of cover.

Following the underwriting process, the prospective policyholders whose state of health reaches the required standard can be offered the insurer's standard terms for the particular contract. The other prospective policyholders will be offered special terms, unless their state of health is such that the insurer will not accept them on any terms, in which case they will be declined – at least temporarily.

The main ways in which the special terms can be specified are as follows:

- An **addition** may be made to the **premium**, commensurate with the degree of extra risk.
- A **deduction** may be made from the **benefit**, again commensurate with the degree of extra risk.
- An **exclusion** clause, to be appended to the contract, which excludes payment of benefit for claims that arise due to specified causes.

Underwriting impacts the product's competitiveness in terms of the following:

- The **cost of underwriting** needs to be recouped by the premiums and would increase the premium. The more expensive the underwriting cost, the more expensive the premium will become, which will negatively affect the product's competitiveness;

- A strict or extensive underwriting process could slow down the **speed of the application process**. A long and cumbersome application process will negatively affect the product's competitiveness;

- A strict or extensive underwriting process could reduce the relative **attractiveness** of the policy, which will negatively affect the product's competitiveness.

The following underwriting provisions could assist the insurers:

Full medical underwriting

Full medical underwriting is the most onerous and detailed form of underwriting. It is relatively costly and time-consuming but gives the insurer the greatest opportunity to learn about the state of health of the individuals to cover.

The proposed policyholder is medically underwritten at the time of application and information on medical history gathered. Some applicants will be accepted on standard terms, while other policies will have special terms imposed.

Medical evidence can be obtained from the following sources:

- questions on the proposal form completed by the applicant;

- reports from medical doctors that the applicant has consulted;

- a medical examination carried out on the applicant at the request of the insurer, e.g. an examination undertaken by a doctor or nurse appointed by the insurer;

- specialist medical tests on the applicant, e.g. an HIV test, or an X-ray scan.

Full medical underwriting is the most onerous form of underwriting and as such is the most costly (in terms of expenses). This is because all applications will be medically underwritten at the outset.

Since full medical underwriting gives the insurer the most information about the individual's medical risk, it is the most likely method to protect the insurer against anti-selection and lead to the most appropriate terms being set for each applicant.

Medical history disregarded

Under medical history disregarded underwriting no regard is paid to the individual's past medical history and no exclusions are made for pre-existing medical conditions.

Whilst less costly and time-consuming in terms of process, this creates the greatest potential for anti-selection and so the product would have to be priced accordingly.

Medical history disregarded underwriting is therefore more commonly applied on group policies, which makes this form of underwriting more appropriate for the employees of Grow.

Medical history disregarded will be the least costly, because there is no formal underwriting, either at policy inception, or at the claim stage.

Moratorium underwriting (or Waiting Periods)

No formal underwriting is carried out at the point of acceptance under moratorium underwriting, but past medical history is examined at the time of claim.

The applicant can claim for any condition other than those pre-existing in a defined period before acceptance. This defined period often ranges between 2 and 3 years.

This is effectively an exclusion of conditions that have received treatment in a defined period prior to application to the insurer. This exclusion is waived after a period of time if the policyholder receives no further treatment for the condition.

Due to the need of Grow to deploy the employees to the African country soonest, the insurer can encourage purchase by offering the prospect of immediate cover subject only to a blanket exclusion on pre-existing conditions.

Relative to full medical underwriting, the moratorium process can encourage sales and reduces new business costs. It has however been criticised because the insured cannot be sure for what illnesses or treatments they are covered for, unless they are sufficiently medically aware to understand the connectivity of medical conditions.

Exclusions

The insurer could exclude pre-existing conditions completely for the entire duration of the policy (as opposed to waiving this at some point during the policy duration).

This would result in a lower premium, but from a competitive viewpoint, the product might not appear comprehensive enough to meet the policyholders' needs.

Co-payments

The insurer could impose co-payments on claims related to any pre-existing condition (as opposed to excluding it completely).

This could result in a higher premium relative to that of moratorium underwriting but will appear more comprehensive to meet the policyholders' needs.

Age-rated premiums

The insurer could develop a premium structure such that premiums increase as the age at entry of the policyholder increases.

An age-rated premium structure might appear less competitive relative to insurers who have a flat premium structure by age…

…but such a structure provides the opportunity to have an otherwise lax underwriting process to facilitate a cheap and quick application process.

Group Volume Premium Discount

Insurers could offer a premium discount based on the number of policyholders in the group purchasing the policy (i.e. the larger the group, the larger the discount) as the claims cross-subsidisation ability improves as the risk pool size increases…

…without imposing any other underwriting provisions…

…provided the risk pool becomes more and more heterogeneous such that there is a balance of good and bad risks.

This effectively means the underwriting efforts reduce the larger the group becomes.

Impose pre-authorisation

An example of claims-stage underwriting could include imposing a pre-authorisation to assess the validity of the clinical need in advance.

Other

Insurers could ensure they have multi-disciplinary teams in place comprising of actuaries and non-actuaries in establishing, implementing and managing underwriting provisions.

Insurers should also periodically review the actual experience (in terms of claims and expenses) against the pricing basis to assess the validity of all the underwriting provisions and establish the most cost-effective and competitive underwriting strategy.

The use of free cover limits, if applicable, would influence the level at which underwriting is applied. A higher the free cover limit would result in fewer people being fully underwriting and may reduce the cost of underwriting, all else equal.

2(iii) Discuss the potential implications to Grow of selecting Insurer X or Insurer Y. [8]

This question tested two very different insurance structures which could be used to deliver these benefits and consideration of the pros and cons for the company in selecting one of them. Better candidates could identify and explain aspects such as currency risks and depth of experience, relationships etc that may have been slightly wider than the syllabus.

Candidates performed relatively poorly in this question as the depth of responses into the differentiating aspects of each insurance structure wasn't adequately considered, nor in the context of the employer as the client.

Insurer X and Grow are both based in South Africa which would ease communication and facilitate relationship development. Furthermore, there is a common understanding of the commercial context.

In contrast it is likely that there is an established branch network for insurer Y which would allow for better and localised customer service to Grow's local HR departments and employees.

Insurer X provides a consistent benefit set across all countries in US Dollar terms, which would be easy to understand and explain to employees.

Conversely there may be significant differences in the benefits offered in the different countries resulting in some inequity between employees in the different regions.

This may result in some level of compensation to the employees in the different regions

Resulting in additional burden on the HR department and internal processes (e.g. providing comparisons of benefits between regions).

Pooled premiums maximise the cross-subsidisation ability between regions, which has the potential to result in competitively low premium rates.

Insurer X has full control over premium increases or benefit changes and Grow would have the opportunity to negotiate premium increases and benefit changes.

Conversely this is not possible across different regions for the insurer X and further opens up the risk of further divergence of costs and benefit…

…especially when considering the differences in medical inflation and exchange rate impacts.

Insurer X settles claim payments directly with the service provider and does not burden the employees to settle the medical bills and to claim back from the insurer.

With Insurer Y, the local insurance practices may differ between countries and insurers resulting in more complex communication and management.

The benefits provided by Insurer X do not distinguish between exchange rate differences between countries, nor healthcare cost. The value of the benefits therefore differs by country of coverage.

Insurer X has to settle claims in the African country's local currency and is therefore exposed to adverse exchange rate fluctuations at the time of settlement. This additional source of risk is likely to increase the premium.

Insurer Y has preferential agreements in place with other insurers and this could result in lower premiums compared to insurers who do not have agreements or provider networks in place.

Insurer Y may prefer to contract with local insurance companies rather than multinational insurance companies and therefore the type of cover and the quality of access to care may differ between countries, making the benefits available to employees different.

Insurer X may be better placed to provide appropriate benefits to the ex-patriate staff because of the international footprint and structure, while Insurer Y may be better placed to provide benefits to the local staff because of the relationships with local insurers.

Grow would need to understand the levels of administration involved for them as an employer with each Insurer as to how these benefits would be managed for each country and overall, if at all.

The levels of benefits, access to benefits and quality of care would be important to understand for each insurer in each country.

2(iv) Propose a self-funded healthcare model that Grow could implement to provide appropriate healthcare coverage to their staff for the duration of their relocation, instead of purchasing insurance. Your answer should include reference to how this model differs to the insured model and the potential advantages and disadvantages to the relevant stakeholders. [17]

Better candidates could explain the funding, operational and risk differences between an employer self-funded model and an insurer with the various benefits and issues that each may present.

A few candidates took slightly different approaches with some referring to a restricted medical scheme and credit was only given where comments were appropriately explained in the context of the question. Given that a restricted medical scheme in South Africa would not be an appropriate delivery model for funding healthcare needs of those in other countries, candidate points in this regard were only recognised where the distinction was clear between the various groups of staff.

Proposed self-funded healthcare model

The proposed self-funded healthcare model entails the employer, Grow, providing health benefits to its employees **using the company's own funds**, which is different from the insured model where the employer **contracts an insurance company** to provide health benefits to its employees.

In the self-funded healthcare model, Grow will assume the direct risk for payment of the claims for benefits. The terms of eligibility and covered benefits are set forth in a plan document which includes provisions like those found in a typical group health insurance policy.

The proposed self-funded healthcare model is to be established as its own legal entity, similar to a trust or a medical scheme.

This healthcare model could have its own assets, which should be segregated from the employer's general assets.

Plan assets can never convert to the benefit of the plan sponsor. Once funds become plan assets – whether through payroll deductions from employees or employer contributions to the plan – those assets invariably belong to the plan. The plan assets are therefore ring-fenced.
The proposed self-funded healthcare model can be described by means of the following three interrelated functions that form the main components of this self-funded healthcare model: revenue collection, pooling of resources, and purchasing of interventions.

Revenue collection is the process by which the self-funded healthcare model receives money from Grow and/or the Grow employees.

Rather than Grow paying premiums to an insurer, Grow would collect regular contributions from employees (i.e. an employee contribution) and/or make contributions as an employer (i.e. an employer contribution) towards this fund.

Employee contributions can be collected as pre-tax contributions from employees (if permissible).

The employer could make additional contributions into the fund.

If the intention is to provide healthcare cover to the employees' dependents, then contributions for dependents could be collected from the employees' payroll deduction.

It is not clear which Grow employees should pay contributions to this fund…

…All employees (including those employees who are not to be deployed in an African country) could contribute towards this self-funded healthcare model. However, this will be viewed as unfair to those employees who are not relocating to an African country but must cross-subsidise their colleagues…

…but this would result in sufficient contribution collection as the contribution-paying group is larger.

Alternatively, only those who relocate to the African countries could contribute toward this fund for the duration of their stay. This will be viewed as a fairer approach…

…but it is unlikely that the contributions collected from such a small employee group would be sufficient to pay all the arising claims.

Pooling is the accumulation and management of revenues in such a way as to ensure that the risk of having to pay for healthcare is borne by all the members of the pool and not by each contributor individually.

In a self-funded healthcare model, Grow is responsible to collect and pool the contributions, and to invest it appropriately.

Any non-healthcare expenses must be paid from this fund (e.g. administering this fund) as they arise.

Grow needs to set aside adequate reserves to purchase future healthcare services.

Purchasing is the process by which pooled funds are paid to providers in order to deliver a specified or unspecified set of health interventions.

Grow is responsible to settle the medical bills with the healthcare providers, or to reimburse its employees for incurring medical expenses.

Grow is responsible to manage the healthcare risk by either setting up a network of efficient providers, or to have its own healthcare practice (like a clinic) on site.

How this model differs to the insured model

The differences mainly relate to which party assumes the following risks:

- **Price risk:** Contributions may not cover variable costs or make an inadequate contribution to overhead and profit. The risk taker monitors the contribution margin which is (price - variable cost) x volume of services.
- **Intensity risk:** More services needed in the encounter than anticipated. The risk taker monitors the volume of ancillary services per patient and the mix of days by unit.
- **Severity risk:** Cases are more severe than anticipated. The risk taker monitors length-of stay.
- **Frequency risk:** More people need treatment than anticipated. The risk taker primarily monitors the admission (or visit) rate but will also be interested in the costs of other providers if not all the services are capitated. The risk taker will want to monitor whether other services begin to "balloon" if only parts of the continuum of care are covered.
- **Actuarial risk:** Actuarial risk is that demographics (for example, age, income and chronic disease) are not as anticipated, thus pricing is not correct.
- **Marketing risk:** Marketing risk is that enrolment is not as anticipated, thus demographics are not as anticipated which contributes to the actuarial risk.

Grow must take on the abovementioned risks and assume responsibilities in a self-funded healthcare model, while Grow effectively transfers all these risks to the insurer when the insured model is used.

Grow has peace of mind when all the above-mentioned risks are transferred to the insurer under the insured model, but Grow foregoes its peace of mind under the self-funded healthcare model when the risk and responsibility is assumed.

The insurer is more enabled to generate a large and heterogeneous risk pool and would therefore be able to charge lower risk premiums compared to what Grow theoretically could charge.

Profit generated by a traditional insurer comes directly from the policyholders, while there will be no incentive for the employer to make profit in a self-funded healthcare model.

The potential advantages to the relevant stakeholders

A self-funded healthcare model could be more paternalistic as Grow knows its employees and their needs to customise the benefit design to meet their needs.

A self-funded healthcare model provides Grow with more control and flexibility over benefit design and could even shift accountability to employees (e.g. by means of a health savings account) if Grow deems this appropriate.

A self-funded healthcare model provides Grow with more control over the reserving strategy and greater flexibility to cover certain benefits and exclude others as Grow sees fit.

A self-funded healthcare model provides Grow with more transparency of the claims data which will be instrumental in controlling costs by shifting buying patterns.

A self-funded healthcare model provides Grow with the opportunity to collect employee contributions as pre-tax contributions.

A self-funded healthcare model provides Grow with the opportunity to remove the profit transferred to the insurer.

A self-funded healthcare model can make use of reinsurance to remove risks that are not desirable, for example aggregate stop loss cover if total claims are higher than budgeted for.

The model can extend to cover dependents which can become an attractive employee benefit for staff and thus assist with talent attraction and retention.

Staff may view the benefits as valuable which could enhance their view of Grow as an employer.

The potential disadvantages to the relevant stakeholders

A self-funded healthcare model in unable to generate a sizeable risk pool that an insurer already has in place, unless the size of the workforce is very large…

…An employer with too few employees is unable to collect a contribution sufficient to allow the employer to pay health benefits claims without bankrupting itself…

…As a small risk pool does not possess a strong cross-subsidisation ability between good and bad risks.

The employer assumes a greater risk (ranging from price risk, intensity risk, severity risk, frequency risk, actuarial risk, etc.) which could be mitigated by stop loss reinsurance, but at a cost of a premium.

The employer takes on the administration burden which could be outsourced to a third party administrator or performed in-house.

If employees believe cover will not be sufficient then there may be loss of employees, problems in recruiting new employees.

Grow is unlikely to have the expertise in house to cost such a scheme or assess the risks involved so would need to engage outside assistance.