

**Actuarial Society of South Africa**

**EXAMINATION**

27 May 2013

**Subject F201 — Health and Care  
Specialist Applications**

**EXAMINER'S REPORT**

## Question 1

i)

*This question takes the shape of a conventional pricing exercise, with some adjustments and considerations specific to capitation.*

*This question was poorly answered. Candidates were required to investigate past fee-for-service trends, and project this to the present day for comparison against the capitation fee. Candidates showed a poor understanding of capitation fee arrangements with managed care organisations in general. Some candidates insisted that MCO data would be required to perform the pricing – even though such data would be unlikely to be available. Candidates failed to tailor their answers to the context of dentistry claims, reverting instead to conventional, generic pricing submissions.*

What is included in the capitation fee? Need to establish exactly what is meant by “dentistry”. For example, basic dentistry, specialised dentistry, in vs. out of hospital, etc.

Consider the benefit structure offered by CapDent. Are we sure that this benefit structure is similar to the benefits offered by ProPlan prior to the agreement or do beneficiaries now enjoy a different package of benefits?

In order to assess the capitation fee, the main aim would be to project the expected levels of fee-for-service claims covered under the capitation agreement and compare this to the capitation fee.

Start by determining the per life per month claims for the same population of beneficiaries during 2011 and 2012 up to the end of September (when the capitation started) (*or any relevant period proposed by candidates*)

Demographic risk-adjustment may be required for factors such as

- Age
- Gender
- Option selection (*or another appropriate demographic characteristic*)

Consider past trends and whether these should be projected forward

e.g. if utilisation of dentistry was on the increase, it may be reasonable to assume that this trend would have continued from October 2012 onwards

Consider the seasonality of dentistry claims

Especially given the mid-year inception of the capitation fee

Consider inflation

...the tariff component of which would in turn depend on the agreement CapDent has with their networked dentists (the details of which may not be available to you)

And consider the capitation fee increases. Was the first increase due on January 2013? And if so did this increase reasonably reflect the fact that the original cap fee was only implemented three months prior?

CapDent uses a network of dentists. This implies that members will not have freedom of choice. Did they have freedom of choice prior to the capitation agreement?

And if so, how would the restriction of freedom of choice impact on their claims costs?

Presumably CapDent would have selected its network of providers based on efficiency (or required them to abide by contractual obligations that would have increased efficiencies)

CapDent might also have negotiated lower tariffs with networked dentists

CapDent would have internal non-healthcare expenses to cover

As well as a profit margin included in the capitation fee

And these would have to be priced into the capitation fee

Arguably it would be hard to justify entering into a capitation agreement if the capitation fee was higher than historic fee-for-service arrangement (even though that seems to be the case here) – so under normal circumstances one would expect the efficiencies that CapDent believes it is generating through its managed care interventions to be higher than its expense loading and profit margin

ii)

*This question required the application of higher reasoning skills to a set of arguments presented by a capitation provider. In general, this question was poorly answered with most candidates limiting their comments to superficial observations. Stronger candidates were able to differentiate themselves clearly in this question. Point-specific comments follow below.*

#### **Point 1 – Seasonality**

*Few candidates applied their minds to how the seasonality impact could be absorbed by the capitation provider (which would depend on when the next cap fee increase would be) or, alternatively, how the January increase would have been calculated. The examiners were perplexed to see that most candidates assumed that benefits under a capitation arrangement must necessarily be unlimited.*

It is true that, under traditional benefits, beneficiaries tend to increase utilisation as part of the so-called “use it or lose it” mentality

However, depending on the quantum and structure of benefits, it could be equally true that benefit utilisation decreases towards the end of the year precisely because benefits are depleted

Notwithstanding either of the above, the cap fee should not, on an annual basis, be affected by seasonality...

...because CapDent would ordinarily absorb any seasonal effects

It could be fair to argue that, since the cap fee inception was only in October 2012, there was some seasonality (either higher or lower) that would have to be reflected in the cap fee

However, if this is the case, the cap fee adjustment for those three months should rather be explicit so that the January 2013 increase could be based on a “seasonally unadjusted” cap fee basis

Alternatively, the cap fee should increase every year on 1 October 2012

...in which case no allowance for seasonality would be necessary

In order to test the validity of CapDent’s assumption, it would be necessary to investigate past seasonal patterns (in 2011 and 2010 and perhaps also 2009)

The consistency of seasonal trends in every year should be investigated

And superimposed over the existing 2012 claims (January to September) to infer the likely trend of seasonality in Oct-Dec

Which should prove relatively conclusively whether CapDent's claims are justified

**Point 2 – Inclusion of all in-hospital dentistry costs**

*Only a small number of candidates concerned themselves with the exact definition of “in-hospital dentistry” which would ordinarily need to be interrogated and objectively defined through, for example, certain codes. Perhaps surprisingly, many candidates assumed that these hospital dentistry benefits were not covered by ProPlan in the past. Although credit had been awarded to all reasonable points offered by candidates, a more reasonable assumption here would be that ProPlan's benefits remained unchanged when the mid-year capitation contract commenced, and that the dispute in question is limited to the extent of the risk transfer to CapDent rather than the benefit entitlements of members.*

Given the apparently wider definition of CapDent's cover, it would probably not be appropriate to include only dentistry claims (such as discipline code 54) in the analysis. The analysis would have to be expanded to reflect the full scope of CapDent's cover

The definition put forward by CapDent simply refers to “all” cases related to dentistry. This appears fairly wide and open-ended, and could be ambiguous

Some rule-based mapping or definition would have to exist for the administrator to know exactly which cases to forward to CapDent for processing and which not.

This will most likely be defined as a combination of discipline code and CPT code, or alternatively a combination of discipline code and tariff code.

A coded mapping or definition of eligible cases would have to be requested from CapDent. If such a mapping does not exist, it would cast doubt on the scope of the capitation fee and the validity of CapDent's assertion that this justifies the higher cap fee.

This mapping can then be used to flag all historic hospital cases that would be covered under this agreement

And the actuary should then analyse all costs, including professional fees, incurred between the admission date and discharge date for such cases

...and project these forward into 2013 using standard actuarial projection techniques (inflation, risk-adjustment, etc)

The inclusion of maxillofacial surgery deserves consideration. Whilst such cases are indeed very expensive, they often relate to cosmetic surgery which would not typically be covered under ProPlan's benefits. Facial reconstructive surgery cases (e.g. after a motor vehicle accident, or due to cancer in the head or neck), which would normally be a PMB and hence covered in full, could be quite expensive but also tend to be infrequent.

To demonstrate this, it would be useful to obtain a list of all maxillofacial cases that had been funded by ProPlan (e.g. as PMBs) over the past few years. The list is likely to be a short one, depending on

the size of ProPlan. The total cost of such cases should be expressed as a percentage of all other dentistry expenditure.

And motor vehicle accidents that gave rise to maxillofacial surgery would be recoverable from the Road Accident Fund if the beneficiary's claim against the latter was ultimately successful. Such a recovery should, in theory, accrue to CapDent if they funded the benefit in the first place. Do they make provision for this in their capitation fee?

### **Point 3 – Explicit loading for PMB risk**

*Many candidates wanted to address this point simply by costing historic PMBs. The issue at hand is not the cost of historic PMBs (which would ordinarily have been accounted for in any analysis of historical fee-for-service claims), but rather CapDent's purported risk exposure to PMBs, which implies a change or increase in PMB expenditure over time (as implied by the fact that CapDent wants an additional premium over and above the existing cap fee). Notwithstanding this, it was encouraging to note that most candidates illustrated a proper understanding of the relationship between PMBs and DSP networks, as well as the fact that the latter applies directly to CapDent.*

It is true that PMB expenditure represents a risk to healthcare funders

Inasmuch as provider behaviour or member behaviour change over time

But very few (if any) dentistry visits are PMBs

And the proposed loading of R20 would appear extremely high and arbitrary given this

Notwithstanding the above, it is important to consider the nature of PMB regulation. It is *not* true that PMBs need to be reimbursed in full. In the case of a Designated Service Provider (DSP) network, PMBs only need to be paid in full if healthcare was voluntarily obtained outside of the DSP

And, by definition, CapDent's offering is a DSP – so perhaps ironically their very product should reduce the limited PMB exposure that could be applicable

Cases of *involuntary* out-of-network visits would probably be limited to emergencies and geographical proximity

And geographical proximity should be manageable given CapDent's own claim that its network is "large"

Strongly recommend that the PMB loading is not justified and should be reconsidered

### **Point 4 – Reserve building levy**

*This part allowed stronger candidates to differentiate themselves, with several potential points available to be awarded. However, very few candidates concerned themselves with additional sources of capital (such as debt, equity or profit retention) available to a company. The points offered by most candidates were limited to the context of not-for-profit medical scheme environment, despite the fact that CapDent, being a for-profit company, operates in a completely different regulatory dispensation.*

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It is true that the Council for Medical Schemes (CMS) has, on occasion, contemplated whether risk-taking Managed Care Organisations (MCOs) should be regulated to hold capital in order to maintain certain reserve levels

The question has also been asked whether a Risk Based Capital approach to medical scheme reserving should take account of risks transferred out of a scheme, such as capitation – thus resulting in lower solvency requirements for ProPlan.

But none of these are a reality as yet. Presently, there are no formal requirements (e.g. draft regulations) requiring MCOs to comply with certain reserving requirements

It therefore seems inappropriate and unusual (if opportunistic) to add explicit charges to build reserves for such an eventuality

We should consider that ProPlan's own solvency requirements remain unchanged at 25% of gross contributions. Higher cap fees (due to the explicit reserve building fee) effectively translates into higher contributions, which further increases ProPlan's own solvency requirements. ProPlan could therefore end up increasing contributions to fund *both* its own solvency and (ostensibly) CapDent's solvency.

As an analogy, a life insurer or short-term insurer or reinsurer would not charge explicitly for reserve building

The question may therefore be asked as to why *this* particular scheme should pay for CapDent's reserve requirements.

Especially considering that the more clients CapDent has, the lower (proportionally speaking) its reserve requirements are likely to become from a risk-based perspective

CapDent can raise capital on the markets (debt or equity)

Or raise it internally by retaining more profits on its balance sheet over time

How does CapDent plan to build up reserves over time? Presumably an explicit reserve building fee of this nature will reduce or disappear in time?

How was the R12.50 calculated?

Which reserves do CapDent currently have? ProPlan should insist on reviewing CapDent's financial statements.

Is there a possibility that the reserve levy is effectively treated as profit and ultimately paid to shareholders?

If CapDent were to liquidate, or fail to meet its obligations in any other way, ProPlan would remain liable to pay all claims. ProPlan's own solvency still has to cover this eventuality.

What happens upon premature termination of the contract? Will reserves be refunded to ProPlan?  
What is the notice period of the contract?

Similarly, what happens upon maturity of the contract, if the contract is not renewed? Will CapDent effectively use these reserves in order to fund its reserve requirements for other future medical scheme clients?

### **Point 5 – Preventative Healthcare**

*This part was relatively well answered, but few candidates applied their minds to the question as to exactly how CapDent plans to share future savings arising from preventative dentistry with ProPlan.*

The theory behind preventative healthcare is that higher costs in the short term (through regular checkups, screening, etc) could reduce the incidence of high-severity cases in the future

Dentistry could be a candidate for preventative healthcare, as regular check-ups are necessary to facilitate early detection of various conditions

Although it may intuitively appear sensible to assert that preventative healthcare should save in the long term, the question as to whether the cost of more regular check-ups is actually lower than the savings that will ultimately be realised will require more thorough investigation

And few (if any) cost-benefit analyses of this nature has been performed for dentistry in South Africa

Does CapDent have any research to prove that their actions result in savings in the longer term?

Notwithstanding the above – and perhaps more importantly – how does CapDent plan to allow ProPlan to share in the future savings that it claims will be generated?

Is the idea that ProPlan should simply accept CapDent's preventative approach on face value, and hope that CapDent will offer a cap fee reduction in a few years' time?

Will CapDent be willing to share data to allow ProPlan to monitor whether costs are actually coming down?

It is also unclear what CapDent is actually doing to encourage higher utilisation of basic dentistry

In fact, the short-term financial incentives generated by the capitation fee structure (fixed income and variable expenses mean that the party receiving the capitation fee can increase their profits by reducing utilisation through under-servicing) would prompt the opposite behaviour from what is being described.

Can CapDent provide tangible examples of activity supporting their preventative approach? Are they phoning members to go for checkups? Are they engaging with providers in any way to facilitate this?

If CapDent is convinced of its own offering, shouldn't it assume risk for the short-term costs of preventative healthcare with a view to sharing in the savings when it arises in the future? This would be achieved by maintaining cap fees on the current trajectory.

How does CapDent reimburse providers? If providers are actually capitated (e.g. on an assigned beneficiary basis) it is unlikely that those providers will be incentivised to increase the frequency of general check-ups.

And if dentists are capitated, the higher utilisation would not have a direct impact on CapDent's expense basis and would not justify a higher fee.

### **Point 6 – non-healthcare expenditure**

*This part was poorly answered given the relatively straightforward nature of the question. Whilst most candidates appreciated that CapDent would have to recover expenses, few candidates recognised that the combined offering to ProPlan should still make business sense from the scheme's*

*point of view. Several candidates expanded at length on CapDent's potential economies of scale (or lack thereof), which is irrelevant when considering CapDent's value proposition.*

It would be useful if CapDent could break down their capitation fee between health and non-health costs.

One could argue that CapDent's value proposition is only relevant if their entire offering presents the scheme with a cost saving, regardless of administrative expenditure or profit margins embedded in the cap fee

Alternatively ProPlan needs to consider its current administration expenditure basis. Presumably, ProPlan's past non-health expenditure included the administration of dentistry-related claims – an activity which will now cease.

ProPlan therefore needs to consider whether this could result in a non-health saving, and how this saving compares to the non-health breakdown that CapDent should be requested to provide.

If ProPlan is 3<sup>rd</sup>-party administered, it should consult its administration contract and/or attempt to renegotiate its admin fee to offset the non-health component in CapDent's capitation fee

If Pro-Plan is self-administered, it may be more difficult to show an explicit saving in expenditure unless, for example, staff historically occupied with the management and payment of dentistry claims were to be retrenched.

If Pro-Plan is unable to reduce its non-health expenditure, it would effectively be double paying for the administration of these claims

...and the CapDent transaction might therefore not be sensible from ProPlan's point of view.

iii)

*Part (a) was well-answered, but responses for Part (b) were disappointing. Some candidates embroidered on the MCO's regulatory requirements (which was not asked), whilst others contrived complex regulatory requirements where none exists. Specifically, it was disappointing to note that several candidates appear to be under the impression that MCO contracts need to be approved by the CMS or members. Many candidates expanded at length on section 63 of the Medical Schemes Act, which is not relevant to either reinsurance or managed care contracts.*

*Note – numerical references to sections of the Act or Regulations not required to attract credit.*

**a) contract with a reinsurer**

*Theory – refer p271 of Core Reading and/or Section 20(3) of Medical Schemes Act as amended*

Section 20(3) of the Medical Schemes Act (as amended) requires that all reinsurance agreements need to be reviewed and approved by the Registrar of Medical Schemes

The Trustees have to provide the Registrar with a copy of the proposed reinsurance arrangement

...as well as an evaluation of the need for the proposed contract

...done by an independent person (all conflicts of interest should be fully disclosed)

The evaluation is to be performed by a person with appropriate skills in statistics, health economics and actuarial science

Which could be an actuary but need not be an actuary

The Registrar would specifically want to see whether the scheme faces identifiable risks that cannot be managed through the scheme's reserves

Trustees have to obtain a number of proposals from reinsurers

Each of which would need to be considered in the independent evaluation referred to above

**b) contract with a managed care organisation**

A scheme may only enter into a managed care contract with an entity that is accredited as a Managed Care Organisation by the Council for Medical Schemes

At the moment there are no regulatory processes that need to be adhered to when entering into a managed care contract

Other than the fact that the Board of Trustees must agree to and enter into a contract with the managed care organisation

**Question 2**

i)

*The question is based on bookwork and the following is copied directly from Unit 3 Section 5 of the core reading.*

*While most candidates attained full marks on the business of a medical scheme, a very small proportion of candidates were able quote bookwork pertaining to the Short Term and Long Term Acts. The resultant scores for a straightforward bookwork question were unacceptably low for a Fellowship level exam.*

**Definitions**

1)

The definitions from the Long-term Insurance Act are as follows:

'health policy' means a contract in terms of which a person, in return for a premium, undertakes to provide policy benefits upon a health event (as defined elsewhere in the Act), but excluding any contract –

(a) of which the contemplated policy benefits

- are something other than a stated sum of money;
  - are to be provided upon a person having incurred, and to defray, expenditure in respect of any health service obtained as a result of the health event concerned; and
  - are to be provided to any provider of a health service in return for the provision of such service;
- or

(b) of which the policyholder is a medical scheme registered under the Medical Schemes Act, 1967

- which relates to a particular member of the scheme or to the beneficiaries of such member; and
- which is entered into by the scheme to fund in whole or in part its liability to such member or beneficiaries in terms of its rules;
- and includes a reinsurance policy in respect of such contract.

2)

The Short-term Insurance Act states that “an accident and health policy” means a contract in terms of which a person, in return for a premium, undertakes to provide policy benefits for a:

- disability event;
- health event; or
- death event.

Contemplated in the contract as a risk, occurs, but excluding any contract of which the contemplated policy benefits:

- are something other than a stated sum of money
- are to be provided upon a person having incurred, and to defray, expenditure in respect of any health event concerned, and
- are to be provided to any provider of a health service in return for the provision of such service.

3)

The definition of the business of a medical scheme as found in the Medical Schemes Act reads as follows:

“business of a medical scheme” means the business of undertaking liability in return for a premium or contribution-

- to make provision for the obtaining of any relevant health services;
- to grant assistance in defraying expenditure incurred in conjunction with the rendering of any health service; and
- where applicable, to render a relevant health service, ...  
...either by the medical scheme itself, or by any supplier or group of suppliers of a relevant health service or by any person, in association with or in terms of an agreement with a medical scheme’.

ii)

*Some candidates attempted to classify Allure Health under either one or the other regulatory dispensation, whereas in truth Allure Health cannot be classified as either. Stronger candidates were able to recognise the conflict inherent in Allure Health's offering.*

Product features that indicate that this is not a medical scheme product include

- The age restrictions, which are contrary to the open-enrolment provisions of the Medical Schemes Act.
- Various restrictions that do not comply with the PMB regulations including:
  - A six month waiting period on all chronic medication and
  - the limit of one specialist consultation per annum
- The fixed benefit amounts for hospitalisation as opposed to benefits that are related to the actual cost of care
- The inclusion of lump-sum death and disability benefits

If Allure Health was a medical scheme the Council for Medical schemes would not have allowed it to register its rules with such restrictions. Checking the list of registered medical schemes with the CMS (available on their website) will also confirm this.

The Medical Schemes Act also states that no person is allowed to carry on the business of a medical scheme unless the person is registered as a medical scheme in terms of the Act.

The comment about GPs being pre-paid suggests that Allure enters into a capitation arrangement with the GPs. With the provision of day-to-day benefits through such an arrangement it appears that Allure is doing the business of a medical scheme without being registered as a medical scheme which is in contravention of the provisions of the Medical Schemes Act.

The benefits are expressed in fixed rand amounts payable if certain events occur. These benefits may be provided by insurers in terms of the demarcation regulations.

Conversely medical schemes may not provide death and other lump-sum benefits as these do not fall under the definition of the business of a medical scheme.

We can therefore conclude that Allure Health is a health insurance product...

... and that Allure health is therefore not a medical scheme.

iii)

*A large number of candidates limited their submissions to a consideration of the employer and member impacts only, notwithstanding the fact that the question clearly also required candidates to analyse the product and compare it to typical medical scheme benefits that members of CloseMed currently enjoy. Some candidates failed to appreciate that subsidy policies cannot be changed at the whim of the employer.*

#### **Comparison of day to day benefits**

The day to day benefits appear to be approximate to those of affordable network medical scheme options.

Which may be less than what members may currently enjoy, especially those members who are currently on more comprehensive options.

The six month waiting period for chronic medication may place a severe financial burden on individuals who require expensive medication while they wait to be able to claim.

Allure Health may not cover all the CDL conditions and may not cover the full benefits medical scheme members are entitled to under the PMB regulations.

The formularies would have to be evaluated to see if they cover the same conditions, medication, pathology and radiology tests allowed for in the CDL regulations.

The limit of one specialist consultation per annum means that the consultation benefits provided for under the CDL are not covered as many of the CDL conditions allow for up to 2 or 4 specialist consultations per annum.

If the scheme is currently offering freedom of choice the switch to a limited network of providers may cause great inconvenience for members if there are no network providers in their area.

### **Comparison of hospital benefits**

The Allure product does not provide indemnity from hospital expenses in the way medical schemes do

Instead the hospital cover is a combination of:

- A hospital cash plan;
- lump sum accident cover policy; and
- Death/funeral cover.

Seen individually or as a combined package none of these products are intended to provide cover that is a substitute for medical scheme membership.

The hospital cash plan aims to provide cover in the event of sickness. The purpose of this cover is not to defray medical expenses but to provide for expenses that arise from contingencies other than medical expenses.

The costs while in hospital do not only include the hospital bill but also items such as pathology, radiology and specialists.

The fixed rand amount per day (especially from day 2 onwards) is quite low at R5 000 per day. If the patient has undergone major surgery that is not incurred due to an accident (i.e. the accident benefit does not pay out) or has a complicated condition the benefit amount paid out is unlikely to cover the full cost of hospitalisation, especially in a private hospital setting.

Since the benefit does not allow for different amounts to be paid out according to the level of care (general ward, high care or intensive care) there is a risk to the member that the benefit may not even cover the cost of the hospital bill if they have an extended stay in the intensive care unit

The maximum possible hospital benefit is  $R10\,000 + 89 \times R5\,000 = R455\,000$ . If the hospitalisation is due to an accident then the figure becomes  $R455\,000 + R150\,000 = R605\,000$ .

Some hospital cases can result in costs that exceed R1 million per case. This product would not provide members with adequate protection against such cases. In such a case the member will be liable for the shortfall, which may amount to several thousand rands.

The same is true of cases that have high costs but where the length of stay is significantly shorter than 90 days.

The level of death benefits is relatively low and it therefore appears that this is aimed at covering the cost of a funeral only

The level of cover provided by Allure is therefore not equivalent to those provided by medical scheme membership and the premiums of the Allure Health product cannot be reasonably compared to the current medical scheme contributions.

#### Impact on members

Members of the medical scheme currently aged 50 and over will not be able to purchase the hospital cover and their day-to-day benefits will cease at age 65.

Since the cover is not comparable to those of a medical scheme (see above) the members, as well as individuals who are more educated and risk averse or who have significant healthcare needs will be prompted to seek medical scheme membership elsewhere.

This means that they would have to pay for medical scheme cover (or the difference between the medical scheme contributions and the Allure Health premiums in the case of active employees) out of their own pockets to purchase hospitalisation benefits.

Members who join Allure Health now will either be left without cover or will have to re-join a medical scheme when their cover on this product ceases.

There is currently regulatory uncertainty regarding these products and the Minister of Finance published draft Demarcation Regulations on 12 March 2012 (*candidates do not need to give the date*) that may mean that products such as this could be outlawed at some time in the future. In such an eventuality members will also have to re-join medical schemes.

Since Allure is not a medical scheme those individuals reapplying to a medical scheme will not have a record of continuous medical scheme membership and will be subject to late joiner penalties and underwriting.

Many of the employees may spend the money from a distribution of the scheme's reserves immediately rather than invest it for the purpose of funding future healthcare costs.

Even considering the relatively low level of benefits offered by Allure Health, the premiums being charged appear low. For Allure Health to be profitable after expenses, it is likely that there could be further exclusions and limitations in the fine print, not shown in detail in the benefit brochure.

Allure Health, being an insurance product, is annually renewable. Should a member turn out to be a high claimer, it would be within Allure Health's rights to refuse to renew the contract in the subsequent year. As such, members who need healthcare coverage the most could be systemically excluded over time.

Impact on the employer

Cutting the level of medical scheme subsidies for employees will generate savings for the employer in the short term.

however...

The change in the subsidy payable to active employees constitutes a change in conditions of employment which will require renegotiation.

If the employees (or their unions) become aware that the benefit offered by Allure Health are not equivalent to the level of cover they currently receive they will resist the change.

Even if the employer manages to get the conditions of employment changed it may have to deal with unhappy employees in cases where members are left financially destitute because they do not have adequate cover.

If the employer needs to reverse the decision at some point in the future because of pressure from labour or the outlawing of the product it may be forced by circumstances to either

- register a new restricted medical scheme (and be asked to fund the minimum capital requirements for a new medical scheme); or
- place its employees on open medical schemes.

If the subsidy for employees remains at the level of the Allure premiums the increased contributions on a new restricted or an open scheme will have a severe financial impact on employees and this will lead to further tension between the employer and its employees.

The pensioners currently receiving the post-retirement subsidy of their medical scheme contributions will have a reasonable expectation that their level of cover will not be reduced and may take legal action against the employer if its actions deprive them of this cover.

Furthermore the subsidy of the pensioners will also have to be renegotiated as it cannot be unilaterally changed by the employer. These negotiations may be separate from the negotiations with the active workforce.

The pensioners are also not eligible to belong to Allure because of their age. They will therefore have to be accommodated on open medical schemes.

Pensioners applying to join open medical schemes will most likely find that their applications will be underwritten and subject to waiting periods.

Depending on how the current subsidy is structured and which open medical scheme options the pensioners choose this may lead to increased costs and a higher post-retirement medical aid liability for the employer rather than the decrease it may be hoping for.

In any event implementing the proposal will not result in the removal of the post-retirement medical aid liability from the employer's balance sheet.

iv)

*Although most candidates exhibited a fair understanding of the liquidation of a medical scheme, some attempts at calculations were weak. The examiners were surprised to note that several candidates failed to annualise contributions in their calculations.*

*Any reasonable calculations or assumptions (e.g. for family size) attracted credit.*

The distribution of the scheme's reserves following voluntary liquidation may be sufficient for the young and healthy members but may not be sufficient to cover the costs for certain members who have to wait out the waiting periods or incur unexpected healthcare costs.

For example, if we assume an average family size of 2.2, the annual contributions per family will roughly be between R30000 and R40000 depending on family structure (dependant mix).

At 78% solvency the reserves that could be distributed to members (assuming a per family allocation) would therefore be roughly between R23000 and R32000.

It is highly unlikely that this amount would be sufficient to cover shortfalls, even in the short term.

*<Candidates are not required to perform the exact calculations, any numerical attempt to demonstrate the fact that the reserve distribution will be insufficient to cover shortfalls will suffice>*

Each member's share of the reserves is also unlikely to be sufficient to pay for their future healthcare costs after cover ceases.

v)

*Given that this was a straightforward pricing question, the results achieved were disappointing. Several candidates failed to suggest that mortality tables could be used to cost the death benefit, reverting instead to impractical and protracted attempts to extract historic cause-of-exit information from scheme data. Few candidates appreciated that ICD coding should sufficiently identify hospital admissions due to accidents. Some candidates suggested alternative data sources be consulted, despite the fact that the question specifically instructed CloseMed's claims data be used. Finally it was disconcerting to note that several candidates reverted to indiscriminate, complicated and poorly considered application of GLM modelling techniques, suggesting that such models could be applied to any unconventional pricing problem without explaining how this would be achieved.*

The purpose of the exercise is to determine whether the pricing of Allure Health is reasonable. In order to do this we will have to do a pricing exercise of our own which will not be limited to the expected claims costs but Allure Health's other costs as well.

We are to use the schemes own claims data. The easiest way to approach the modelling is on a historical basis. Therefore we would run the scheme's historic claims data through the Allure Health benefit structure and see what the projected claim costs are.

We would need to exclude claims from those members who would not be eligible to receive Allure's benefits.

For the day-to-day benefits we would need to classify out of hospital claims into the relevant categories to determine if they would have been covered on Allure Health.

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This classification will most likely be based on discipline and tariff codes.

Since we will be using historical data we may have to adjust for medical inflation if data from previous years is going to be used, especially in cases where more than one year of data is used.

Exclude data from recent months to ensure that there is no IBNR component.

Or we could make IBNR estimates but this will be complicated by the fact we would have to estimate the IBNR separately for each claim type (GPs, medicine, radiology etc.) but also on a family/patient level since we would also need to model benefit limits and waiting periods.

We would then apply the Allure Health benefit structure to the claims data and estimate the annual cost of these benefits.

Exposure data, subdivided between members, adults, children and other adult dependants will also be required so that we can estimate the risk premium on a per beneficiary per month basis by dividing the total estimated claims by the number of beneficiary months for each type of members.

For the hospital claims we would need to calculate the risk premium for each of the different components separately.

For the hospital cash plan component calculate the total number of days in hospital, truncate any figure that exceeds 90 days and apply the benefit amounts.

For the accident cover we would have to go back to ICD10 codes to determine which hospital cases were due to an accident or due to illness. Check the policy documentation of Allure (if available) to see what the exact definition of an accident is.

For the death benefits we can simply apply an appropriate mortality table to the historical membership data.

If the scheme is large enough and keeps records that identify beneficiaries who have died we can base our choice of mortality table on an analysis of this experience.

The mortality table will be applied to the death benefits and a risk premium can then be calculated.

We can check the reasonability of the estimated risk premiums by comparing them to the premiums of similar products in the market (for example funeral plan premiums in the case of the death benefit and competing hospital cash plan products).

Other assumptions or considerations:

- The actuary should consider potential bias in the membership who will actually elect to purchase this cover (they are likely to be the low claimers who do not expect to benefit from full medical scheme cover).
- Any impact that the restricted network of GPs is likely to have on claims experience, particularly if the scheme currently offers complete freedom of choice or if it has a network which differs significantly in coverage compared to the Allure network.
- If the formularies that Allure Health GP's must follow are not available an assumption will be required regarding what is included and how to adjust for any differences between this and what is currently applied by the medical scheme.

Assumptions will also need to be made regarding Allure Health's administration and other expenses such as commission.

Since the purpose of the exercise is to determine whether the policy is likely to be profitable it is not necessary to make an assumption regarding Allure's profit margins.

This will give our own estimates as to the true cost of the product as

True cost = Day to day risk premium + Hospital cover risk premium + Admin expenses

We can then apply Allure's pricing structure to the membership of the scheme to get the income that Allure would actually receive.

The total estimated true cost of the benefit can then be compared to Allure's premium income to give an indication of how profitable/unprofitable the Allure products are expected to be.

vi)

*This question was reasonably answered. Whilst many candidates superficially explained the undesirable mechanics of having, for example, community-rated and risk-rated environments compete, few candidates reflected on the principles of mutuality and solidarity which underpins the entire debate. Some candidates did not frame their responses in the context of the systematic risk to the medical schemes industry.*

The Medical Schemes Act was crafted based on the principle of social solidarity, whereas Insurance legislation is based on the principle of Mutuality

The Solidarity principle implies that losses are paid according to need, while premiums are unrelated to risk

The Medical Schemes Act enforces these principles through

- open enrolment;
- community rating; and
- prescribed minimum benefits

Whereas Mutuality allows for full risk rating

Solidarity therefore exposes medical schemes to the risk of anti-selection

And this could be exacerbated if insurance products compete directly with medical schemes

It is therefore important to protect the integrity and stability of the medical scheme risk pool.

Any health insurance products that undermine this stability would be undesirable.

A product that entices the young and healthy medical scheme members to forego their medical scheme membership will lead to deterioration in the profile of the risk pool and will result in an increase in medical scheme contributions, all other things being equal. This is contrary to the principal of social solidarity as younger and healthier members will no longer by cross-subsidising the older and sicker members.

The availability of risk-rated health insurance would effectively create selective risk pools of healthier / low-claiming members. Whilst this could be argued to be desirable for those healthier members, the larger systemic impact would result in older and sicker members being systematically excluded from coverage.

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Since these products do not provide the same level of cover members who forego their medical scheme membership will be more vulnerable as they will not have the same level of protection against the impact of potentially financially ruinous health events.

And notwithstanding this, the members who might presently enjoy adequate cover under health insurance products would ultimately age and find themselves exposed to the loss of cross-subsidisation.