

Actuarial Society of South Africa

EXAMINERS' REPORT

October 2017

Subject F201- South African Health and Care Specialist Applications

Introduction

The Examiners' report is written by the Principal Examiner with the aim of helping candidates, both those who are sitting the examination for the first time and using past papers as a revision aid and also those who have previously failed the subject.

The Examiners are charged with examining the published syllabus. The Examiners have access to the Core Reading, which is designed to interpret the syllabus, and will generally base questions around it but are not required to examine the content of Core Reading specifically or exclusively.

For numerical questions, the Examiners' preferred approach to the solution is reproduced in this report; other valid approaches are given appropriate credit. For essay-style questions, particularly the open-ended questions in the later subjects, the report may contain more points than the Examiners will expect from a solution that scores full marks.

The report is written based on the legislative and regulatory context pertaining to the date that the examination was set. Candidates should consider the possibility that circumstances may have changed if using these reports for revision.

General comments on the aims of this subject and how it is marked

1. The aim of the Health and Care Specialist Applications subject is to instil in the successful candidates the ability to apply knowledge of South African health and care environment and the principles of actuarial practice to the provision of health and care benefits in South Africa.
2. Candidates who approach the questions, especially the more substantial elements of each question, in a methodical and detailed manner are far more likely to pass the subject. Candidates will gain few marks if they do not address the question asked but merely write tangential points around the topic of the question. The mark allocation for each question part gives an indication of the relative length of answer or number of points to be made to gain full marks.
3. It is often helpful to use subheadings when answering long part questions.
4. Candidates who give well-reasoned points, not made in the marking schedule, are awarded marks for doing so and these marks were added to the marking schedule.

General comments on student performance in this session of the examination.

The difficulty of the paper was consistent with papers set for recent sessions. Well prepared candidates scored well across most of the paper. Questions that required an element of analysis or application of knowledge were less well answered than those that just involved reproducing bookwork. The comments on the questions below concentrate on areas where candidates could have improved their performance.

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Question 1

Question 1(i)

This was an easy question and many candidates received the full mark.

Some candidates lost marks because they did not answer the second part of the question, which required them to explain why the Member Funds and Regulation 29 reserve amounts differ.

Members' funds as at 31 December 2017 = $25.4\% \times R199\,312\,773 = \mathbf{R50\,625\,444}$

The difference between the net asset value and the Regulation 29 members' funds arises from **unrealised capital gains** of $R54\,435\,962 - R50\,625\,444 = R3\,810\,517$.

{Mark also given for "Assets set aside for a specific purpose"}

[Total 1]

Question 1(ii)

This was an easy calculation question with few complications. Various approaches were possible. For example, projections could have been based on per member or per beneficiary averages, except in cases where the basis was explicitly stated (such as administration fees being contracted on a fixed amount per member per month). These methodologies yield very similar results.

The solution below shows one possible approach based on per beneficiary per month averages. Solutions were marked based on the approach taken by each candidate.

Candidates lost marks where they did not show their calculation steps or failed to state their assumptions. Candidates also lost marks because they ignored additional information such as the seasonality adjustment factor to use.

Very few candidates allowed for the impact of ageing and most candidates did not allow for the negative net healthcare result in their investment income calculation.

Total Beneficiary months for 2017

$$= 13\,177 \times 12$$

$$= 158\,124 \text{ (given in notes to management accounts)}$$

Contributions

Contributions pbpm

$$= 50\,741\,610 \div (13\,862 \times 3)$$

$$= 1\,220.16 \text{ pbpm using Q1 figures}$$

Gross contribution income

$$= 1\,220.16 \times 158\,124$$

$$= 192\,936\,580$$

[marks for using values calculated earlier]

Healthcare expenditure

Average healthcare expenditure pbpm for Q1

$$= 44\,773\,627 \div (13\,862 \times 3)$$

$$= 1\,076.65 \text{ pbpm}$$

Average healthcare expenditure pbpm for 2017 before seasonality

$$= 1\,076.65 \times (1 + 2.5\% \times (30.5 - 30.2))$$

$$= 1\,084.72 \text{ pbpm}$$

Assumption: claims grow linearly with 2.5% for each year of average age

[for one of the other combinations in the table below, or another sensible approach]

Growth function	Basis period	Claims	Beneficiary months	Avg claims pbpm (basis)	Growth	Avg claims pbpm before seasonality	Avg claims pbpm after seasonality
Linear	Q1	(44 773 627)	41 586	(1 076.65)	3%	(1 086.34)	(1 097.31)
Linear	Q1	(44 773 627)	41 586	(1 076.65)	2.5%	(1 084.73)	(1 095.68)
Linear	Q1	(44 773 627)	41 586	(1 076.65)	2%	(1 083.11)	(1 094.05)
Exp	Q1	(44 773 627)	41 586	(1 076.65)	3%	(1 086.24)	(1 097.21)
Exp	Q1	(44 773 627)	41 586	(1 076.65)	2.5%	(1 084.66)	(1 095.61)
Exp	Q1	(44 773 627)	41 586	(1 076.65)	2%	(1 083.07)	(1 094.01)

[marks for incorporating seasonality first and then projecting full-year pbpm amount]

Average healthcare expenditure pbpm for 2017 after seasonality

$$= 1\,084.72 \div 0.99$$

$$= 1\,095.68 \text{ pbpm}$$

Healthcare expenditure for the year

$$= 1\,095.68 * 158\,124$$

$$= 173\,253\,304$$

Gross healthcare result

$$= 192\,936\,580 - 173\,253\,304$$

$$= 19\,683\,276$$

Administration fees

Administration fees pmpm

$$= 6\,029\,279 \div (7\,708 \times 3)$$

$$= 260.74 \text{ pmpm}$$

Total administration expenses for the year:

$$= 260.74 * 7\,326 * 12$$

$$= 22\,922\,175$$

Fixed other non-healthcare costs

Fixed other administration costs per month

$$= 881\,261 \times 90\% \div 3$$

$$= 264\,378.3$$

[marks for calculating total full-year amount and incorporating later]

Variable other non-healthcare costs pmpm

Variable other admin costs pbpm

$$= 881\,261 \times 10\% \div (13\,862 \times 3)$$

$$= 2.12 \text{ pbpm}$$

[marks for calculating total full-year amount by pro-rating with beneficiary numbers]

Total other non-healthcare costs for the year

$$= 264\,378.3 * 12 + 2.12 * 158\,124$$

$$= 3\,507\,763$$

Net healthcare result

Operational deficit

$$= 19\,683\,276 - 22\,922\,175 - 3\,507\,763$$

$$= 6\,746\,662$$

[marks for using values calculated earlier]

Investment income

$$= 7\% \times (54\,435\,962 - 6\,746\,662 \div 2)$$

$$= 3\,574\,384$$

Simplifying assumption: simple (negative) interest on the deficit for half the year

[or similar, e.g. $7\% \times 54\,435\,962 - 6\,746\,662 \times (1.07^{1/2} - 1) = 3\,578\,378$]

[marks for using values calculated earlier]

Net surplus/(deficit)

$$= -6\,746\,662 + 3\,574\,384$$

$$= -3\,172\,278$$

[marks for using values calculated earlier]

Unrealised gains

$$= (54\,435\,962 - 50\,625\,444) \times 1.26$$

$$= 4\,801\,253$$

[marks for calculating change in unrealised gains: 990 735]

Regulation 29 funds

$$= \text{previous total members' funds} + \text{net surplus/(deficit)} - \text{unrealised gains}$$

$$= 54\,435\,962 - 3\,172\,278 - 4\,801\,253$$

$$= 46\,462\,432$$

*[marks for using previous **accumulated funds (regulation 29)** and **change in unrealised gains instead**]*

[marks for using values calculated earlier]

Solvency

Statutory solvency ratio

$$= 46\,462\,432 \div 192\,936\,580$$

$$= 24.1\%$$

[marks for using values calculated earlier]

The following table shows the complete results for two possible approaches.

Calculation basis	Average per beneficiary per month	Average per member per month
Contribution income	192 936 580	192 907 939
Net relevant healthcare expenditure (incl. IBNR)	(173 253 304)	(173 227 699)
Gross healthcare result	19 683 276	19 680 240
Administration fees	(22 922 175)	(22 922 175)
Other non-healthcare costs	(3 507 763)	(3 507 763)
Net healthcare result	(6 746 662)	(6 749 698)
Investment income	3 574 384	3 574 278
Net surplus/(deficit) for the period	(3 172 278)	(3 175 420)
Total members' funds at the end of the period	51 263 684	51 260 542
Accumulated funds (Regulation 29)	46 462 432	46 459 290
Statutory solvency ratio	24.1%	24.1%

[Total 15]

Question 1(iii)

The question asked for candidates to suggest actions that the scheme could take to improve its solvency position at the end of 2017 and discuss the difficulties each action presents.

This part was poorly answered. Many candidates ignored the fact that solvency had to increase by the end of the current year and lost marks because they did not consider whether an action was feasible or would have the required effect in the short term.

Most candidates struggled to generate enough distinct points for a 14-mark question.

Attempt to prevent further increases in average age and the concomitant pbpm claims increases by trying to **curb the reduction in reserve-building membership**:

- Request of the employer to make Typmed membership a **condition of employment**.
- Request of the employer to change its **subsidy policy** to make Typmed more attractive to employees.

For these suggestions Typmed's restricted corporate scheme status means that:

- The employer may not consider in its **best interest** to grant such a request (attracting the best talent, maintaining employee morale, etc.).
 - For existing employees, the employer will need to **re-negotiate contracts** of employment, which may not be successful or may take too long to have a significant enough effect at the end of 2017.
 - For new employees, the **staff turnover** rate may not be high enough to have a significant enough effect at the end of 2017.
 - This would also not help the scheme if the employer is in the process of retrenching a large group of employees.
- Introduce a **loyalty/wellness programme** through the administrator to attract younger and healthier lives:
 - The administrator may not have a competitive programme.
 - Introduce a **new option** or efficiency discounted option (EDO) to attract younger and healthier lives if membership is not mandatory (or to be more attractive than a spouse's scheme):
 - This may take too long (designing and pricing, CMS approval, etc.) to have a significant enough effect at the end of 2017.
 - To be attractive it would have to be cheaper and buy-downs (if allowed during the year) would therefore reduce the total gross contributions. This may result in higher solvency at the end of the year *if* it does not have a significant effect on the bottom line.

Apply mid-year **contribution increases**:

- This could be perceived as a drastic step and a sign of the scheme being in financial trouble, causing reputational damage in the eyes of current and potential members.

- In a non-mandatory environment, this could lead to lower membership, and of a worse demographic profile, than would have been the case without the contribution increases.
- The “circularity” in the statutory solvency calculation (i.e. the fact that contributions influence both the numerator and denominator) will cause the required members’ funds to increase simply to maintain the current solvency level.
- Change the contribution structure to an income related one with the aim of attracting more lives who are younger and healthier and generally earn less and increase contributions revenue from the higher earners who are generally older and less healthy.
- This could result in an increase in selective lapses of the healthier higher earners and selective joining of unhealthy low earners, particularly pensioners.

Apply mid-year **benefit reductions**:

- This could be seen as a drastic step and a sign of the scheme being in financial trouble, causing reputational damage in the eyes of current and potential members.
- In a non-mandatory environment, this could lead to lower membership, and of a worse demographic profile, than would have been the case without the benefit reductions.
- The PMB regulations means that there is limited scope to reduce benefits.

Introduce more stringent membership underwriting for employees and their beneficiaries to limit anti-selection, e.g. reduce the window period after appointment or a change in family composition (new baby, marriage) in which employees are eligible to join without waiting periods and/or introduce late joiner penalties if it is not already done:

- If the number of joiners is low, this may not have a significant enough effect at the end of 2017.
- There may not be room to make underwriting any stricter, i.e. if maximum underwriting allowed by regulation is already being applied.

Apply stricter/additional **managed care**:

- The cost at which additional/stricter managed care is available may be higher than the reduction in claims it effects.
- There may not be room to make managed care any stricter.

Apply stricter **protocols and/or formularies and/or efficient provider networks**:

- This may cause member unhappiness.
- There may not be room to make protocols and/or formularies care any stricter.

Attempt to **re-negotiate rates** with providers and/or the administrator:

- Providers and/or the administrator may not be willing to re-negotiate given Typmed’s limited bargaining power due to its small size.

Attempt to reduce “other non-healthcare costs”:

- There may not be room to reduce these any further (travel costs for trustees, AGMs, etc.) as most of these costs are fixed.

Adopt a more **aggressive investment strategy**:

- The low solvency level limits the level of risk that can be taken in investment decisions; the risk that solvency will fall even further due to adverse market conditions must be acceptably small.
- A more aggressive investment strategy is expected only to yield higher returns with an acceptable level of risk over the longer term as a result of volatility in returns. This makes this approach risky as a strategy to improve solvency in less than a year.

Start a new initiative to identify and curb fraud and abuse.

Realise unrealised gains:

- It may be an inopportune time to sell the relevant assets (due to prevailing market conditions, for example).
- This will attract transaction fees.

Request a grant to the scheme from the employer:

- The employer may not be in a cash flow or profitability position, or may not have the appetite, to provide such a grant, especially since this cannot be a loan.

Tighten the restricted scheme eligibility criteria for current members (or enforce them more strictly), which can result in some members leaving the scheme, reducing contribution income and hence improving solvency:

- This can (will?) be seen as immoral or unethical (after already having accepted the members and their contributions), and consequently lead to reputational damage and/or litigation.

Request the employer to offer any members with a post-employment subsidy promise a voluntary buy-out of the employer's liability.

- This may result in a reduction in the scheme's pensioner ratio as these members, who have opted for the buy-out, have alternatives to remaining on Typmed scheme and may move to other schemes.
- This could be very expensive for the employer but may result in a reduction in the average age and the scheme's pensioner ratio, as well as reducing gross contribution income.
- Even if most pensioners accepted the offer such a transaction would take time to negotiate and complete. Furthermore, the best time for these pensioners to then move to another scheme would be 1 January. Such a transaction is therefore unlikely to have an impact on solvency at the end of 2017.

[Total 14]

[Question 1 Total 30]

Question 2

Question 2(i)

The question indicated that the candidate's role was that of an actuary employed by the administrator who is advising the medical scheme on whether it should fund the use of the device at the fees and tariffs proposed by the hospital group or not. Some candidates instead answered as if they were advising the hospital on whether to make the capital investment and purchase the device or not and lost marks as a result.

Candidates who performed well in this question demonstrated that they understood sources of data used for healthcare analysis, the factors that contribute to the total healthcare cost related to a diagnosis that results in a procedure being performed and the factors to consider when performing a health technology assessment.

Information used:

Data over a period that is reflective of the introduction of the new device and current practices so that it is relevant for the analysis.

Membership and claims data relating to utilisation and cost experience for the procedure for the medical scheme (therefore without the device).

Cost information to include tariffs for hospitalisation (ward and theatre), costs of medical equipment, tariffs for medical professionals, costs of consumables and other related costs for the procedure and admission.

Costs relating to any post hospitalisation healthcare needs, including the readmissions for patients with complications.

Experience of other medical schemes that use the same administrator and who already fund the device.

Hospital admissions and cost experience (including tariffs) for the procedure from the hospital group (which would include data for patients who are not only members of the medical scheme)

Information from the device company on the availability of the device, costs and demand from doctors, patient or procedure profile, clinical information.

Results from clinical trials showing outcomes including impact on post-operative recovery, risk of complications in surgery and ancillary care required following the surgery, improvements in mortality, morbidity and other clinical indicators.

We also require some information regarding the additional costs that the hospital group will charge if the device is used.

It may be necessary to consider data from the administrator for experience relating to other medical schemes to get sufficient data given that the scheme has not yet approved the use of the device in its protocols.

It may be necessary to trim the data for any outlier procedures.

Information regarding the procedure may also be obtained from clinicians. These may be clinical advisors employed by the administrator or members of the scheme's clinical committee who are suitably qualified.

If we are using cost data from multiple years, then we will need to adjust for inflation.

Factors to consider when performing the analysis:

Admission rates for the procedure with the device and without the device and how these are changing over time to assess if admissions are increasing for surgery with the device.

Admission rates for the procedure with and without the device in the hospital group and in other hospitals (if the information is available from other scheme data) to identify which hospitals are using the device. Analyse the characteristics of those hospitals to establish if there are any specific types of hospital where utilisation is higher or lower, for example in a specific region, specialist hospital, etc.

Profile of members having the surgery with and without the device and changes over time to identify if there are any specific changes in the age, gender, chronicity, family size or length of tenure on the scheme who are using the device.

Consider trends in the prevalence of the condition that is being treated using this procedure. Is the average number of beneficiaries per 1,000 who have the condition changing?

Consider the difference in cost per admission for the old procedure and new procedure – cost per admission takes account of length of stay and level of care as well as the use of the device and any consumables needed.

Differences in average theatre time for each procedure – a non-invasive procedure could result in either more or less theatre time. More theatre time could be needed to set up the machine and perform the surgery, or less due to less stitching and cleaning afterwards.

... or will the procedure require a more sophisticated theatre for the new device to be used that would result in a higher cost?

If the outcomes (improvements in mortality, morbidity, complication rates, activities of daily living) with the device are better than without the device it may result in lower downstream costs

Less invasive, fewer complications and faster recovery, resulting in shorter lengths of stay, lower level of care and fewer readmissions

If it provides better outcomes then the ongoing treatment of the condition post-surgery should be less intense, resulting in further downstream savings costs.

Differences in average length of stay for each procedure: it is expected that length of stay post operation will be reduced, is this the case? Are there cost savings to be generated from reduced length of stay in wards post procedure such as pathology costs.

Differences in average length of stay in each level of care (ICU, HC, general ward) for both types of procedure – are members using the same mix of wards or are they being admitted lowering level acuity wards, which are cheaper?

Other aspects of the hospitalisation cost, including anaesthetist, physiotherapy, etc., must be included to understand the total hospital bill.

Is the mix of medical professionals required to perform the surgery using the device different (for example the doctor may need to be accredited to use the equipment) and does this lead to higher professional costs for the procedure?

Shifts in preference of doctors and members to use the device could increase demand and hence utilisation, with a corresponding reduction in procedures performed without the device.

Substitution rate (of old procedure by new one) and impact on increasing overall utilisation for this elective procedure.

Is the condition that is treated with this procedure a PMB?

If it is a PMB condition, does the procedure with the device included fall under the treatment part of the Diagnosis Treatment Pair (DTP?)

Supply and demand of doctors using the device, which would be influenced by availability of training and certification of surgeons to use the device.

If only a few surgeons are certified then utilisation will be limited (rationed) by restricted supply and possible waiting lists.

Similarly, the number of devices that will be available will also determine the availability of the device and the extent to which the charges for the device could potentially be spread.

Will this hospital group become the Designated Service Provider for this procedure?

If this group will not be the DSP then funding the use of the device will mean that the scheme will have to pay for its use in other hospitals as well.

Have other hospitals (outside this hospital group) purchased the device? Are they likely to do so in future?

Do the hospitals in the group making the proposal charge differently for the use of the device compared to other hospitals?

Because the NHRPL has not been kept up to date there will not be any tariff codes for the procedure with the device and no reference price. The administrator may have to create a special tariff code to handle these claims or bill based on procedure codes.

Consider if the device can be used for other procedures. This may reduce the overall cost per procedure.

The scheme is an open scheme. Will the inclusion of this benefit boost the competitiveness of the scheme and attract new members?

On marketing or competitive grounds, the scheme could consider the inclusion of the device in its protocols even if the cost implications are not overwhelmingly positive. For example, if the condition is rare and the procedure is done infrequently then the additional costs may be outweighed by the marketing benefits.

If most other open schemes do not pay for the use of the device (or only offer it on their most comprehensive options) then paying for the device may expose the scheme to anti-selection risks as individuals who wish to have the procedure done will be attracted to the scheme.

The fact that the procedure is elective means that there are increased anti-selection risks

Consider whether this device is used in the public sector.

Analysis

We will perform an analysis of the costs of the procedure using the device versus the costs to of the procedure not using the device.

If there is evidence that using the device results in significantly better outcomes and the additional costs are not significant (or there is a saving) then a positive recommendation is more likely.

If the clinical outcomes are very similar then cost will become a more important factor: If the result of the analysis is that the total cost of the procedure with the device are less than the costs of the procedure with the device, it is likely to be recommended for inclusion in the protocols.

Consider the calculation at a scheme level and at a benefit option level. The scheme could consider covering the use of the device only on its more comprehensive options so that the cost benefit analysis is favourable for the scheme.

Costs include the following for the procedure using the device:

- actual cost of using the device per procedure
- plus any direct costs, such as consumables, additional doctors or specific providers
- plus indirect costs, for example use of a more sophisticated theatre needed to perform the surgery in and/or more theatre time
- plus other costs involved in the surgery using the device

In summary, benefits or savings could include

- reduced theatre costs due to less time in theatre

- lower ward fees due to reduced length of stay.
- reduced level of care mix (for example less time in ICU which is more expensive)
- less doctor time needed to monitor recovery post operation.
- a reduction in the additional costs arising from complications
- lower use of allied health services such as physiotherapy due to the less invasive nature of the surgery
- downstream cost savings, for example reduced rates of re-admissions, fewer post-operative doctor consultations required, less medication required post operation, etc.

These tariffs may be different by hospital, in which case the calculations would need to take account of any agreed tariff differences (although these are likely to be relatively small).

[Total 15]

Question 2(ii)

This question was reasonably well answered as most candidates scored the bookwork marks for describing the reimbursement methods and listing the risks that are transferred.

The instruction was to describe the different reimbursement methods. Failing to do this and only naming the different methods resulted in marks being lost.

Unfortunately, most candidates failed to demonstrate their ability to apply their knowledge of reimbursement methods to a discussion of the appropriateness of each method in relation to the specific procedure being discussed in the context of the question.

Statements in the form “this method is suitable/unsuitable” without any supporting reason did not attract marks.

Fee-for-service

A fee is paid for each service performed.

Risk transferred: Price risk

Could give rise to incentives to over-service.

Under the FFS method, the scheme is taking on all the risks relating to the costs of the surgery and length of stay as well as case complexity or complications. The only risk not taken on is the uncertainty of the price reimbursed for each service, unless this is a DTP PMB. This is unlikely to be suitable for the scheme as there are no to little cost incentives for the hospital / doctors to manage costs.

The fee for service arrangement could be renegotiated based on observed utilisation compared to expected utilisation, so if the reductions in utilisation are not as expected fees can be reset.

Fee for service may be suitable in cases where there is not sufficient data to price alternative reimbursement fees credibly, which would make one or both parties in the negotiation wary of entering into such an agreement.

With fee-for-service reimbursement the scheme has access to detailed data for analysis purposes, which is not always the case for alternative reimbursement methods.

Per diem (per day) rates

These typically relate to hospital admissions and to a set rate per day (per diem) for all services provided by the hospital.

Risks transferred: Price risk, Intensity risk

The rate may be structured to allow for a higher rate in the first one or two days, as these are normally more expensive where e.g. surgery is performed

Complicated cases could be carved out, reverting to fee-for-service if certain predefined criteria are met.

Under per diems, the funder will be wary of attempts to increase LOS and may impose a maximum reimbursable LOS, requiring a motivation from the doctor if stay is prolonged.

A per diem arrangement transfers risk for actual costs to hospital, including the cost of the surgery, but not the length of stay in hospital and not all related costs (not billed by the hospital)

A per diem arrangement could be used as a first step to setting an alternative reimbursement method until more data has become available about the claiming experience for the procedure with the device...

... but the per diem arrangement may result in a loss of the experience data usually inferred from FFS claims data (such as medication and procedures related to complications).

The per diem agreement would need to be different for each procedure (i.e. traditional without the device, and with the device) reflecting the input costs and patient experience for each one, particularly as the surgery experiences are likely to be different.

In addition to managing LOS it will be important for the scheme to manage level of care post-surgery to ensure cost containment but appropriate clinical service delivery

Medical scheme will still need to manage the number of admissions and readmissions.

Fixed fees and global fees

A fixed fee covers the hospital costs of a particular procedure or diagnosis inclusive of e.g. ward fees, theatre time, equipment, regardless of how long the member is actually hospitalised.

Risks transferred: price, intensity, severity

Suitable when LOS variance is low.

A global fee also includes professional services, in addition to hospital cost, e.g. specialist and anaesthetist fees.

The hospital will now be acutely interested in managing length of stay, whereas the funder need not keep tight control as in a per diem structure. Under this reimbursement structure, funders would typically be concerned about readmission rates, which could be an attempt to charge twice for the same procedure. The hospital will monitor quality and complication rates of surgeons.

Variance in LOS for this procedure needs to be analysed to understand whether it is low enough suitable for application of this reimbursement method.

Fixed and global fees are more suitable structures for the scheme as the total hospital cost and associated fees are included in the arrangement, which requires the whole account to be managed by the service providers.

Need to determine the definition of “all costs” which are included in the global fee.

The procedure involves anaesthetists, surgeons and other medical professionals, as well as consumables. Therefore, the global fee would protect the scheme from increases or variations in these charges.

If the global fee is all-inclusive, balance billing from any provider to members should not be allowed.

In a global fee arrangement, the specialist costs are included which then means that those specialists who are referred more complex cases may be penalised under this method unless the arrangement has varying levels of reimbursement that reflect the risk presented by different patients.

Carve-outs from the reimbursement structure need to be considered, for example for specific complications, ages or co-morbid conditions

However, the specialist would need to retain responsibility for complications and re-admissions that could be attributed to him/her so there needs to be an incentive for the specialist to perform good quality work.

Would need to caution against the doctor having a disincentive to use new technology, so perhaps include some quality measures as well.

Maybe consider an enhanced global fee for doctors who consistently achieve better outcomes.

Capitation

Capitation is the payment of a fixed amount per service, whether the beneficiary uses the service or not. The provider takes the risk of more people making use of the service than expected.

Risks transferred: price risk, intensity risk, severity risk, frequency risk

An incentive exists for the provider to under-serve patients. The funder may want to monitor the quality or outcomes of services provided.

Capitation would only be appropriate if there were many admissions for the procedure and there was a link between providers and catchment areas but this is unlikely to be the case.

Percent of premium

This model provides for a fixed percentage of premium being paid to providers, in a form not dissimilar from quota share reinsurance. This form of reimbursement is not allowed in South

Africa, as the provider would fall within the definition of doing the business of a medical scheme.

Risks transferred: price risk, intensity risk, severity risk, frequency risk, actuarial and marketing risk

Percent of premium is not a suitable method for the reasons above

[Total 10]

[Question 2 Total 25]

Question 3

Question 3(i)

Part (i) was a pure bookwork question that required candidates to combine knowledge of taxation from different parts of the core reading. For a pure knowledge based question it was poorly answered.

The question specifically referred to contributions, benefit payments and medical savings accounts. As such discussions regarding the tax treatment of investment income or broker commission were not relevant and did not attract marks.

The question also specified that candidates should discuss the current tax regime, which some candidates ignored. As a result, they spent precious time discussing matters such as the history of medical scheme taxation or proposals that were being made regarding tax credits at the time of the exam.

Medical Schemes

Medical schemes do not levy Value Added Tax (VAT) on contributions and cannot recover VAT paid.

Contributions by employers

Employers may claim deductions of contributions made on behalf of their employees, subject to certain limits.

These limits are:

- Expressed as a percentage of each employee's "approved remuneration".
- Largely at the discretion of the SARS Commissioner, except where they do not exceed 10% (although in practice 20% is often used for the sum of retirement and medical scheme contributions)
- Calculated, for each employee, by lumping together the contributions made on his/her behalf in respect of benefit and retirement funds – although retirement funds are not themselves regarded as benefit funds for any purpose other than seeing whether the limit has been exceeded.

Contributions by members

Medical scheme contributions are paid from after-tax income.

The Government provides a Medical Scheme Fees Tax Credit (also known as an "MTC")

Tax payers under 65

- are eligible for a tax credit in respect of contributions to a registered medical scheme
- Of up to R270 in respect of the main member and one dependant each
- And of up to R181 for each additional dependant.
- This applies to both contributions made by both the employer and the employee.

Note: These are the amounts for the tax year ending 28 February 2016 (the 2016 tax year), which is what was used in the 2017 core reading. The marks are not for the actual amounts but for demonstrating an understanding of the MTC structure. The following table shows the amounts for other years.

	<i>2016 Tax year</i>	<i>2017 Tax year</i>	<i>2018 Tax year</i>
<i>Main member and one dependant (each)t</i>	<i>R270</i>	<i>R286</i>	<i>R303</i>
<i>For each additional dependant</i>	<i>R181</i>	<i>R192</i>	<i>R204</i>

The tax credit takes the form of a rebate, which means it is deducted from the tax payable rather than from the taxable income.

In addition, there is also the Excess Medical Scheme Fees tax credit which allows for the deduction of qualifying medical expenditure more than 7.5% of taxable income not covered by a medical scheme.

Taxpayers over the age of 65 and those with disabilities may claim deductions on all qualifying medical expenditure.

Medical saving contributions are not treated differently for tax purposes – the income tax regime only considers gross medical scheme contributions.

Funds in the savings accounts belong to the Scheme and, in the absence of an entitlement to any amount by members, there is no accrual in their hands.

On the same basis, interest on savings accounts belongs to the Scheme. Interest earned on medical savings accounts is therefore exempt income and is not subject to tax in the members' hands.

When savings are paid out to a member on moving from a benefit option with savings to one without, these are subject to tax in the members' hands at their marginal rate.

Payments by a registered medical scheme to or on behalf of its members, to indemnify them against medical expenses incurred have no tax consequences (i.e. are not taxable as income in the hands of members.)

Providers will pay income tax on the benefit amounts that the scheme pays to them.

[Total 9]

Question 3(ii)

Part (ii) was also a bookwork question that was poorly answered.

Note that the question asked candidates to describe the pillars used to describe the entitlements in social security systems. Most candidates limited their response to a discussion of the principals of social solidarity.

Pillar 1

- Universally available basic benefit for all citizens and specified classes of legal residents
- Available without contributions as
 - fixed financial allocation;
 - entitlement to free service; or
 - both.

Pillar 2

- A contributory environment above Pillar 1 or as substitute for pillar 1.
- Characterised by strong mechanisms to ensure social solidarity:
 - income-based cross-subsidies;
 - risk-related cross-subsidies; and
 - mandatory participation.

Pillar 3

- Discretionary social security over and above minimum levels.
- Individuals are left to make completely discretionary decisions.
- Government is required to ensure basic consumer protection.

[Total 5]

Question 3(iii)

Part (iii) asked candidates to describe the impact of a package of reforms on social solidarity and access to healthcare in a fictional country.

A common mistake made by candidates was to discuss the impact of the reform in the South African context. Very few candidates considered the resource allocation aspects or what impact geographical, social-economic and other differences between states could have.

The removal of the means test will mean that all citizens will be able to access free healthcare services at public facilities.

{Some candidates interpreted the wording “remove means test” to mean that no citizens would qualify for free healthcare at public facilities and that everyone accessing public sector care would now have to pay user fees. This is not what the examiners intended but due to the ambiguous wording valid points based on this alternative understanding received credit.}

If care at public facilities is now free then those who previously used the state facilities but had to pay user fees will have those funds available for other uses. The same is true of those who previously used private healthcare (either out-of-pocket or by means of health insurance) and will now choose to use free public services.

This may cause a strain on the public healthcare system since a larger proportion of the population may make use of free public services and the current infrastructure and resources may not be able to cope with the increased demand.

The introduction of quality standards should ensure consistent standards across the country...

...but that would depend on the current quality of public healthcare in each of the states....

... and how rigorous the new quality standards and their enforcement are.

In the current situation, the amount of payroll tax generated within each state will depend on factors such as income distribution and employment rates as well as the rate of tax, which means that poorer states are generating lower tax income per capita than richer states...

...unless the payroll tax rate in poorer states were higher than in the richer states to compensate for this effect.

This is undesirable from an equitability point of view, since the poorer states are likely to have a greater proportion of the population who rely on free public health services.

By removing the payroll tax at a state level and funding public healthcare through general taxes at a national level the allocation of healthcare funds to different states can be more equitable as the funding generated at a national level can be allocated to states according to need.

All taxpayers in Nexus will now be assessed consistently using the same tax rates across all states. This would remove incentives for individuals and companies to move between states to maximise after-tax income based on tax rate differences, for example.

It also broadens the tax base. A narrow tax base requires higher tax rates while a relatively broad tax base requires lower tax rates to generate the same amount of tax revenue.

Explanatory note: Taxes are often described as having a broad base or a narrow base. A broad-based tax is one that taxes most of the potential tax base. For example, a broad-based sales tax is one that applies to almost all purchases of goods and services. Another example is South Africa which has a narrow income tax base: a small proportion of the labour force contribute a large proportion of total income tax (source: National Treasury Budget Review 2017). High income taxes tend to discourage effort and entrepreneurship, while encouraging all manner of activity to avoid them. That is why a basic principle of good tax policy has long been to charge a low rate over a broad base.

However, the extent to which resource allocation will be more equitable will depend on the way the federal government will allocate healthcare funding.

Increases in VAT is considered regressive as the poor will be most affected by the resulting increase in the costs of goods and services.

If the federal government's allocation of healthcare budgets to states is done appropriately, this will support the principles of social solidarity since contributions will be according to ability (based on income through income taxes and consumption through VAT) and resources will be allocated based on need.

{Note that the principal of payment according to ability may have already been implemented before the reform, depending on how the states structured the dedicated payroll taxes.}

Since each state retains control over its own public healthcare system it can continue to manage that system to reflect that state's healthcare needs and priorities.

Equitable distribution of resources, as demanded by social solidarity, also requires that each state allocates the healthcare budget it receives from the federal government appropriately within its borders.

Implementing open enrolment means that anyone who wishes to use private health insurance cannot be declined cover, regardless of their risk profile, if they find the policy conditions and premiums acceptable.

[Total 5]

Question 3(iv)

This question was poorly answered, with many candidates only making superficial remarks regarding each item in Package B in isolation.

The question paper contained a minor error. The present state of affairs for Item B5 should have been described as “minimum limits” for essential benefits. This did not have an impact on the final results as all candidates understood that reform B5 would remove any defined limits and co-payments on essential health services.

Note: To distinguish health insurance offered by for-profit insurance companies from South African medical schemes we have used the term “premium” in this solution. For marking purposes, the use of “contributions” is also acceptable.

Item B1 will create an incentive for individuals earning above the tax threshold to acquire private health insurance. (or rather it creates a disincentive for not being covered).

However, it will not make health insurance mandatory.

{Most candidates missed this point. Taxpayers still have the option to pay the penalty rather than purchasing health insurance (though it depends on how the penalty is calculated and how large it is relative to income.)}

Requiring proof of “credible health insurance” will prevent a situation where individuals claim to have health insurance when they did not...

...or try to avoid the penalty by purchasing cover just before doing their tax assessments and dropping it soon after.

If the criteria for “credible health insurance cover” are strict, in the sense that only health insurance products that comply with all the legal requirements are allowed, then the purchasing of “junk” health insurance products that offer limited benefits and simply exist to avoid the penalty will not be feasible.

These taxpayers will then be less reliant on free public healthcare, which should reduce the burden on the public healthcare system. (Remember that item A1 allows anyone to access free public healthcare facilities from 2018 onwards).

The above point assumes that private healthcare is perceived to be at least as good as public healthcare services in terms of access and quality. (*While this is currently true in South Africa it is not necessarily the case elsewhere in the world.*)

The resources within the public healthcare system can then primarily be used to provide healthcare to those who are not able to purchase private health insurance themselves.

The federal government can allocate income generated by these penalties to healthcare. This would effectively be a surcharge on individuals earning more than the income tax threshold for using public healthcare. This would replace the means test that was removed in reform package A but increase the base from only those that access the public health system.

To compensate health insurers for the additional risk and costs caused by anti-selection in a voluntary insurance environment, the required **once-off** late joiner penalties would have been large relative to the regular monthly or annual contributions. This would have made it difficult for individuals to purchase healthcare if they did not have the cash available.

{Most candidates missed the fact that before the reforms late joiner penalties are once-off amounts payable when initially purchasing health insurance cover.}

Many older (more vulnerable individuals) will now find it easier to purchase healthcare.

The penalty introduced under item B1 is intended to serve the same purpose as the LJP did – to discourage anti-selective behaviour where individuals only purchase health insurance later in life when they choose to claim.

Since the new penalty is payable annually it should be a more effective measure than a once-off late joiner penalty as individuals will be reminded on an annual basis that they should have health insurance coverage.

If most taxpayers take up health insurance, then the anti-selection risk faced by health insurers will be significantly reduced and the late joiner penalties will no longer be required (or at least will not have to be as large as before).

The extent to which this is true will depend on whether the penalties are large enough to induce people to purchase health insurance.

By placing limits on waiting periods **Item B3** is intended to prevent health insurers from using waiting periods as a tool to decline cover to individuals with certain pre-existing conditions by, for example, excluding those conditions from coverage for very long periods of time.

The “risk pooling” in **Item B4** is not clearly defined. It may be a mechanism for risk equalisation to ensure that health insurers do not compete on the risk profile of their insured risk pools.

Risk equalisation would remove/reduce competition between health insurers based on the risk profile of their insured populations.

It would depend on how much of the insurance risk will be pooled by the risk equalisation method and how much will be retained by insurers.

Alternatively, it may be some form of pooling to manage risk and uncertainty, such as a state-run healthcare reinsurance fund. This will be intended to ensure that adverse experience or a catastrophic event such as an epidemic does not lead to one or more health insurer going under and leaving their policy holders without cover.

Risk pooling could also serve as risk equalisation and reinsurance at the same time, depending on how it is structured.

Item B5 is like the expansion of PMBs in South Africa. The reform is intended to ensure that policyholders get access to a minimum set of essential healthcare benefits.

It also removes the ability of health insurers to impose limits, deductibles and co-payments on these essential healthcare services. Individuals with private healthcare insurance cover will be able to access these services without incurring out-of-pocket expenditure or having to rely on the public healthcare system for the treatment of these conditions.

Item B6 (abolishing personal medical savings accounts) is intended to increase the level of risk cross-subsidy within private health insurance risk pools.

Currently unspent health savings contributions will accrue to individual policyholders.

If all benefits must now be paid from shared risk pools, because health savings accounts have been abolished, then unspent benefits will revert to the risk pool and low claiming individuals will be cross-subsidising higher claimers.

[Total 8]

Question 3(v)

Part (v) was very poorly answered, with most candidates struggling to generate sufficient points for an 18-mark question. In general candidates failed to consider the fact that the impact of the proposal may not be the same for all consumers, which limited the scope of their solutions.

Given the question at hand it was important that candidates based their assessment of the impact of introducing Package C before Package B from the point of view of the consumer. Whether the lobby group's proposal is beneficial for the healthcare system of Nexus, private healthcare providers, health insurers, brokers or employers is only relevant to the extent that it affects consumers.

Because the context of this part of the question is another country, many of the facts that are accepted as given in the South African environment do not necessarily hold true, specifically where details are not provided. Considering the implications of alternative scenarios (such as whether health insurers can write business on a group basis) was an opportunity to generate additional marks that most candidates failed to exploit.

The impact of the proposed tax reforms in **Item C1** may result in income tax payers under the age of 65 receiving a larger or a smaller credit, depending on the formula that will be applied (it is not specified) and how its results compare to the current \$2,000 rebate and the ultimate amount of income tax that they will pay.

Those who would pay more tax under the new arrangement would not be better off if the reform is introduced earlier (and vice-versa).

Tax payers over the age of 65 will be able deduct all household healthcare expenses for tax purposes, including health insurance premiums. This will make it much more affordable (essentially no cost difference) for these older tax payers to purchase private health insurance rather than using free public services.

If health insurance premiums are included in the definition of "household healthcare expenditure" then private health insurance cover for taxpayers will be subsidised by the tax deduction.

For these over 65s co-payments and limits will also be tax deductible. However, these consumers may experience strain if they do not have the cash to pay for these out-of-pocket healthcare expenses.

For tax payers aged 65 and older the earlier introduction of this reform will be beneficial as they will enjoy its benefits five years earlier.

Item C2 will increase the number of employed individuals with private health insurance coverage.

If this results in them being able to access better quality healthcare than what is available for free from public facilities, then it will benefit to these consumers.

Employees of affected companies will now be covered under mandatory group health insurance. Reduced administration on group policies (through efficiencies such as collecting premiums from a small number of pay points and not from individual policyholders), together with reduced anti-selection risks in a mandatory environment should result in lower premiums...

...if insurers can differentiate group and individual premiums.

Thus, the premiums should be more affordable than the premium rates that employees in smaller companies would have been able to obtain if they voluntarily decided to purchase health insurance individually.

By increasing coverage and access to lower group health insurance premiums the earlier introduction of this reform would be in the interests of employees of smaller companies.

However, there may be secondary effects such as small companies (with slightly more than 20 employees) reducing staff counts or undergoing corporate restructuring such as dividing one business into many smaller businesses to avoid the requirement. This would not be in the interest of consumers who are dismissed and cannot find similar employment elsewhere.

The importance of the secondary effects would depend on whether the rule results in increased labour costs for such companies.

These companies may also reduce salaries based on the argument that the employer now provides healthcare coverage and employees don't have to purchase it themselves. It would depend on how remuneration is structured. For example, this argument would not work if most employees are remunerated on a total cost to company basis and health insurance costs are deducted from this rather than being paid by the company as a separate benefit.

Cover is now mandatory for many, but the late joiner penalty will remain in place. If the employer pays the late joiner penalties on behalf of employees, then the penalty will not affect the employees, but the employer will have to make the once-off payment. If employees are on a cost-to-company basis then they would have to fund the late-joiner penalty (if any). This could be regarded as being unfair.

C1 will also make cover mandatory for all employees in affected companies earning below the tax threshold. Such employees would not be able to benefit from the tax credit.

If cover is mandatory and employees must pay their own contributions their take-home income will be affected badly if premiums are not affordable.

Item C3 reduces (but does not eliminate) the ability of health insurers to risk rate health insurance premiums.

It will create a greater cross-subsidy from low-risk policyholders to high-risk policyholders.

We would expect that high-risk individuals will see their premiums reduce.

Low risk individuals will pay slightly higher premiums to make up the loss of contribution income from higher risk individuals.

Average premiums should remain unchanged, unless this change leads to a change in the average risk profile of the insured population.

The implementation of **Item C4** curbs the ability of health insurers to induce brokers to sell their products based on the commission that they offer.

The removal of these incentives means that brokers will now have greater incentive to provide their customers (consumers) with objective advice.

Unregulated commission levels would also have contributed to non-healthcare expenditure. Slight premium reductions should be possible since health insurers will no longer incur commission costs.

On the other hand, consumers will now have to pay additional broker fees themselves where this was previously not necessary.

If the rules are not strict enough insurers may still be able to incentivise brokers in other ways (such as prizes or “appreciation” gifts in the form of vacations or other benefits for brokers who bring them a lot of business) then consumers will ultimately pay fees to their brokers as well as the cost of these incentives that will form part of the non-healthcare cost component of their premiums.

The extent to which this adds a new cost burden on consumers depends on

- the level of the regulated fees,
- How the fees are defined (for example a flat fee or a percentage of premiums with/without a maximum level), and
- the ability of consumers to purchase health insurance through other channels such as direct sales.

For example, if fees are based on a percentage of contributions brokers will be incentivised to sell the most expensive coverage they can to maximise their income, even if this is not in the interest of their client.

If the regulations only set maximum limits on fees it creates an opportunity for brokers to compete based on the fees they charge. Consumers would benefit from lower fees based on this competition.

Delayed reforms:

The delay of **Item B1** will mean that anti-selection risks posed by voluntary cover will remain and premiums will remain higher to reflect this.

On the other hands consumers will have more choice in terms of whether they want to purchase health insurance or not.

The imposition of mandatory cover under C1 will mean that, if B1 is implemented later very few of the formally employed will be affected by the tax penalty.

The delay in **Item B2** will mean that previously uncovered individuals who wish to enter the private health insurance market during this period will still have to find potentially large amounts of cash to pay the late joiner penalties.

While it does not mandate community rating, **item C3** moves the health insurance industry closer to a community rated environment than it currently is.

The delay in Item B3 means that insurers will still be able to use unrestricted waiting periods as a tool to deny high risk individuals cover for certain conditions.

Without the introduction of some form of risk equalisation via reform **item B4** there will therefore be a five-year period between 2023 and 2028 where average premiums charged by health insurers for the same benefits will be dependent on the profile of its risk pool.

This will create an incentive for health insurers to compete by managing the risk profiles rather than offering access to efficient, quality healthcare.

Reform **item C4** (broker commission) will limit their ability to attract younger and healthier lives by incentivising brokers during this period.

However, the delay of many of the reform items contained in **Package B** gives health insurers an opportunity to avoid high risk members (“cherry pick”) by means of waiting periods and benefit design (particularly limits and co-payments on a less comprehensive essential benefits package).

Reform **Item B5**, relating to the expansion of essential healthcare benefits, will also be delayed. Depending on the differences between the current and revised essential healthcare packages there will be more scope for insurers to exclude certain conditions and treatments.

Even though higher risk individuals will be able to purchase cover at slightly lower rates due to **Item C3**...

...and insurers may not deny anyone cover (since open enrolment mandated by **Item A4** will already have been in force since 2018) ...

, health insurers will still be able to apply unrestricted waiting periods. High risk individuals may therefore face onerous waiting periods and exclusions (indefinite waiting periods) that effectively deny them the cover they require...

...because reform **item B3** (maximum waiting periods) will be delayed by five years.

Policyholders will also be required to make greater out-of-pocket payments on essential healthcare since insurers may still impose limits and apply deductibles to essential services.

Prospective high-risk policyholders may therefore choose rather to forego health insurance coverage (if they have the option) and rather use free public healthcare services.

The extent to which this will pose a problem for these individuals will depend on how access and quality in public facilities compare to those available in private facilities. For example, if waiting lists in the public sector are longer.

Personal health savings accounts will continue to be available as part of health insurance cover for another five years. This will be beneficial for low claiming individuals who can build up positive balances.

For the same amount of “benefit” on a personal medical savings account the level of savings contributions will be higher than the cross-subsidised risk premium for the same level of “benefits”.

Thus, the delay will be detrimental for high claiming policyholders since their healthcare costs (those that are paid from personal medical savings accounts) will not be cross-subsidised by lower claiming policyholders.

Conclusion:

Introducing Package C earlier should make private healthcare premiums more affordable for many individuals (particularly income tax payers aged 65 and older, employees of companies with between 20 and 500 employees and policyholders who pay high premiums based on their risk factors) and would be in their interests. (They will pay less for similar cover.)

However, **the delay of many of the reforms contained in package B** will not be in the best interests of high risk individuals as insurers can still decline cover, apply waiting periods without limit and base their products on a less comprehensive essential benefits package. (They will get less value for money from their health insurance premiums in terms of benefits).

The lobby group’s statement that changing the order of reforms is therefore in the best interests of consumers is therefore not universally true.

[Total 18]

[Question 3 Total 45]

END OF EXAMINERS’ REPORT