Actuarial Society of South Africa

MARKING SCHEDULE

20 OCTOBER 2023

Subject F201 - South African Health and Care Specialist Applications

QUESTION 1

Question one was a deep dive into the continued trends in the medical scheme sector with a focus on the Health Squared liquidation – referred to as Health R Us. This was a landmark event in the medical scheme environment as it was a large scheme that liquidated and these members were subsequently left to seek cover elsewhere in the market. This was a relatively straightforward question for those who were well versed in these developments but required an element of critical thinking as to why this liquidation occurred and practical thinking as to how to deal with the effects. The implications are both short term and longer term impacting the members of Health R Us, the schemes absorbing them and the broader industry stakeholders.

1(i) Discuss the medical scheme industry trends illustrated in the graphs above, including the reasons for each observed trend. [10]

Part (i) asked candidates to identify the content of a series of graphs on medical scheme trends and explain their understanding of these trends. Candidates seemed to have become very familiar with answering questions from graphs and with the unique features and trends of the South African medical scheme environment. This question was generally answered well.

Declining number of medical schemes

Figure 1 shows how the number of medical schemes is declining over time…

…with the reduction being more pronounced in the open medical scheme environment.

These pressures have been more pronounced in the open schemes market due to increased competition compared to those faced by the majority of restricted schemes.

Most (but not all) restricted medical schemes face less intense competition, particularly if they are associated with a sponsoring employer/industry and membership of the scheme is mandatory for their employees.

However, restricted schemes are commonly compared to open medical schemes. A restricted scheme with a poor demographic profile will find that members and employers will consider open scheme alternatives if these offer a better value proposition.

There are several reasons why the number of medical schemes in South Africa is reducing over time:

Consolidation: The medical scheme industry has been consolidating in recent years, with smaller schemes amalgamating with larger schemes.

Liquidation: Although a rare event, medical schemes can liquidate, leading to the reduction of medical schemes in the industry.

Regulation: The Medical Schemes Act of 1998 introduced regulations that made it more difficult for new medical schemes to enter the market.

Cost pressures: Medical schemes are facing increased costs due to rising healthcare costs, an ageing population, and increasing prevalence of chronic diseases. This has put pressure on smaller medical schemes, which may struggle to stay afloat.

Economic factors: South Africa's challenging economic climate has led to a decline in the number of people who can afford to pay for medical scheme cover. This has resulted in a decline in the number of medical scheme members, which in turn has led to a decline in the number of medical schemes available.

Declining proportional medical scheme population

Figure 2 shows the proportion of medical scheme members as a proportion of the South African population has been decreasing over time, which is due to several factors:

Affordability: The cost of medical scheme cover has been rising faster than inflation and salary increases, making it increasingly difficult for many South Africans to afford to retain their membership or for new lives to purchase membership for the first time.

Income inequality: South Africa has one of the highest levels of income inequality in the world, and an increasing number of people simply cannot afford medical scheme cover.

Economic factors including employment: South Africa's challenging economic climate has led to a decline in the number of people who can afford to pay for medical scheme cover.

Lack of trust in the healthcare system: Some South Africans are hesitant to join medical schemes because they do not trust the healthcare system to provide them with quality care.

The young and healthy may opt not to purchase medical scheme cover because they don't view it as being a priority.

The South African government is aware of these challenges and is considering measures to improve access to healthcare for all citizens including low cost benefit options, national health insurance. These have not been implemented.

The declining dependency ratio indicates that people are having less children or people choose not to arrange medical scheme coverage for their children, and they only opt for cover once working and/or their employer demands medical scheme coverage.

COVID-19 may have affected the trends – people may have lost membership because of poor economic times.

The employed population is not growing in size and as many of these lives purchase medical scheme cover voluntarily or through compulsion from the employer, the medical scheme population is unlikely to grow as a result.

Growing South African population, with stagnant medical scheme population

Figure 2 also shows that the South African population is growing, while the medical scheme population remains stagnant (not surpassing the nine million mark). The medical scheme population is size is falling as a percentage of the population size. This is a result of a variety of reasons, including:

Natural Increase: This refers to the difference between the number of births and deaths in a population. In South Africa, the birth rate is higher than the death rate, leading to natural increase and population growth.

Migration: People moving into South Africa from other countries also contributes to population growth. Some individuals may come to South Africa for work or education opportunities, while others may seek asylum or refuge and not necessarily seek medical scheme cover, particularly if working in the informal sectors of the economy.

Improved Life Expectancy: Advances in medicine and healthcare have led to an increase in life expectancy in South Africa, leading to a growing older population.

It's worth noting that population growth can have both positive and negative impacts on a country, such as increased economic growth and improved quality of life, but also increased pressure on resources and infrastructure.

[Total 10, Available 13]

1(ii) Outline the regulatory steps to liquidate *Health R Us*. [8]

Candidates are not expected to relay the steps set out in the Medical Schemes Act verbatim, however knowledge of the key steps is expected.

Section 64 of the Medical Schemes Act refers to voluntary or automatic dissolution.
"1) In the event of the rules of a medical scheme providing for the dissolution or termination of such medical scheme upon the expiry of a period or upon the occurrence of an event, or upon a resolution by the members that such medical scheme shall be terminated, then upon the expiry of such period, or the occurrence of such event, or the passing of such resolution, such medical scheme shall, subject to the provisions of this section, be liquidated in the manner provided for by the rules of such medical scheme, and the assets of that medical scheme shall, subject to the provisions of this Act, be distributed in the manner provided for by the rules of the medical scheme."

Section 53 of the Act refers to the process of winding up a scheme in line with the Companies Act
1) Chapter XV of the Companies Act 1973 (Act No. 61 of 1973), shall, subject to the provisions of this section and with the necessary changes, apply in relation to the winding-up of a medical scheme and in such application the Registrar shall be deemed to be a person authorised by section 346 of the Companies Ac6 1973, to ~e an application to the High Court for the winding-up of the medical scheme.
(2) The Registrar may, with the concurrence of the Council and with the approval of the High Court, retie an application under section 346 of the Companies Act 1973, for the winding-up of a medical scheme if he or she is satisfied, that it is in the interest of the members of that medical scheme to do so.

The liquidation process for a registered medical scheme in South Africa is governed by the Medical Schemes Act, which sets out the regulatory steps that must be followed in order to liquidate a medical scheme.

The following steps provide an overview of the process:

Determination of insolvency

The first step in the liquidation process is the determination of insolvency by the Board of Trustees of the medical scheme.

The Board must determine that the medical scheme is insolvent and unable to meet its obligations to its members.

Notification of the Council for Medical Schemes

Once the Board has determined that the medical scheme is insolvent, it must notify the Council for Medical Schemes (CMS) of its intention to liquidate the scheme.

Appointment of a liquidator

The next step is the appointment of a liquidator by the CMS.

The liquidator will be responsible for managing the liquidation process, including the distribution of the scheme's assets to its members.

The board of trustees shall appoint a liquidator, who will be approved by the Council for Medical Schemes.

The date of liquidation will commence on the date of this approval.

Preparation of a liquidation plan

The liquidator will prepare a liquidation plan that sets out the steps that will be taken to distribute the scheme's assets to its members.

This plan must be approved by the CMS.

The Registrar may request an independent valuation.

Notification of members

The liquidator must notify all members of the medical scheme of the liquidation process, including the distribution of assets.

Notice will be published in the Gazette stating the period for which these reports will be available for inspection.

Objections must be given in writing to the Registrar no later than 14 days after the documents have been closed from inspection.

If there are no objections, the Registrar will instruct the liquidator to complete the liquidation.

Distribution of assets

Once the liquidation plan has been approved by the CMS, the liquidator will distribute the scheme's assets to its members in accordance with the plan.

Cancellation of registration

Within 30 days of completion of the liquidation, the liquidator will furnish the Registrar with a final account and final balance sheet, signed and certified by the liquidator…

…showing the assets and liabilities of the medical scheme at the commencement of the liquidation and the manner in which the assets have been realised and the liabilities have been discharged.

If the Registrar is satisfied that the said account and balance sheet are correct and that the liquidation has been completed, he/she shall cancel the registration of the medical scheme, and thereupon such medical scheme shall be deemed to be dissolved.

The liquidation process for a medical scheme in South Africa can be a complex and lengthy process.

The CMS can provide guidance on the liquidation process and the requirements under the Medical Schemes Act.

[Total 8, Available 11]

1(iii) Critically evaluate the provided reasons for liquating *Health R Us*. [10]

Candidates were expected to address each of the three provided reasons for liquidating, and discussing whether or not the reasons are valid, and if so/not, why, in the context of the key measures included in the preamble.

These reasons were taken verbatim from the publication of the liquidation as given by the Board of Trustees of the Health R Us. Candidates were expected to critically evaluate the reasons, in particular the effects of the Covid-19 pandemic on claims costs for an older age profile of lives was tested, as well as the effects of declining membership over time. It was pleasing to see that candidates applied their minds to these reasons and how they affect the medical schemes sustainability. Top performing candidates were able to comment that the demise of the scheme appeared to have occurred very rapidly at the end and that Covid-19 generally resulted in schemes producing surpluses rather than further financial deterioration as was reported for Health R Us.

Financial deterioration caused by the high claims associated with the COVID-19 pandemic

The COVID-19 pandemic has led to increased demand for medical services, as well as increased costs for medical schemes such as *Health R Us*, such as those associated with COVID-19 testing and treatment.

Additionally, many people have lost their jobs and income, leading to a decrease in the number of people enrolled in medical schemes like *Health R Us*, and a decrease in the amount of contribution income that medical schemes receive.

In some cases, these factors can put significant financial strain on a medical scheme, making it difficult for the scheme to meet its financial obligations and leading to the possibility of liquidation.

Contrary to *Health R Us*' assertions that the primary cause of its insolvency was the high COVID-19 claims, for most schemes COVID-19 claims did not result in a drop in solvency.

Health R Us' demise is unusual, because it blames the COVID-19 pandemic for the deterioration in its financial position, while most medical schemes saw their finances improve despite the cost of COVID-related claims, because so many of their members deferred non-urgent care.

Most medical schemes have reported that the cost of Covid-19 claims was more than offset by a sharp reduction in non-Covid expenditure as members deferred non-urgent care, leaving many schemes with such deep reserves that they kept contribution increases for the past two years to historically low levels.

However, it is possible for *Health R Us* to liquidate due to the impact of the COVID-19 pandemic…

…because the scheme's beneficiaries are older (i.e. 50 years) than the market average.

The claiming behaviour of the older and poorer risk profile members on *Health R Us* could have been largely inelastic to the COVID-19 impact, with members continuing to claim at a level higher than expected.

However it is unlikely that Health R Us was disproportionately negatively impacted by Covid-19 claim costs despite their older age profile as the deferment or cancellation of non emergency healthcare purchasing tended to outweigh the costs directly attributed to Covid-19.

Furthermore, excess mortality was experienced during this period which was directly related to Covid-19. This affected the older population more than the younger population and this may have resulted in loss of older lives, all else equal.

Older than industry average age profile

Because of the imposition of community rating without risk equalisation the most important factor in determining a scheme's healthcare result is the risk profile of its beneficiaries (age, gender and chronic status).

Expenditure is always due to the risk profile. The lack of risk equalisation and imposition of community rating results in the inability to price appropriately for the risk without losing market share.

This forces medical schemes to compete on the basis of their demographic profile instead of the more desirable basis of funding quality healthcare as efficiently as possible.

As contribution rates escalate over time, lower risk members may buy down to benefit options that offer less extensive benefits or leave *Health R Us* completely, leaving a higher costing risk pool in the benefit option offering more extensive benefits, escalating the costs further.

This spiral can worsen the age profile even further and erode the cross-subsidies needed for the sustainability of each benefit option.

The situation has created a phenomenon commonly known as the "actuarial death spiral". Schemes with poor profiles, such as *Health R Us*, find that they cannot sustainably offer the same level of benefits for the same contribution levels as schemes with better demographic profiles, leaving them unable to compete.

Uncompetitive schemes will lose members to their competitors and find it hard to attract new business. Since it is easier for the younger and healthier members to move between schemes (due to limited underwriting) this will lead to the scheme's risk profile deteriorating even further as time progresses.

Typically, the actions required to make an unsustainable scheme more competitive (lower contributions and enhanced benefits) will harm its sustainability even more.

Eventually such schemes become financially unsustainable and must either be liquidated or amalgamate with another medical scheme. This is likely the case for *Health R Us*.

Substantial membership losses over the years

As contribution rates escalate, lower risk members may buy down to benefit options that offer less extensive benefits or leaving *Health R Us* completely, leaving a higher risk pool in the benefit option offering more extensive benefits, escalating the costs further. This spiral can prompt further membership losses.

One of the biggest challenges facing open medical schemes like *Health R Us* is the fact that medical scheme membership is not mandatory in an open enrolment environment and, therefore, extremely vulnerable to anti-selection.

Open schemes try to manage this by focusing on the recruitment of large corporate clients where membership of the scheme is mandatory for employees, typically with a good risk profile.

As contributions become more expensive, this exposes the entire open schemes industry (not just individual schemes) to anti-selective risks as individuals with lower healthcare utilisation expectations opt out of the industry altogether, whereas the members who opt to remain medical scheme members will be those who expect to utilise their benefits.

The situation is further exacerbated by the uncertainty regarding the demarcation between medical scheme cover and health insurance. Since health insurers are not subject to the same restrictions as medical schemes, they are able to offer products that appeal to lower risk members, who may choose less comprehensive medical scheme options or forego medical scheme cover completely.

These anti-selective effects are heightened by the limited underwriting that schemes may impose.

At some stage in the future a number of these corporate groups with good risk profiles may find that they can provide the same cover more affordably by means of a restricted medical scheme for their employees, leading to the creation of several new restricted medical schemes…

…However, the industry has not seen any new restricted medical schemes in recent years due to the onerous requirements to set up a new scheme and the administrative demands of overseeing a scheme where trustees include employer and employee representatives.

This situation puts the open medical schemes industry at a disadvantage compared to restricted schemes with mandatory membership. Over time this will lead to open schemes having poorer demographic profiles and higher contributions compared to restricted medical schemes with stable profiles. This is likely the case with *Health R Us*.

However, restricted schemes often have a significant pensioner population comprising of the retired staff of that employer (particularly if there is a post-retirement subsidy of scheme contributions).

[Total 10, Available 15]

1(iv) Identify the various stakeholders when a medical scheme absorbs these members as opposed to liquating *Health R Us*, briefly explaining their vested interest. [12]

This part required candidates to integrate their knowledge from several areas to produce a list of stakeholders in the two medical schemes, including a brief explanation of their vested interest.

Candidates who did well were able to identify the fiduciary duty of Trustees to act in the best interests of the members of their scheme.

When a medical scheme absorbs these members as opposed to liquating *Health R Us*, there are several stakeholders who are impacted by the process and have a vested interest in the outcome.

It is important to consider the interests of all stakeholders when planning and executing an amalgamation of medical schemes in South Africa.

All stakeholders should be consulted and involved in the decision-making process to ensure that the amalgamation is in the best interests of the members and meets the regulatory requirements of the CMS.

The following is a list of some of the key stakeholders involved in an amalgamation of *Health R Us*:

Members

The members of both medical schemes are the primary stakeholders and are likely to be most affected by the amalgamation...

Including the dependents of the main members of both medical schemes.

They will want to know how the amalgamation will impact their benefits, contributions, and access to healthcare services.

The beneficiaries of the open medical scheme will be joined by *Health R Us*' group of older beneficiaries who may be expected to contribute less to reserves on average (or deplete more) than the current membership, which may lead to higher future contributions than if *Health R Us* had not joined.

Healthcare providers

Healthcare providers, such as hospitals and medical practitioners, are also stakeholders in the amalgamation as they will be impacted by changes to the way they are reimbursed and the conditions under which they provide care to members of the amalgamated scheme.

Including designated service providers for prescribed minimum benefits and…

…any contracted or listed networks of primary care providers, GPs, specialists, optometrists, dentists, hospitals and pharmacies.

Regulators

The Council for Medical Schemes (CMS) is the regulator of medical schemes in South Africa and is responsible for overseeing the amalgamation process.

The CMS will want to ensure that the amalgamation is in the best interests of the members and is consistent with the regulations governing medical schemes.

The Competition Commission should view the proposed amalgamation fit for approval if it deems it not to be detrimental to the competitive environment of the medical scheme and/or related industries.

The Department of Labour should see the amalgamation in a favourable light if, on the whole, employees' rights, as detailed in labour legislation, are not at risk of being violated.

Employers

Employers who sponsor medical schemes for their employees are also stakeholders in the amalgamation as they will be impacted by changes to the scheme's benefits and contributions.

Employers have a vested interest in the cost of medical schemes for their employees. When medical schemes amalgamate, there may be changes in the contribution structure that can impact employers. Employers will want to ensure that the contribution levels of the post-amalgamation medical scheme are reasonable and competitive in the market.

Employers have a vested interest in ensuring that their employees receive high-quality care from the medical scheme. They will want to ensure that the amalgamation does not negatively impact the quality of care that their employees receive.

Employers have a vested interest in employee satisfaction with the medical scheme. If employees are not satisfied with the post-amalgamation medical scheme, it can impact their

morale, their productivity and the reputation of the employer. Employers will want to ensure that the new entity meets the needs and expectations of their employees.

Employers have a vested interest in ensuring that there is continuity of coverage for their employees during the amalgamation process. Employers will want to ensure that their employees are not left without coverage during any transition period and that the new entity provides seamless coverage.

Board of Trustees

The Board of Trustees has a fiduciary duty to act in the best interests of members and by accepting a group of lives that would experience higher claim costs that could negatively impact the financial position of the scheme raises the question as to whether Trustees would be going against this duty by accepting such a group, even if compelled to do so.

The trustees of both medical schemes are responsible for overseeing the amalgamation process and making decisions that are in the best interests of the members.

As well as the principal officers of both medical schemes.

The Board of Trustees has a vested interest in the financial stability of the medical scheme. They want to ensure that the amalgamation does not negatively impact the financial standing of the medical scheme.

The Board of Trustees has a vested interest in ensuring that the amalgamation is compliant with all relevant regulations and legal requirements. They want to ensure that the new entity is in good standing with regulatory bodies, such as the Council for Medical Schemes in South Africa.

The Board of Trustees has a vested interest in the governance of the new entity. They want to ensure that the new entity has a strong and effective governance structure that is capable of managing the medical scheme effectively and making decisions in the best interests of its members.

The Board of Trustees has a vested interest in member satisfaction with the new entity. They want to ensure that the new entity is capable of providing high-quality services and meeting the needs of its members.

Administrators

The administrator of both medical schemes are stakeholders, whether the schemes are self-administered, or make use of a third party.

If the amalgamating scheme is moving to another administrator there is a loss of business which can significantly negatively impact on the viability and operations of that administration business.

Administrators have a vested interest in ensuring that the amalgamation process does not disrupt the operations of the medical scheme. They want to ensure that the medical scheme continues to function smoothly and that members receive the services they need.

Administrators have a vested interest in ensuring that the new entity is capable of meeting the needs of its members. They want to ensure that the new entity provides high-quality services and that members are satisfied with the care they receive.

Administrators have a vested interest in the financial viability of the new entity. They want to ensure that the new entity is financially stable and capable of meeting its financial obligations.

Administrators have a vested interest in ensuring that the amalgamation process is compliant with all relevant regulations and legal requirements. They want to ensure that the new entity is in good standing with regulatory bodies, such as the Council for Medical Schemes in South Africa.

Managed care organisation service providers

Both medical schemes' managed care organisation service providers provide services without risk transfer.

If the amalgamating scheme is moving to another managed care organisation there is a loss of business which can significantly negatively impact on the viability and operations of that managed care organisation.

Managed care organisations have a vested interest in expanding their market share. When a medical scheme amalgamates with another, it may provide an opportunity for managed care organizations to expand their reach and acquire new members. As such, managed care organizations may work with the new scheme to develop strategies that allow them to reach a wider audience.

Managed care organisations have a vested interest in containing costs. This is because their profitability is often tied to the cost of healthcare services. When a medical scheme amalgamates with another, there may be opportunities to identify cost-saving measures. Managed care organisations may work with the new scheme to identify areas where costs can be reduced without compromising the quality of care.

Managed care organisations have a vested interest in enhancing the quality of care provided by the medical scheme. This is because the quality of care impacts the cost of healthcare services, and the cost of healthcare services impacts the profitability of the managed care organisation. As such, managed care organisations may work with the new scheme to identify areas where the quality of care can be improved.

Managed care organisations have a vested interest in streamlining processes. This is because inefficiencies can lead to increased costs and lower profitability. When a medical scheme amalgamates with another, there may be opportunities to streamline processes and reduce inefficiencies. Managed care organisations may work with the new scheme to identify areas where processes can be improved and made more efficient.

Managed care organisations often have long-term relationships with medical schemes, and as such, they have a vested interest in the success of the new entity. This is because their own success is tied to the success of the medical scheme. Managed care organisations may work with the new scheme to build a strong, long-term relationship that benefits both parties.

Reinsurer

Both medical schemes' reinsurer(s) if applicable.

Reinsurers have a vested interest in ensuring the financial stability of the post-amalgamation scheme. This is because their own financial interests are tied to the success of the new scheme. As such, reinsurers may work with the new scheme to ensure that it has the necessary financial resources to remain viable.

Reinsurers have a vested interest in ensuring that the post-amalgamation medical scheme has adequate risk management processes in place. Reinsurers may work with the new scheme to identify potential risks and put in place measures to mitigate them.

Distribution channels

Both medical schemes' sales, marketing, distribution and advice channels, if applicable, will be impacted by the amalgamation.

Distribution channels have a vested interest in retaining the customers of the medical schemes involved in the amalgamation. They want to ensure that their customers are satisfied with the post-amalgamation medical scheme and do not switch to a different medical scheme or to a different broker.

Distribution channels have a vested interest in ensuring that the post-amalgamation medical scheme offers a wide range of products that are relevant to their customers. They want to ensure that their customers have access to the products that they need and are not dissatisfied with the range of products on offer.

Distribution channels have a vested interest in ensuring that the post-amalgamation medical scheme provides high-quality customer service. They want to ensure that their customers are satisfied with the level of service they receive and that any issues are dealt with promptly and effectively.

Distribution channels have a vested interest in the overall market share of the post-amalgamation medical scheme. They want to ensure that the new entity is able to compete effectively in the market and maintain or increase its market share.

Non-healthcare service providers

Both medical schemes' providers of other non-healthcare services, including actuarial services, auditing services, legal services, banking services, debt collection services, investment and asset managers, investment consultants, etc.

Suitably qualified appointed person

If the amalgamation discussions reach a stage where the two schemes start a Section 63 process then both schemes may appoint a suitably qualified person to write a report on the proposed transaction. This report is to be drawn up by an independent valuator or other competent person nominated by the Registrar at the expense of the medical schemes concerned:

Both medical schemes' suitably qualified appointed person.

Creditors

Both medical schemes' creditors.

Creditors have a vested interest in ensuring that their debts are repaid. When a medical scheme amalgamates with another, there may be outstanding debts that need to be resolved. Creditors will be interested in the terms of the amalgamation and the repayment of any outstanding debts.

Creditors have a vested interest in the financial stability of the new entity. They want to ensure that the amalgamation will result in a financially stable medical scheme that can meet its

financial obligations. This is important because if the new entity is not financially stable, it may struggle to repay its debts.

Creditors have a vested interest in transparency during the amalgamation process. They want to ensure that they are aware of all the details and decisions made during the amalgamation. This is important to ensure that their interests are taken into consideration during the process.

Creditors have a vested interest in being treated fairly during the amalgamation process. They want to ensure that their rights and interests are protected, and that they are not disadvantaged by the amalgamation. This includes being consulted and involved in decision-making processes that may impact their rights and interests.

Creditors may have a vested interest in maintaining a continued business relationship with the new entity. This may include providing ongoing credit or services to the new entity. Creditors will want to ensure that their business relationship with the new entity is based on a solid financial foundation and that their interests are protected.

[Total 12, Available 27½]

1(v) Explain how you would perform a benefit option mapping to ensure the *Health R Us* members would experience the same level of benefit richness when absorbed by another medical scheme. [10]

The capacity of the Healthcare Actuary has deliberately not been specified, but he/she can act as the consultant to:

- *Health R Us;*
- *The absorbing medical scheme;*
- *The Council for Medical Schemes.*

Regardless, the actuary should perform a benefit option mapping such that the best interests of all members are optimised.

Benefit option mapping is a process used to compare and align the benefits offered by two medical schemes that are contemplating an amalgamation.

The goal of benefit option mapping is to ensure that the members of both schemes receive consistent and comparable benefits after the amalgamation…

…Or map to the closest option…

…Or identify an appropriate option if there isn't one that matches closely…

…Or for the medical schemes to decide which options of the original two schemes to retain such that members are minimally impacted…

The outcome of the benefit option mapping would represent the options that the members will most likely be defaulted to, should they not exercise their right to select a benefit option, in the event of an amalgamation.

The high degree of differentiation of benefit structures makes precise benefit comparisons difficult.

Another factor making a benefit comparison (and by implication a benefit option mapping) difficult is the fact that the value placed on a particular benefit by a potential beneficiary is not necessarily equal to the expected cost of providing that benefit or the value placed on the benefit by another beneficiary.

Mapping 8 benefit options would be a very cumbersome task. All assumptions should be clearly stated so that members understand clearly what the trade-offs are.

Here is a step-by-step guide to conducting a benefit option mapping:

Gather data

The first step is to gather data on the benefits offered by both medical schemes.

This should include information on the types of benefits offered, the levels of cover, access considerations for example networks and preferred service providers, and any exclusions or limitations.

If the benefit option mapping will be performed on a qualitative basis, the data would typically involve benefit option brochures and/or member guides for the respective medical schemes and all their benefit options.

However, if the benefit option mapping will be performed on a quantitative basis with a detailed actuarial simulation, then members' past claims experience data will need to be gathered with the corresponding membership data of both medical schemes.

Compare benefits

Next, compare the benefits offered by each scheme to identify any discrepancies or differences.

This will help to identify areas where changes need to be made to align the benefits offered by both schemes.

If a quantitative approach is going to be followed, the actuary can quantify a metric (such as the benefit richness or value-for-money) and map the benefit options more precisely based on similar values of the particular metric.

Compare contribution levels

Next, compare the contribution levels of each benefit option and how this would compare for each matching pair.

This will help to identify affordability for the same level of benefit…

…and whether the members would experience the same level of value for money.

Identify gaps

Identify any gaps in the benefits offered by both schemes and assess the impact of these gaps on the members.

Align benefits

Based on the results of the comparison and gap analysis, align the benefits offered by both schemes.

This may involve adjusting the levels of cover, adding or removing benefits, or changing the conditions under which benefits are provided.

Assess impact

Assess the impact of the aligned benefits on the members, taking into account factors such as the cost to members (not just in contributions but also co-payments and deductibles), the quality of care provided, and any regulatory requirements.

It is critical in any comparisons to ensure that the populations being compared have been standardised for demographic factors (at least age and gender).

In making comparisons of providers the actuary needs to consider whether it is also necessary to standardise for co-morbidities (multiple conditions or factors that affect the outcome) and for the severity of the cases (such as hospital case-mix and a measure of overall disease burden).

Implement changes

Once the benefits have been aligned, implement any necessary changes to ensure that the members of both schemes receive consistent and comparable benefits after the amalgamation.

Consider which benefit options to retain - the amalgamating scheme does not need to use the 'larger' scheme benefit options only, it can carry over options from the 'smaller' scheme.

Monitor performance

Monitor the performance of the amalgamated scheme to ensure that the benefits are meeting the needs of the members and that the goals of the amalgamation have been achieved.

It is important to note that benefit option mapping is a complex process that requires careful planning and execution to ensure that the members of both schemes receive consistent and comparable benefits after the amalgamation.

[Total 10, Available 14]

1(vi) Discuss the advantages and disadvantages of this proposal. [10]

The equal apportionment method as a risk-sharing model has the following advantages and disadvantages:

Advantages

This proposal poses a growth opportunity for each of the 10 largest open medical schemes, which could be beneficial given the stagnant growth in the total medical scheme industry (as shown in *Figure 2*)…

…which increases the risk pool sizes, promoting enhanced capability to cross subsidise…

…which, in turn, can result in better pricing and benefits for members, as the open schemes compete to offer the best value for money and attract new members.

However, adding 3 000 beneficiaries to each of the 10 largest open medical schemes should have an insignificant impact to each scheme's membership pool - depending on the risk profile of those lives transferred.

This proposal provides an opportunity for the 10 largest open medical schemes to share the cost of *Health R Us* members' healthcare burden among more schemes and members (as opposed to one scheme taking on the full liability), which can help to reduce the financial burden.

This can help to ensure that the financial impact of any one member's healthcare needs is spread across a larger pool of members, reducing the risk of any one scheme bearing an unmanageable financial burden.

From an industry perspective, this is a better outcome as not a single medical scheme experiences the full-blown reduction in solvency, but the impact is shared among the 10 largest schemes.

Given that the 10 medical schemes are the largest in the industry, these would be the most capable medical schemes to absorb more members and stomach the reduction in solvency - depending on the risk profile of those lives transferred.

This proposal ensures continuity of medical cover for the members of *Health R Us* – while in the absence of such a proposal its members may be left without medical cover, which can be a significant concern for those who depend on medical schemes for their ongoing healthcare needs.

This proposal can help to ensure that the *Health R Us* members have access to a wider range of healthcare services – as Health R Us is a small medical scheme, the range of benefits and access might have been limited relative to the open medical schemes.

Disadvantages

It can reasonably be expected that the solvency margin would reduce for the absorbing medical schemes simply with the addition of new members as this directly increases the gross contributions in the denominator of the solvency calculation.

It can also reasonably be expected that a worse claims experience will follow the members of *Health R Us* (given that these members' health led to the demise of *Health R Us*), which would negatively impact the absorbing medical scheme's solvency margin.

Although the proposal is for the largest 10 open medical schemes to absorb the members of *Health R Us*, the scheme size might not be an attribute indicative of their capability to absorb these members…

…as some open medical schemes, although large in membership size, might have a low solvency ratio and a slight reduction in solvency could be significant in the eyes of the absorbing scheme (and the Council for Medical Schemes, should the solvency level drop below 25%)…

…as membership size differs significantly between the largest and 10th largest medical scheme, making the 10th largest medical scheme not so large in relative terms, reducing the capability of such a medical scheme to absorb an equal split of the *Health R Us* members without a significant impact on the scheme's solvency ratio.

The knock-on effect of reducing solvency ratios of the absorbing medical schemes is a potential change in the contribution setting strategy and the extent to which solvency could be used to fund contribution increases going forward.

This method only specifies a 10th of the *Health R Us* members will be moved to each of the 10 largest open medical schemes, but the method is not clear as to how the members of each benefit option will be mapped to a matching benefit option of one of the open medical scheme – and whether a like-for-like benefit option is available for all of the absorbing medical schemes.

This method does not account for large employer groups that currently belong to *Health R Us*, and whether some employer groups that may represent more than a 10th of the *Health R Us* membership will be split between multiple medical schemes.

This method does not account for the age profile, health profile, and/or claims history of the *Health R Us* members and to which medical scheme they would be moved to, and whether the absorbing scheme is capable to take on such a profile.

The method does not account for how the members would be split amongst the 10 largest open medical schemes and whether each scheme would receive a broadly equivalent risk profile. This would require a stratified random sample, using risk factors agreed by all 10 medical schemes, to apportion the members.

The difference in benefit options available across these medical schemes may indirectly have an effect on the impact of the risk profile allocated to the scheme with those having lower benefit options having a diluted affect.

This method does not account for the distribution of *Health R Us*' accumulated funds among the 10 medical schemes. However, given *Health R Us*' low solvency margin, it would be safe to assume a 10^{th} of the accumulated funds (which would represent an insignificant portion relative to the accumulated funds of each absorbing medical scheme) would be distributed to the absorbing medical schemes along with the membership take on.

The remainder of the open medical schemes that do not have the largest membership sizes are excluded from an opportunity to grow from *Health R Us*' membership, which -in relative terms- reduces their competitive position and future sustainability.

This method does not take into account if each of the 10 largest open medical schemes are willing to participate in this risk-sharing model, and whether they are able to absorb the Health R Us members.

The method does not take into account the brokers of the Health R Us members where groups of members from the same broker may be split amongst multiple schemes making it harder for the broker to provide appropriate advice.

The method does not take into account the family composition of the principal members of the scheme as policies will need to be allocated instead of beneficiaries. Splitting of the membership across the 10 largest schemes would need to be done at the policy level while trying to retain a fair allocation of the risk profile amongst the schemes.

Should any of the 10 largest open medical schemes indicate that they are not willing to participate in this risk-sharing model, how would the equal apportionment proceed?

In addition, how would the equal apportionment proceed if the members do not like the scheme that they are allocated to.

[Total 10, Available 13½]

1(vii) Propose an alternative apportionment method that could overcome (some of) the disadvantages mentioned in part (iv) and discuss the merits thereof. [10]

Candidates are expected to identify a risk-sharing or -splitting model other than an equal apportionment method. The proposed solutions below outline one possible apportionment method, while all reasonable methods will deserve credit, e.g. a size-proportional apportionment method, a solvency-proportional apportionment method, a risk-based apportionment method, apportionment by matching Health R Us benefit options against the most suitable benefit options in the industry, etc.

Considering the expectation for candidates to remain informed on current affairs, it is justifiable to assume that candidates should possess knowledge regarding the industry debates in 2022 surrounding the apportionment methods employed when a medical scheme filed for liquidation.

The chosen risk-sharing model must endeavour to achieve the objective that there are "no winners and losers" in how members of *Health R Us* will be distributed.

However, it is unlikely that the perfect risk-sharing model exists such that there are "no winners and losers", but the Healthcare Actuary should strive to identify the risk-sharing model that achieves this objective the best.

A **size- proportional apportionment method** could be used as a risk-sharing model, which would entail each of the 10 largest open medical schemes absorbing a portion of the *Health R Us* membership…

…where the size of each of the 10 groups represents the open medical scheme's size as a portion of the total membership size of the top 10 largest open medical schemes.

This would imply the largest open medical scheme absorbs the largest portion of *Health R Us*, while the 10^{th} largest open medical scheme will absorb the smallest portion of *Health R Us*.

A proportional distribution principle is expected to have the most negligible impact on the absorbing scheme as this principle implicitly takes into account the capability to absorb.

This apportionment method ensures that the financial burden of the new members is distributed in a way that aligns with the size and capacity of the absorbing scheme.

This can help the absorbing scheme to manage its financial risk and ensure that it remains financially stable…

…in terms of solvency, which is expected to reduce simply with the addition of more members.

…in terms of claims experience, which is expected to worsen (given that these members' health led to the demise of *Health R Us*), which would negatively impact the absorbing medical scheme's solvency margin.

This apportionment method can help to ensure that the quality of care is maintained. This is because the absorbing scheme will have the capacity to handle the additional members and ensure that they receive the appropriate care.

This apportionment method can also help to reduce the administrative burden associated with the transfer of members. This is because the transfer can be managed more efficiently and in a more organized way.

This apportionment method can help to ensure that the financial burden of *Health R Us* is spread among multiple absorbing schemes. This can help to ensure the financial stability of the absorbing schemes and mitigate the impact of the liquidation on the broader medical scheme industry.

However, this apportionment method does not overcome all the disadvantages mentioned in 2(vi) as the scheme size might not be an attribute indicative of their capability to absorb these members…

…as these schemes might have a low solvency ratio, which could be negatively impacted when absorbing the proportional portion of the Health R Us membership.

This method is also not clear as to how the members of each benefit option will be mapped to a matching benefit option of one of the open medical schemes – and whether a like-for-like benefit option is available for all of the absorbing medical schemes.

This method also does not account for large employer groups that currently belong to *Health R Us*, and whether some employer groups that may represent more than a 10^{th} of the *Health R Us* membership will be split between multiple medical schemes.

This method also does not account for the age profile, health profile, and/or claims history of the *Health R Us* members and to which medical scheme they would be moved to, and whether the absorbing scheme is capable to take on such a profile.

This method also does not account for the distribution of *Health R Us*' accumulated funds among the 10 medical schemes. However, given *Health R Us*' low solvency margin, it would be safe to assume a portion of the accumulated funds (which would represent an insignificant portion relative to the accumulated funds of each absorbing medical scheme) would be distributed to the absorbing medical schemes along with the membership take on.

The remainder of the open medical schemes that do not have the largest membership sizes are also excluded from an opportunity to grow from *Health R Us*' membership with this proposed method, which -in relative terms- reduces their competitive position and future sustainability.

This method also does not take into account if each of the 10 largest open medical schemes are willing to participate in this risk-sharing model, and whether they are able to absorb the *Health R Us* members.

Should any of the 10 largest open medical schemes indicate that they are not willing to participate in this risk-sharing model, how would the equal apportionment proceed?

[Total 10, Available 10½]

QUESTION 2

The question covers a broad range of topics related to the South African healthcare industry focusing on healthcare quality, requiring the candidate to demonstrate a comprehensive understanding of these issues. The question also requires the candidate to not only define the topics but also explain why and how they should be measured, as well as how they can impact healthcare costs. This means that the candidate must be able to provide a well-reasoned and evidence-based argument in their response.

This question tests the candidate's ability to analyse and apply knowledge in a complex and dynamic industry. It requires a thorough understanding of the healthcare industry and the factors that influence healthcare costs, one specific aspect being healthcare quality.

This question has an open-ended nature, which may require the candidates to provide a more detailed and specific response compared to a more targeted or structured question. This could potentially make it harder for some candidates to demonstrate their understanding.

As the question does not specify application in public or private sectors, credit is available for suitable explanations applicable to both settings.

Candidates tended to demonstrate limited understanding of healthcare quality and the concepts defined in the question of healthcare fragmentation and coordination. Questions asking for examples were better tackled showing some awareness of health quality.

Candidates struggled to translate the quality considerations into cost implications for medical schemes.

2(i) Define healthcare quality [2]

Healthcare quality is a measure of the value provided by any healthcare resource, as determined by some measurement.

It is an assessment of whether something is good enough and whether it is suitable for its purpose.

Healthcare quality is the degree to which healthcare services for individuals and populations increase the likelihood of desired health outcomes and to ensure that the healthcare services provided are safe, effective, efficient etc.

Healthcare quality is improved when healthcare fragmentation is solved with healthcare coordination.

[Total 2, Available 2]

2(ii) Discuss why each of the above should be measured. [6]

Healthcare quality

Measuring healthcare quality is important, because value is a function of both cost efficiency and quality. While poor quality care may initially result in some cost-savings it will result in additional costs over time due to a worsening disease burden and demand for more healthcare services.

Internationally, healthcare inflation has exceeded general inflation.

In this environment, many funders make purchasing decisions and insurers design benefits to channel patients to cost-efficient providers.

Measuring healthcare quality, as well as publishing the results thereof for transparency, demonstrates a commitment of accountability towards patients and other stakeholders…

…and serves as an independent validation of performance, while stimulating a culture among healthcare practitioners to challenge themselves to do better.

Insightful data as it relates to healthcare quality assists patients to participate in their treatment.

Measurement can be used to identify areas of poor quality so that improvement processes can be put into place or networks, such as DSPs, to be optimised.

Healthcare fragmentation

Healthcare fragmentation contributes to inadequate **healthcare quality**.

It is important to identify and measure sources of healthcare fragmentation as these are inefficient areas of healthcare that can be corrected by medical scheme's benefit design using appropriate incentives and disincentives.

Increased hospitalisations are among the most common consequences of a fragmented care system and primarily affect individuals with multiple long-term conditions.

The ever-rising cost of healthcare worsens inequality by forcing medical scheme members to leave the medical scheme environment and jeopardising the quality of care they may be able to afford.

Healthcare coordination

Healthcare coordination is important as it involves determining:

- where to send the patient next (e.g. sequencing among specialists)
- what information about the patient is necessary to transfer among healthcare entities, and
- how accountability and responsibility is managed among all healthcare professionals (doctors, nurses, social workers, care managers, supporting staff, etc.)

Healthcare coordination addresses potential gaps in meeting patients' interrelated needs such as medical, social, developmental, behavioural, educational, informed support system and financial needs…

…in order to achieve optimal health, wellness, or end of life outcomes, according to patient's preferences.

[Total 6, Available 8]

2(iii) Explain how each of the above can be measured. [10]

Healthcare quality

Numerous health structure, process and outcome measures exist, some of which require risk adjustment for comparative purposes.

Healthcare quality should be measured on an ongoing basis, relative to past, best practice benchmarks and competitors.

The following domains can be used to measure and describe healthcare quality:

- **safe** – avoiding injuries to patients from care that is intended to help them
- **effective** – avoiding overuse, misuse and duplication of care
- **patient-centred** – providing care that is unique to a patient's needs
- **timely** – reducing wait times and harmful delays for patients and providers
- **efficient** – avoiding waste of equipment, supplies, ideas and energy
- **equitable** – providing care that does not vary across intrinsic personal characteristics.

An example of a healthcare quality measurement in the **primary healthcare** environment includes:

- Rate of any harm to a patient after medicine is administered for every 10 000 visits to a doctor or dentist.
- Duplicate pathology tests as requested by different doctors resulting in discomfort for the patient and additional unnecessary costs
- Gaps in medication for ongoing chronic conditions (insulin or oral meds for diabetics)
- Gaps in monitoring of stability of ongoing chronic conditions (e.g. HbA1c for diabetics)
- Adherence to clinical guidelines that are developed from evidence based medicine

- Rates of complications often resulting in the need for hospital admissions and significant surgeries

Examples of healthcare quality measurement in the **emergency services** environment include:

- The median response time from answering a call to arriving at the scene
- Percentage of patients with severe life-threatening physical injuries requiring immediate care transported to accredited Level I or II trauma centres
- Percentage of patients reporting a reduction in significant pain pre-hospital.

Examples of healthcare quality measurements in the **hospital** environment include:

- cardiac catheterisation mortality rate
- pneumonia re-admission rate
- Surgical site infections per 100 major surgeries
- Percentage of new-born babies with a birth weight of 501g to 1 500g admitted to a NICU who develop an infection after three days of life.
- Mortality rate.

Examples of healthcare quality measurements in terms of **patient satisfaction** include:

- The average rating out of 10 for doctors' and/or nurses' displays of kindness and compassion when caring for patients.
- The average rating out of 10 for whether doctors and/or nurses communicated with patients in an understandable way when discussing aspects of the patient's care.
- The average rating out of 10 for whether doctors and/or nurses kept patients informed about their care during their hospital stay.
- The average rating out of 10 for how well patients' pain was managed during their stay.

Healthcare fragmentation

There are several ways to measure healthcare fragmentation, including:

Clinical fragmentation index (CFI): The CFI measures the degree of fragmentation in a patient's medical care by calculating the number of different providers involved in the care of a patient over a certain period of time. The higher the CFI, the greater the fragmentation in care.

Health information exchange (HIE) rates: The extent to which healthcare providers are able to access and exchange information about a patient's health history can be used as a measure of fragmentation. The more barriers there are to accessing and sharing information, the greater the fragmentation.

Patient satisfaction surveys: Patient satisfaction with the coordination and continuity of care can be used as a measure of healthcare fragmentation. Low levels of patient satisfaction with coordination and continuity of care can indicate high levels of fragmentation.

Quality of care measures: The quality of care provided to patients can be used as a measure of healthcare fragmentation. For example, measures of patient outcomes, such as readmission rates or the frequency of adverse events, can be used to assess the impact of fragmentation on the quality of care.

Cost measures: The cost of healthcare can also be used as a measure of fragmentation. For example, the cost of care for a patient with multiple chronic conditions who is seen by several providers can be compared to the cost of care for a patient with similar conditions who receives care from a single provider. Higher costs for the former can indicate higher levels of fragmentation.

These are just a few examples of how healthcare fragmentation can be measured. The specific measures used will depend on the goals and objectives of the evaluation, as well as the resources available for measurement.

Healthcare coordination

Benefit options that incentivise members by channelling them to GP as the gatekeeper of downstream costs, are benefit options with healthcare coordination.

Benefit options with the following design elements have healthcare coordinating elements:

- GP Network
- GP Nomination

- GP referral requirement
- Unlimited GP visits

The claims experience can be compared between benefit options that have healthcare coordinating design elements relative to those benefit options that do not have such design elements.

Metrics of interest include:

- GP visits per life per annum
- Direct costs per life per month (i.e. claims that are a direct result of the consultation to a specific GP)
- Indirect costs per life per month (i.e. claims that are indirectly linked to a consultation to a specific GP, e.g. claims as a result of a referral made by a GP)

The expectation is that all the utilisation and cost metrics should be lower for those benefit options with healthcare coordination.

[Total 10, Available 15]

2(iv) Discuss how each of the above can impact the healthcare cost of a medical scheme. [12]

Healthcare quality

Improved healthcare quality can **reduce** healthcare claims cost for a medical scheme.

The quality of healthcare can have a significant impact on healthcare costs in several ways:

Lower costs associated with preventable conditions: High-quality healthcare that includes preventive care and early intervention can reduce the incidence of preventable conditions, such as chronic diseases, which can lead to lower costs in the long run.

Lower costs associated with hospital readmissions: High-quality care that is well-coordinated and leads to improved patient outcomes can reduce the rate of hospital readmissions, which can result in lower costs for both patients and the medical scheme.

Lower costs associated with medical errors: High-quality healthcare that is based on evidence-based practices and minimises medical errors can reduce the cost associated with medical errors, such as the cost of treating preventable adverse events or medical malpractice lawsuits.

Increased patient satisfaction: High-quality healthcare that results in improved patient outcomes and increased patient satisfaction can lead to reduced healthcare utilisation, as patients are more likely to be satisfied with their care and less likely to seek care elsewhere, which can result in cost savings.

Improved productivity: High-quality healthcare that leads to improved patient outcomes can also result in improved productivity, as patients are able to return to work and engage in daily activities more quickly, which can result in cost savings for both patients and society as a whole.

In short, improving the quality of healthcare can result in cost savings for both patients and the medical scheme, as well as improved patient outcomes and increased patient satisfaction.

By focusing on quality improvement initiatives, it is possible to create a more efficient and effective healthcare system that delivers better value to patients.

Improved health quality can also increase the cost of healthcare claims for a medical scheme.

This impact can be in the short term as a result of more services consumed, for example GP visits, pathology and/or radiology investigations for diagnosis purposes, specialist visits to manage chronic or complex conditions and the onset of treatment for example for oncology patients.

Where costs are aligned with quality outcomes one can expect the costs to reduce in the long term as patients benefit from the higher quality of care.

Healthcare fragmentation

The presence of healthcare fragmentation **increases** healthcare claims cost for a medical scheme.

Healthcare fragmentation can have a significant impact on healthcare costs in several ways:

Duplicative tests and treatments: When different components of the healthcare system operate in isolation, patients may receive multiple tests and treatments for the same condition, leading to higher costs.

Inefficient use of resources: Fragmented care can lead to a lack of coordination among providers, which can result in the inefficient use of resources, such as hospital beds and other medical equipment.

Increased hospital readmissions: Patients who receive fragmented care are more likely to experience poor outcomes, including increased hospital readmissions, which can lead to higher costs.

Higher administrative costs: Healthcare fragmentation can lead to increased administrative costs associated with managing multiple care providers, such as processing claims and maintaining patient records.

Reduced efficiency: Fragmented care can also lead to a reduction in the efficiency of the healthcare system, as patients with complex needs may require more time and resources to manage, leading to higher costs.

Therefore, healthcare fragmentation can result in higher costs for both patients and the medical scheme, as well as reduced quality of care.

Addressing healthcare fragmentation is therefore important for reducing healthcare costs and improving the overall quality of care and outcomes for patients.

Healthcare coordination

Healthcare coordination can **reduce** the impact of **healthcare fragmentation**, reducing healthcare claims cost for a medical scheme.

Healthcare coordination can have a significant impact on healthcare costs by:

Reducing duplicative tests and treatments: By improving coordination among providers, patients are less likely to receive multiple tests and treatments for the same condition, which can lead to cost savings.

Improving efficiency: Coordinated care can lead to a more efficient use of resources, such as hospital beds and other medical equipment, which can reduce healthcare costs.

Lowering hospital readmission rates: Patients who receive coordinated care are less likely to experience poor outcomes, including increased hospital readmissions, which can lead to cost savings.

Decreasing administrative costs: Healthcare coordination can also lead to decreased administrative costs associated with managing multiple care providers, such as processing claims and maintaining patient records, which can result in cost savings.

Improving the efficiency of the healthcare system: Coordinated care can improve the overall efficiency of the healthcare system, as patients with complex needs can be managed more effectively, leading to cost savings.

Therefore, healthcare coordination can result in cost savings for both patients and the medical scheme, as well as improved quality of care and patient outcomes.

By reducing healthcare fragmentation and improving coordination among providers, it is possible to achieve a more efficient and effective medical scheme.

[Total 12, Available 13]

END OF MARKING SCHEDULE