Actuarial Society of South Africa

MARKING SCHEDULE

20 OCTOBER 2020

Subject F201- South African Health and Care Specialist Applications

QUESTION 1

Question 1 was mostly a bookwork question exploring the topic of demarcation in the South African healthcare industry, with a spotlight on the primary care products, the exemption framework and the context within National Health Insurance developments.

Candidates were expected to demonstrate knowledge of the features of 3 specified health insurance products, of the purpose of the demarcation regulations and give detailed insight in the impact of the removal of the exemption for primary care products.

This was a relatively straightforward question for those who were well versed in the demarcation developments and who could relate these to the broader healthcare policy framework developments in South Africa.

The mark allocations in the questions required candidates to show detailed insights into the above issues, which made the questions more challenging. Those able to demonstrate an understanding of the macro and micro elements of these factors as well as the nuances differentiated the better candidates.

(i) **Outline the features of the following three types of health insurance products that can be sold under the Demarcation regulations: [6]**

This question asked candidates to outline the features of three stated health insurance product categories. The signposting was used to prevent candidates from providing information about other products, thus focusing their response on the products of interest for the question. Candidates followed this signposting without giving additional unnecessary information about other products.

This question was generally answered well with candidates demonstrating accurate and sufficient information about each product category.

Medical Expense Shortfall policies (Gap cover plans)

These policies cover the shortfall between medical scheme benefits and the rates that private medical service providers may charge.

These products may also cover payment of scheme shortfalls for medical scheme deductibles, co-payments and specific benefit limits (for example oncology).

Gap cover cannot be sold in terms of the regulations without a medical scheme membership.

Gap cover is aligned to the same underwriting requirements imposed by medical schemes, such as open enrolment and 3-month and 12-month waiting periods for various specified conditions and is no longer allowed to exclude certain age groups or pre-existing medical conditions.

The gap benefit is limited to a maximum of R 150 000 per annum and per insured life, which is applicable to any co-payment and medical expense shortfall.

Non-medical expense cover as a result of hospitalisation policies (Hospital cash plans)

These policies pay out a stated benefit upon hospitalisation, usually per day spent in hospital after a minimum number of days spent in hospital.

The stated benefit is unrelated to the actual cost of any medical service as it is aimed at covering incidental costs, such as loss of income.

Pay-outs are limited to a daily limit of R 3 000 and a maximum of R 20 000 per insured life, per annum / per hospital stay.

Primary healthcare insurance policies

These policies provide limited medical service benefits to employee groups or bargaining councils (or direct to consumer)…

…and includes services such as general practitioner visits, acute and chronic medication, emergency medical care, dentistry and optometry.

These products are subject to strict underwriting and marketing conditions, similar to those considered for benefits proposed under the Low Cost Benefit Option (LCBO) framework.

These primary care policies will not be allowed after the LCBO framework is finalised and these benefits can be provided by medical schemes in accordance with the definition of doing the business of a medical scheme as set out in the Medical Schemes Act.

(ii) **Explain the purpose of the demarcation regulations in the South African healthcare industry. [6]**

This was another bookwork question. Candidates scored reasonably good marks for this question, but lower than part (i), with a handful of candidates showing poor knowledge about what demarcation is intended to achieve.

To ensure that health insurance products do not do the business of a medical scheme and therefore infringe on the Medical Schemes Act.

To ensure that health insurance products adhere to some social solidarity principles and do not undermine these principles entrenched in medical schemes.

To ensure that health insurance products are subject to the same regulatory oversight as medical schemes...

…which ensures better protection for consumers.

To ensure that health insurance products complement medical schemes as opposed to undermining them by allowing anti-selection against medical schemes.

To ensure the public is aware that medical schemes and health insurance products are different and to note these differences in order to assist the public to make appropriate purchasing decisions as consumers of healthcare funding products.

To have an interim arrangement in place while further research will be done in terms of developing a Low-Cost Benefit Option (LCBO) guideline.

To prevent regulatory arbitrage by balancing policy objectives across the medical schemes and the insurance sector.

To provide primary care to the uninsured population in a more regulated environment in the absence of Low Cost Benefit Options.

To provide a means for lower income groups to access private medical cover after the introduction of the Medical Schemes Act in 1998...

…which is an acknowledgement that health insurance products have a role in the marketplace…

…and thereby make healthcare available to more citizens of South Africa.

To refine the Medical Schemes Act by changing the definition of the "business of a medical scheme".

To recognise the need for health insurance products that do not compromise the key principles of social welfare, solidarity and cross-subsidisation found in medical schemes and to phase out those that contravene these principles and undermine medical schemes as a result.

To maintain current levels of access to healthcare services from private healthcare providers for the part of the population that relies on these policies.

1(iii) Outline reasons why the CMS proposed that all primary healthcare insurance products should no longer be available in future. Your answer should consider the current economic context. [10]

This question required candidates to outline reasons why the CMS will not be exempting primary healthcare products in future, as outlined in the Circular published by the CMS. Although there is an ongoing process around defining the future of primary healthcare products and the timing of changes, candidate were expected to be able to deal with the known information about the exemption framework coming to an end at some point in the near future.

This was a high mark question requiring candidates to go into detail in matters affecting primary healthcare products including the low cost benefit design process, NHI developments and aims, the impact of the PMBs in medical schemes and the considerations around the regulatory framework.

The question included signposting to consider the current economic context which many candidates did not address explicitly. This signposting was included to give candidates scope to address the topic more holistically.

Many candidates struggled to consider all the elements and bring them together.

Many candidates also struggled to consider the issues from a regulator's and/or industry perspective, often defaulting to focus on the impact on health insurers.

The Regulator may implement this as an interim measure while Council for Medical Schemes also implemented this as an interim measure while other regulatory reforms (like a Low Cost Benefit Option framework) were in progress.

Upon further investigation into claims made by the insurance industry, the Regulator could believe that the products still allowed by the Demarcation regulations do not align with the social solidarity principles of healthcare, undermine medical schemes and do not treat customers fairly.

The Regulator indicated that many insurers only pay out between 35 per cent and 60 per cent of premiums as healthcare benefits, unlike most medical schemes which pay out more than 85 to 90 per cent of contributions as claims, and view this as unfair to customers.

The Regulator advised that it is neither efficient nor progressive to continue to regulate by exemption.

The Regulator could have the view that the necessary regulatory and strategic shifts must be made to transform the industry and drive national healthcare policy within the bounds of the Medical Schemes Act as a matter of priority and that further exemptions would justify delays.

The Regulator could believe that although the products allowed by the Demarcation regulations were intended for the low-income market as an affordable alternative, that there remains an affordability concern…

…while gap cover is not an alternative and while hospital cash plans and primary care products can be misinterpreted as an alternative to some elements of medical scheme cover…

…they still leave policyholders exposed to risks of large out-of-pocket expenses and financial hardship.

The Regulator could have the view that the needs of the low-income population will be met by creating a more sustainable solution which fits into the new healthcare regime which it believes is National Health Insurance…

…assuming that National Health Insurance is feasible and implementable shortly after 2021.

The Regulator could base this decision on considering the mechanisms that drive the operational effectiveness and sustainability of medical schemes which are largely absent in insurance products. These include risk pooling, mandatory coverage, clinical input in product design and accessibility.

The Regulator could believe that the continuation of the exemption process is seen to have created regulatory arbitrage opportunities which are not in the best interests of members and policyholders of the products under consideration.

The Regulator could believe that continuing to conduct business and offering financial health products outside of the Medical Schemes Act would continue to encourage opportunistic product design that undermines the principles of the medical schemes environment - open enrolment, community rating and prescribed minimum benefits.

The Regulator's view may have cognisance of other ongoing strategic projects to support the provision of universal healthcare coverage, and in light of the following macroeconomic and socioeconomic landscape that the country exists in.

Macroeconomic Indicators

The Council for Medical Schemes could believe that the macroeconomic performance influences the ability of the people of South Africa to access healthcare.

As a result of poor macroeconomic performance, people could be influenced to buy exempted products which could negatively affect the medical scheme risk pool:

Government and Employer Subsidies

The individuals targeted by the low-cost benefit options or low-cost health insurance products are largely exempt from taxes due to their low-income level. Requiring them to pay for healthcare from their incomes defeats the purpose of tax exemptions and their access to state social security programs.

Further subsidies targeted at low-income communities to purchase private sector healthcare finance products, are deemed to be inappropriate.

Use of government and employer financial resources would mainly serve to benefit funders, and insurers and not the beneficiaries.

Since the policy initiatives aimed at consolidating funding mechanisms to be used towards rehabilitating the public healthcare environment and accelerating universal healthcare coverage, government funding is better suited towards these policy initiatives, as opposed to subsidising the private healthcare financing environment.

This will also support the enrolment of South African residents onto the universal health coverage program when it is officially launched.

Financial Sustainability

Continuing to conduct business and offer financial health products outside of the standard regulation would continue to encourage opportunistic product design.

These products are likely to undermine the existing medical scheme risk pools or create fragmentation which may not be seen as equitable.

These products may encourage buy-downs across the industry and threaten the financial sustainability of current options.

There is limited scope to achieve income cross-subsidisation within a risk pool of only low-income members.

In general, voluntary membership creates less scope for income and risk cross-subsidisation, coupled with cherry-picking and upward cost spirals – which will continue in medical schemes after the deadline.

High-risk members of low-income groups are likely to sign up for these products in the absence of mandatory membership leading to likely shortfalls in healthcare coverage.

Administrative Issues

The need for an increase in monitoring the financial and claims performance of these products may result in an increased administrative burden for regulators.

The negotiations between medical schemes and their administrators and private healthcare providers may become more challenging to bring down the cost of healthcare passed onto the members, as the public may view medical schemes as expensive and therefore seek some form of cover with health insurance products.

The administrative burden associated with regulating by exemption across two regulatory bodies detracts from the main issues which must be addressed to develop the products needed in the market, which includes strengthening the regulatory environment to encourage innovation, financial sustainability, accountability and transparency.

1(iv) Describe how stakeholders might react to this proposal and explain the potential impact(s) on the healthcare industry should this proposal be adopted and ultimately implemented. [8]

This was a two-part question with better scoring candidates addressing each aspect sufficiently and separately. The question was reasonably well answered, however too many candidates missed the overall objective of the primary care exemption framework, and again focused narrowly on health insurers rather than considering the healthcare industry more holistically for the second part of the question.

The absence of demarcated products could lead to an increased demand for medical scheme coverage, particularly among those who can afford medical schemes.

There would be a need to reconsider the benefit design of medical schemes where the benefits are impacted by the removal of health insurance products, but this would be limited by the Prescribed Minimum Benefits.

Many employees who have primary healthcare insurance policies are at risk of losing the subsidies employers pay to provide this cover, leading to more people being without access to private healthcare insurance, and unable to afford medical scheme membership.

Without these subsidies, they will be forced to pay for primary healthcare out of pocket or to use overcrowded state facilities as they await NHI.

This is also a contradictory move to the direction which the South African healthcare sector is taking – with the proposed NHI bill and Government's intent to ensure universal health cover for all South Africans which is unlikely to materialise in the form of the NHI by 2021.

Various stakeholders (medical schemes, health insurers, administrators, industry bodies, etc.) will likely engage the Council for Medical Schemes to ensure the consequences of this circularity are thoroughly considered…

…and constructive solutions are found to expand healthcare coverage to more people and contribute to the South African economy and broader society.

Some stakeholders might consider challenging this decision legally – depending on whether or not the Council for Medical Schemes consulted the industry stakeholders on this decision.

This directive overturns the policy trajectory of demarcation previously agreed to by the Ministers of Health and Finance that aimed to safeguard consumers by drawing a clear distinction between medical schemes and health insurance products.

The intention was to migrate health insurance products into closely regulated LCBOs, thus ensuring that consumers retained their cover.

This continued delay to allow schemes to launch affordable LCBO products means the existing barriers for South Africans to access quality private healthcare will remain for the foreseeable future…

…and therefore place greater reliance on an already overburdened public health sector.

Even if insurance products are banned, employers will still be able to fund primary healthcare benefits directly using a network which is allowed under occupational healthcare legislation.

The industry might demand engagement with the Registrar of the Council for Medical Schemes to debate the product ban.

The industry might want to form advisory panels to consider alternative solutions.

The industry could demand that medical schemes design a low-cost benefit option in order to cater for the policyholders who belong to the products based on the Demarcation Exemption Framework…

…and should medical schemes succeed in offering affordable cover, they could experience membership growth…

…along with a strain on the solvency requirement.

Marketing considerations for these new products offered by schemes should be considered to differentiate from PMB level cover.

Employers who relied on products based on the Demarcation Exemption Framework could be placed under pressure to arrange an alternative healthcare offering for their employees…

…and they might have to look towards medical schemes for an affordable offering…

…while facing a significant liability if the employer intends to offer a subsidy toward the medical scheme contribution to enable affordability.

Current health insurance product providers will be most at risk as a going concern business as their core business is proposed to be discontinued…

…unless they can find alternative ways to offer affordable healthcare coverage…

…for example, the employer setting up a self-funded model, but outsourcing the administration to the current health insurance providers.

QUESTION 2

Question 2 considered a restricted medical scheme with an inconsistency between the benefit structure and the published brochure. Candidates were expected to know that the rules of the medical scheme trump the brochure.

The benefit in question tested key principles and applications of capitation and risk benefits as well as the structuring of preventative care and specialist benefits. Principles around policyholder expectations and members best interests in a medical scheme context were also tested.

The preamble for this question was relatively long and detailed, requiring candidates to process technical information about the situation and complication. It also required candidates to think quickly in what might appear to be a complex situation, applying practical knowledge that should be gleaned from the course material.

Candidates that performed well in this question were able to go into detail on each of the sections in the question and demonstrate clear understandings of the situation, complication and how to resolve it, without repeating themselves.

2(i) Compare and contrast medical scheme risk benefits and capitation benefits. [10]

This was a bookwork question on the concepts of medical scheme risk benefits and capitation benefits. The question was specifically worded with compare and contrast, which required candidates to consider the similarities and differences between the two funding methods. While most candidates were familiar with the two concepts, better candidates were able to group the features of these funding methods according to their differences and discuss these.

A few candidates did not understand capitation benefits sufficiently which was a concerning observation.

Medical scheme risk benefits

Medical scheme benefits are based on the medical costs incurred.

The extent of coverage will depend on the definition of benefits in the benefit options.

Medical scheme benefits are determined with reference to a set of tariffs (which can be negotiated between providers and schemes).

Most benefits are funded from the risk pool (as opposed to the medical savings account)…

…and it is the medical scheme's obligation to pay these risk benefits…

…which is funded by (risk) contribution income paid by members and their dependants on a monthly basis.

If the medical scheme's contribution income is insufficient, scheme risk claims can be funded from the scheme's accumulated funds…

…which have been built over a number of years to cater for unexpected adverse events…

…but it is not ideal for a scheme to draw from its accumulated funds as it will reduce the scheme's solvency position…

…and reduce the scheme's ability to cope with future unexpected adverse events.

Scheme risk funding is called as such as the medical scheme assumes all the risk associated with the claims obligation, be it price risk, frequency risk, severity risk, intensity risk, etc.

Capitation benefits

Capitation is the payment of a fixed amount per beneficiary for a particular service, whether the beneficiary uses the service or not.

For example, a medical scheme may contract with a group of primary care providers to provide a range of primary care services to its members. In terms of the contract, the scheme will pay the provider a regular amount of R100, say, each month for each beneficiary allocated to the provider, regardless of whether the beneficiary makes use of the services in that month or not.

This transfers the risk of providing the healthcare service to the provider.

Risks that are transferred away from the medical scheme include:

- price risk (i.e. fee received by the provider does not cover variable costs or makes an inadequate contribution to overhead and profit)
- intensity risk (i.e. more services needed than anticipated)
- severity risk (i.e. cases are more severe than anticipated)
- frequency risk (i.e. more people need treatment than anticipated).

The provider now takes the risk of more people making use of the service than expected…

…and although the capitation provider takes the risk, the risk can partially be passed back to the medical scheme by increasing the capitation fee.

There is an additional possibility of increased referrals being an unintended result, further increasing the cost to the capitation provider, and as a result, to the Scheme if the capitation fee will be increased accordingly.

In a primary care setting, frequency can be affected by an epidemic or a particularly cold winter.

It is less common to find hospital events capitated but it is possible to predict frequencies for certain types of operations…

…for example, the rate of tonsillectomies among children of particular ages.

Capitation is used where risk is taken across a large variety of services and with a large risk pool.

Capitation rates may differ based on the expected risks of the allocated members, for example, older members are expected to have higher risks than younger members and the capitated provider should receive a higher capitation fee for older, and generally sicker, members.

2(ii) Describe, for each of the above options, the actions that would be required to resolve the unintended consequences. [6]

Question 2 (ii) asked about elaborating on the actions required for each proposed resolution. This question expected candidates to demonstrate a practical understanding of what each resolution actually meant for the scheme and how these various courses of action differed. The question was answered reasonably well, with the better performing candidates showing insight into the various risk areas including operational and reputational risk.

The rules of the scheme would always trump the brochure, so even where the brochure is incorrect, the scheme would be obliged to honour claims as per the rules.

Align the brochure to the current funding mechanism

This would entail a withdrawal of the current brochure…

…coupled with a clear communication to members (perhaps via a newsletter) regarding the confusion or brochure error…

…and a re-launch of the revised brochure specifying the mammogram benefit under the specialist benefit.

The Scheme Rules might also need to be amended (depending on the structure)…

…which will require approval from the Council for Medical Schemes.

Call centres will need to be alerted that member complaints might persist regarding this matter, and they might require a script to explain the confusion.

Align the funding mechanism to the current brochure

This would entail carving out the mammogram benefit from the current arrangement…

…which would result in a reduction in the contracted fee…

…which would require negotiation and approval from the provider.

The mammogram benefit then needs to be added to the preventative benefit to be funded from Scheme risk benefits to align with the brochure.

Any mammogram claims that were incurred in January 2020 and funded from the capitated specialist benefit will need to be reversed and paid from the scheme's risk benefits.

And members' specialist benefit limit would need to be restored.

Make no changes to the brochure or the funding mechanism

Keep the funding and brochure as is and communicate to members that this an existing benefit.

Call centres would need to be alerted of the potential incoming complaints, and they would require scripts for a standard response.

The board of trustees can also expect members to complain with the Council for Medical Schemes.

2(iii) Outline the advantages and disadvantages for each of the proposed resolutions identified in (ii). [15]

Question 2 (iii) was a continuation of Question 2 (ii) asking candidates to go into more detail on the advantages and disadvantages of the proposed resolutions. A handful of candidates outlined the advantages and disadvantages of their own resolutions which was problematic as the question was explicit about the possible courses of action to take; limited credit was given where these actions and explanations were appropriate. However, they missed the key focus of the question from an exam technique point of view.

This question was generally poorly answered with many candidates repeating points and not going into sufficient detail to generate a wide enough variety of points for the large mark allocation. Many candidates also repeated content from part (ii).

Candidates who did well in this question were able to go into detail on the advantages and disadvantages for each course of action, resulting in 6 distinct frames of reference. This was basic exam technique being applied.

In terms of content, candidates tended to demonstrate a good understanding of the different benefit structures and the impact on the specialist and preventative care benefits.

Advantages of aligning the brochure to the current funding mechanism

The rules of the scheme would not need to be revised and approved by the CMS.

The revised brochure would be a correct representation of the current funding mechanism.

No significant system or contractual changes required as the funding mechanism is remaining unchanged.

It is a relatively easy change to make to the brochure. It should be quick to redesign and print new brochures.

The expected financial experience of the 2020 benefit year will continue as anticipated by the budget.

The contracted arrangement remains as is and no further negotiations are required.

The scheme remains successful in their quest to raise awareness of their preventative care benefit offering, while continuing with their existing benefit offering.

Disadvantages of aligning the brochure to the current funding mechanism

This resolution is not necessarily fair towards members given the initial advertisement and the expectations the initial brochure has created.

Members might not easily accept this and may continue complaining about the now insufficient specialist benefit, which will put strain on the call centre and affect the scheme brand.

Members are likely to deplete their specialist benefit much faster in the 2020 benefit year compared to the 2019 benefit year…

…especially if these members are older than 40 years of age and they feel that they should get tested.

Members might also submit their complaints to the Council for Medical Schemes, which could lead to regulatory intervention.

There would be a cost involved in redesigning and printing the brochures.

Given that this is a restricted medical scheme, members are not able to leave the scheme in reaction to their disappointment as easily as in the open medical scheme environment. However, members could engage with their employer to express their lack of trust in their medical scheme, and this could threaten the relationship between the employer and the medical scheme.

The contracted provider will most likely identify the increase in specialist benefit utilisation and propose a higher-than-usual capitation fee increase with effect from 1 January 2021.

Advantages of aligning the funding mechanism to the current brochure

Thinking primarily of the member's experience, it seems fair that their specialist benefit should not be depleted by opting for a test advertised as a preventative benefit in the brochure.

Therefore, there is a valid argument to fund the mammogram from the preventative benefit (from Scheme risk) and not from the specialist benefit (from capitation) anymore.

It can reasonably be expected that members would no longer complain about the unfair funding of the mammogram benefit.

Members are less likely to deplete their specialist benefit in the 2020 benefit year (or at least the speed of depletion will be similar to that of the 2019 benefit year).

The Scheme should be able to absorb this cost, if the capitation fee is reduced by the appropriate amount to ensure it is overall a cost-neutral change.

No additional redesigning and printing costs are incurred to change the brochure.

The scheme remains successful in their quest to raise awareness of their preventative care benefit offering.

Disadvantages of aligning the funding mechanism to the current brochure

The change in the funding mechanism will cause some disruption in the administration environment...

…for example, system re-coding needs to take place along with testing to ensure the system works.

…for example, the call centres will need to receive training on the new benefit structure and how pre-authorisation will be treated differently.

…for example, the potential delays in system development and training could exacerbate the need for re-work of claims.

The financial experience will be different than what is allowed for in the budget given the reduction in the capitation fee, and increase in the scheme risk claims. This will necessitate a revised scheme budget.

The scheme will have to negotiate with the capitation provider to carve out the mammogram benefit and reduce the capitation fee with the appropriate amount.

Advantages of making no changes to the brochure or the funding mechanism

No additional redesigning and printing costs are incurred to change the brochure.

No disruptions in the administration environment are incurred (whether call centres or systems) by making funding mechanism changes.

The expected financial experience of the 2020 benefit year will continue as anticipated by the budget.

The capitation arrangement remains as is and no further negotiations are required.

The scheme remains successful in their quest to raise awareness of their preventative care benefit offering, while continuing with their existing benefit offering.

Disadvantages of making no changes to the brochure or the funding mechanism

The brochure would be an incorrect representation of the current funding mechanism, which would be misleading for members as the brochure would not be reflecting the rules accurately for this benefit.

Members are likely to deplete their specialist benefit much faster in the 2020 benefit year compared to the 2019 benefit year as a result of the benefit structure.

Members are likely to continue complaining about the now insufficient specialist benefit and brochure discrepancy, which will put strain on the call centre and scheme brand.

Members might also submit their complaints to the Council for Medical Schemes, which could lead to regulatory intervention.

Given that this is a restricted medical scheme, members are not able to leave the scheme in reaction to their disappointment as easily as in the open medical scheme environment. However, members could engage with their employer to express their lack of trust in their medical scheme, and this could threaten the relationship between the employer and the medical scheme.

The capitation provider will most likely identify the increase in specialist benefit utilisation and propose a higher-than-usual capitation fee increase with effect from 1 January 2021.

2(iv) State, with reasons, which of the proposed resolutions you would recommend. [4]

Part (iv) was a higher order question asking candidates to state which course of action the candidate would recommend, giving reasons for their view. Candidates that recommended option (c) did not get any credit as this course of action defeats the whole purpose of the exercise – these candidates also tended to give poor motivations. Where candidates suggested to follow option (a), credit was only given where there was a strong motivation. Overall, this question was very poorly answered.

The preferred resolution is to align the funding mechanism to the current brochure…

…as this is in the best interest of members…

…which is a prevailing principle of the Medical Schemes Act.

It is also a requirement from the Medical Schemes Act that the medical scheme pays benefits in accordance with its scheme rules.

However, the benefits brochure influence's members expectations for benefits

This also meets the principle of adhering to members' reasonable expectations…

…which is not a regulated principle in the medical schemes industry…

…but an appropriate guiding principle from the insurance industry.

A cost impact analysis will have to be performed to determine whether the expected quantum of the mammogram cost can be absorbed by the Scheme…

…but the same quantum of the mammogram cost would be carved out of the capitation arrangement…

…which would justify a reduction in the capitation fee of this quantum.

The overall impact could therefore be cost-neutral, which makes this resolution an obvious choice from a financial perspective, as well.

QUESTION 3

Question three focused on the concept of healthcare models including alternative reimbursement mechanisms within a specific health policy framework.

The alternate reimbursement model presented in this question is more of an idealistic arrangement in the context of value based care, which was intended to give candidates scope to demonstrate clear understanding of the concept and how it might operate in this environment. The question also tested concepts around national health insurance, provider purchasing arrangements, risk sharing and practical applications of healthcare data.

While the question also focused on predictive models and included elements such as artificial intelligence (AI), candidates were not expected to demonstrate knowledge of AI specifically, and could answer the question without reference to these subject matters. Candidates were expected to have some understanding of broader healthcare challenges and where actuarial modelling could be used to provide a framework and/or insights as a way of better understanding the problem and solution.

Candidates were expected to understand the needs of the healthcare stakeholders working in this system and be able to relate the model to their needs, as one would need to do in a model development process so that the model is practical, useful and relevant for the audience who will need to use it. In this question, it was not a model for a health insurer, thus requiring candidates to demonstrate higher order thinking about its application for medical practitioners (as well as other stakeholders).

3(i) Describe the data that the medical practitioners would need to have access to so that they can operate effectively within this framework, giving reasons for these requirements. [10]

Question 3(i) asked about data requirements for medical practitioners operating within the given framework with a 'describe' verb rather than a 'list' verb. This approach was taken to test candidates ability to think about the data requirements for a different stakeholder, i.e. not the health insurer as would typically be the case, and to go into detail about each element of the data explaining what it is and most importantly why it is needed and what it will be used for. Lists of data fields were generally not given marks unless part of a broader point and motivated accordingly.

Given that the GP is the centre of this reimbursement structure and care co-ordination, it was important for candidates to be able to elaborate on the ways in which data would be used by the GP to be able to operate effectively.

This question was answered relatively well, with marks bunched around the mean indicating that candidates gave it a good attempt, often including sufficient breadth and detail to score good marks.

Medical practitioners require access to data on all costs of healthcare services delivered for the patients they are responsible for, the quality of such care and their performance in the context of the healthcare system.

These data include:

- Medical practitioners own cost and performance data to identify and analyse their own cost of delivering care to their attributed patients
- Total cost and resource data for their attributed patients inclusive of medical practitioners' own care data and care received by other practitioners and facilities
- Cost and resource data for the medical practitioners and healthcare facilities to which they refer patients to assist in identifying better value providers for referral
- Performance on quality measures for medical practitioners and healthcare facilities to which they refer patients to monitor overall quality of care delivered
- Estimated patient out of pocket costs for different clinically appropriate treatment options to have a view of the entire cost of care
- Costs of treatment options and medications at the point of care to support timely decision making
- Outcome information on treatment and medication options to track the quality of care delivered and assist with future treatment decisions

- Scheduling information to easily arrange follow up consultations and care to support continued care where needed

- Information on patients who experience barriers to care related to social needs, for example lack of access to transport impacting ability to access healthcare

- Information about the patient, for example demographics, health conditions, health history, treatments and other health related information

- Benchmarking information to be able to compare or appropriately reference costs and quality data for patients attributed to the medical practitioner

- Information about patient behaviour, for example compliance to medications

- Information about patient satisfaction

The availability of such information on quality, productivity and cost can help medical practitioners improve the way that they practice medicine, but it is likely to take time to have the information available and for medical practitioners to make use of it.

The value of having access to the data that may influence medical practitioners can take time to emerge as the data is being used, while some medical practitioners may never be influenced by the availability of such data and therefore not make use of it.

Certain types of data and the way it is reported can be complicated and hence difficult to use. This includes care episodes, patient attribution, benchmarks and severity adjustments. These may require explanations as to how they were derived and how to utilise appropriately for patient care and overall performance.

Data can also be segregated to support medical practitioners to deliver care by considering how actionable the data is when consulting with their patients:

- Data that can assist with measures that are within their control
- Data that can assist with measures that are relevant to their service line or speciality, particularly among specialists
- Specific action steps to take
- Data at the point of decision making
- Reports accessible through regular practice workflow

3(ii) Discuss the implications and considerations of applying such a model from the point of view of medical practitioners, patients, the State and the private health insurers. [15]

Part (ii) introduced the concept of the healthcare model which was to assist with the identification of at risk patients. The model expands on the doctors' ability to deliver within the healthcare framework because of the reimbursement model in place. Stronger candidates were able to make this link in detail.

The mark allocation split for parts (a) and (b) were given to guide candidates to where more detail was required. Candidates generally tackled this question well, particularly the health insurer implications and considerations.

Predictive models have been developed using artificial intelligence to assist doctors to identify patients who are at risk of developing a chronic condition.

Given that medical practitioners are remunerated when their patients are chronic disease free, or well managed chronic patients not requiring hospital admissions, this model supports work that reduces the risk and / or speed of patients developing a chronic condition…

…as well as of any event that would result in hospitalisation.

Medical practitioners

Doctors should use the model as an input to their practice of medicine, rather than a replacement

Doctors have a direct interest in identifying and managing those patients who may be at risk of developing a chronic condition and assisting to prevent the onset of a chronic condition.

The model can assist doctors to identify those in their population of care where they need to focus their efforts in order to align with the requirements of the reimbursement model.

The model could potentially illustrate which factors are key drivers of the onset of various chronic conditions, therefore giving them information about where to focus the most preventative or curative treatment.

Feedback on the accuracy of the results where the doctor has information not available to the modeller could be given by the doctors to improve the predictive capability and align the results more closely to actual experience.

The information provided by the model would need to be interpreted with caution as it may incorrectly identify patients at risk of developing a chronic condition.

The model may not necessarily correctly identify the correct driving factors of each chronic condition – this would rely on sufficient underlying information about the onset and development of each chronic condition modelled.

The model may not necessarily cater for comorbidities adequately as it may only focus on singular chronic conditions.

The model will require refinement as more data and experience becomes available with the aim to improve the predictive output from the model and hence its accuracy. This is likely to take time and resources, which the doctors would need to wait for and provide input.

The model is unlikely, at least initially, to be able to account for wider factors that may not necessarily be captured in the data thus limiting the output; for example access to transport, diet, exercise, etc that may influence the onset of a chronic condition due to lifestyle factor and/or inability to access appropriate healthcare services timeously.

Over time doctors may become overly reliant on the results of the models and this could have the effect of reducing the level of subjective judgement that they apply to cases.

Doctors may miss out on proactively targeting patients at risk of developing a chronic condition who have not been identified by the model.

The model may be poorly integrated with medical records making it difficult to use in practice and to give feedback on.

The rules used in the model may lack precision and therefore be sub-optimal compared to human diagnosis.

The use of the model could negatively impact the doctor-patient relationship if patients perceive or experience that the use of it is limited or inaccurate for their requirements.

The use of the model may pose medical ethical risks.

The model may not be sensitive to the variations in the risk of the patient it identifies resulting in costly interventions for patients who are actually not high risk.

This could lead to providers trying to avoid high risk patients where their workload would be higher. They could do this by trying to refer away high risk patients and recruit low risk patients who are similar to their existing low risk patients.

Patients

Patients engagement and adherence are crucial aspects of the overall achievement of quality healthcare.

The more patients pro-actively participate in their own well-being and care, the better the outcomes.

With all the predictive capability and personalised care plans, if patients are not making necessary behaviour changes, it is a major barrier for the overall achievement of quality care.

Patients may lose confidence in the system if mistakes are made.

Patients may not understand the information given to them from the models, if provided through a technological interface, compared to directly from a medical practitioner.

State

The State would want to enable access to quality healthcare services for all its citizens.

The model can help to identify which populations are most at risk and thereby support the allocation of resources to those who require the health interventions most, assisting with national resource planning.

The State can take a long term view on the overall health of the nation and therefore support efforts to provide appropriate preventative care to at risk patients where the 'pay off' may be longer term.

Healthcare decisions have been made almost exclusively by humans in the past, and the use of smart machines to make or assist with them raises issues of accountability, transparency, permission and privacy.

The State may be concerned with data privacy and how the data is being used to identify patients.

The State should consider how this framework is regulated…

…and how patients have recourse for complaints or issues.

The State should take an interest in ensuring that this approach supports the overall framework and aligns to the overall intention of promoting access to quality healthcare.

The State can play a role in bringing the relevant stakeholders together to work in collaboration for the longer term development of tools and resources such as this to support delivery of better quality healthcare.

The State can also support alignment with international best practice by bringing in expertise from other countries where needed.

The State will be concerned with the funding for the development of the technology and its ongoing adoption by the healthcare stakeholders.

Private health insurers

Assuming the model is made available to private health insurers, it would need to be specified if the various parties would be able to collate and share data and model outputs, which would depend on the data regulations in the particular country.

Assist with more accurate identification of patients at risk which can then enable better pricing of the risk…

…particularly for the expected incidence and profile of hospitalisation claims which the insurers provide cover for.

Support the creation and improvement of disease management programmes for the identified chronic conditions in support of better managing hospital claims.

Support more nuanced and personalised benefit design of patients in hospital thus making the benefits more attractive and useful for these members in support of aspects such as pricing, member experience and retention.

Better engagement with medical professionals on hospital cases to manage the patient effectively.

More alignment of interests with medical professionals on cases, with greater insight into these cases and transparency on the underlying risk.

Health insurers would be persuaded to compete more on risk identification and their response, together with their overall management of the case, supporting a system that competes on quality of care, rather than only cost.

Although the focus of the models is primarily on patient identification, this approach may lead to efficiencies in the administration of healthcare benefits.

3(iii) Suggest ways in which predictive models can be used to improve the quality of healthcare while managing the cost of delivery. [10]

Part (iii) was an open-ended question asking candidates to give ideas of where predictive models could assist to improve quality of healthcare delivery while managing the cost of delivery.

Marks were given for suitable examples for which candidates covered both points per model type / application.

Candidates suggestions tended to be consistent and reasonably well explained. Better scoring candidates were able identify more applications and motivate each of these in sufficient detail.

More generally however, it was disappointing that candidates suggestions were within a narrow range of application, as the question gave candidates the runway to use their knowledge about the South African healthcare system (and others) to share broader thinking about healthcare challenges and opportunities for modelling to assist stakeholders, within this specific healthcare system context.

Instead of presenting information about past events only, predictive analytics estimates the likelihood of a future outcome based on patterns in the historical data.

Examples of where predictive models can be applied include:

Population segmentation to identify patients at risk of poor health outcomes

Predictive analytics to pro-actively identify patients who are at highest risk of poor health outcomes and will benefit most from intervention.

This allows resources to be allocated to those patients who are likely to experience the most benefit and thus result in future cost savings compared to no intervention or delayed / sub-optimal intervention.

Hospital re-admissions

Identifying patients at risk of a hospital re-admission by tracking and analysing risk factors associated with their hospital admission and factors that could result in a re-admission.

This reduces the downstream costs of hospitalisation by helping to ensure that patients are better managed during their initial hospitalisation and discharge planning rather than having to be re-admitted.

Adverse clinical events

Prediction of adverse clinical events in hospital, for example, infections, that could prolong the length of stay, increase the intensity of treatment required, result in a readmission or increase mortality.

Modelling the spread of epidemics and pandemics and their impact on the healthcare system(s).

Compliance

Identifying factors that could result in patients not being compliant with medications or skipping appointments, thus assisting medical practitioners (and potentially insurers) to assist these patients to improve their behaviour or overcome obstacles to access care.

Higher compliance rates and better appointment attendance reduce the cost of unwanted negative non compliance issues, recurrence of diseases and hospital admissions, as well as of wasted man time.

Staffing

Predictive models can be used to predict patterns in patient utilisation, for example, in hospital by type of ward and case and help to plan staffing accordingly.

This can help to reduce the burden on staff by distributing cases more evenly throughout the day, or week, and assist to ensure the correct mix of staff are available to attend to the cases at those times.

Preventing patient harm

Predictive models can be developed to identify which patients may be more at risk of harm than others based on historical behavioural data, for example, suicide among depressed patients in the case of self-harm, and better diagnostics from radiology imaging and reading in the case of improved diagnosis capability to prevent future harm.

Interventions can be put in place to prevent the incidence of harm and thus result in better outcomes over the longer term. Shorter term input costs may need to be higher in order to address the underlying problems meaningfully.

The cost savings in the long term may manifest through better recovery rates, lower readmission rates and lower mortality rates.

Suitable credit for other examples given where the quality and corresponding cost impact are given