

# Actuarial Society of South Africa

## EXAMINATION

20 October 2020

### Subject F201 – Health and Care

### Fellowship Applications

*Time allowed: Three hours and fifteen minutes*

*Total marks: 100*

#### **INSTRUCTIONS TO THE CANDIDATE**

1. *Ensure that you are logged into your ProctorU account before attempting the examination.*
2. *Questions are only available in this ASSA Examination platform and may not be printed.*
3. *You are required to submit all of your answers in the ASSA Examination platform only. No uploads of answers (handwritten or otherwise) to the ASSA Examination platform will be accepted.*
4. *You may not use any other computer program (e.g. Email, MS Word or Excel), files or open any other browsers during the examination.*
5. *You are strongly encouraged to use the first 15 minutes as reading time only, however, you may commence answering the paper whenever you are ready.*
6. *Mark allocations are shown in brackets.*
7. *Attempt all questions.*
8. *Show calculations where this is appropriate. You may use blank paper to carry out rough work calculations. You may use a calculator from the approved list only.*
9. *You may return to your answers to review and amend during the allotted examination time. Once you are happy with your answers you need to **Finish all and Submit** your work. Once you have submitted you will not be able to make any more changes to your answers.*
10. *It is the candidate's responsibility to ensure that all work is submitted BEFORE the end of the allotted examination time. Take this into account when planning your review and submission. There will be no time announcements.*

**Note: Answers will be saved automatically during the examination. However, the Actuarial Society of South Africa will not be held responsible for loss of data where candidates have not followed instructions as set out above.**

**END OF INSTRUCTIONS**

## QUESTION 1

You are an actuary working in the South African healthcare industry in which the Demarcation regulations have been in effect for a number of years.

- i. Outline the features of the following three types of health insurance products that can be sold under the Demarcation regulations:
  - a. Medical Expense Shortfall policies (Gap cover plans)
  - b. Non-medical expense cover as a result of hospitalisation policies (Hospital cash plans)
  - c. Primary healthcare insurance policies [6]
- ii. Explain the purpose of the Demarcation regulations in the South African healthcare industry. [6]

The Council for Medical Schemes (CMS) has been considering the role of primary healthcare insurance products in the market.

- 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]
- 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]

[Total 30]

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## QUESTION 2

You are a consulting healthcare actuary appointed by a restricted medical scheme in South Africa. The Scheme's benefits are a combination of risk benefits and capitation benefits.

- i. Compare and contrast medical scheme risk benefits and capitation benefits. [10]

During the calendar year of 2019, in a quest to design the benefits for the 2020 benefit year, you noticed an omission in the medical scheme brochure. Although the scheme's 2019 benefit design offers a mammogram every two years should the member be older than 40 and provided a doctor has recommended this screening, this is not stated in the brochure.

As the mammogram is conducted by a radiologist, the cost of the mammogram is currently funded from the specialist benefit which is a capitated benefit and has a Rand amount limit.

The mammogram benefit was not included in the 2019 brochure as part of the preventative care benefit, therefore members and providers were not aware that it was an available benefit.

To raise awareness of the Scheme's preventative care benefits (funded from the scheme's risk benefits) and given that this is an existing benefit, you recommended that the mammogram benefit be included in the benefits brochure as a preventative care benefit. Furthermore, you recommended that funding continue as is and that this will not result in additional claims cost (apart from a slight increase in utilisation) nor an additional contribution increase requirement given that this is an existing benefit.

In January 2020 the members of this medical scheme noticed the mammogram benefit in the brochure, and as a result a large number of members claimed for this screening benefit. However, as the funding mechanism remained unchanged, the cost of the mammogram was funded from the specialist benefit. The members complained and challenged this as they perceived the mammogram as a new preventative care benefit, and therefore it should not deplete their specialist benefit, but it should rather be funded from their specific mammogram benefit as part of the overall preventative care benefit.

The following options have been identified as ways of resolving the matter:

- a. Align the brochure to the current funding mechanism
  - b. Align the funding mechanism to the current brochure
  - c. Make no changes to the brochure or the funding mechanism
- ii. For each of the above options describe the actions that would be required to resolve the unintended consequences. [6]
- iii. Outline the advantages and disadvantages of each of the proposed resolutions identified in (ii). [15]
- iv. State, with reasons, which of the proposed resolutions you would recommend. [4]

[Total 35]

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### QUESTION 3

General practitioners (GPs) and specialists working in the Kingdom of Hogsmeade are paid a monthly amount to keep their patients healthy. If their patient is chronic disease-free, or a well managed chronic patient and not admitted into hospital (other than due to maternity or a trauma event) the doctors receive the payment. When the patient becomes ill, payment stops until the GPs and/or specialists restore their health. The GP acts at the co-ordinator of care for their patients, working with the specialist(s) to achieve these goals.

The Kingdom of Hogsmeade operates a National Health Insurance system with the government acting as single payer and single provider. Accredited medical practitioners and hospitals are contracted by the State through the National Health Insurance System. Citizens can elect to purchase supplementary private health insurance policies for hospitalisation cover only. This cover is only accessible where patients do not follow the referral pathways for the National Health Insurance.

- i. Describe the data that the GPs and specialists would need to have access to so that they can operate effectively within this framework, giving reasons for these requirements. [10]

Hogsmeade has invested in information technology and artificial intelligence so that they can support the delivery of quality care to citizens. The first model being developed aims to identify those patients who are at risk of developing a chronic condition.

- ii. Discuss the implications and considerations of applying such a model from the point of view of the following stakeholders:
- a. medical practitioners – GPs and specialists [7]
  - b. patients, the State and the private health insurers. [8]

This first predictive model has since been adopted by stakeholders as part of a process of continuous improvement involving regular monitoring and updating to fine tune results and usability.

Hogsmeade is now considering developing other predictive models.

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

[Total 35]

[Grand Total 100]

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**END OF EXAMINATION**