# INSTITUTE AND FACULTY OF ACTUARIES

# EXAMINERS' REPORT

April 2018

## Subject SA1 – Health and Care
## Specialist Applications

**Introduction**

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

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

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

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

Luke Hatter
Chair of the Board of Examiners
June 2018

## A. General comments on the *aims of this subject and how it is marked*

1. The aim of the Health and Care Specialist Applications subject is to instil in the successful candidates the ability to apply knowledge of the United Kingdom health and care environment and the principles of actuarial practice to the provision of health and care benefits in the United Kingdom.

2. Candidates who approach the questions, especially the more substantial elements of each question, in a methodical and detailed manner are far more likely to satisfy the examiners and receive a pass in the subject. Candidates will gain few marks if they do not address the question asked but merely write around the topic of the question. The mark allocation for each question part gives an indication of the relative length of answer or number of points to be made to gain full marks.

3. It is often helpful to use subheadings when answering long part questions.

4. Candidates who give well-reasoned points, not in the marking schedule, are awarded marks for doing so.

## B. General comments on *student performance in this diet of the examination*

This paper was more challenging than some SA1 papers in recent diets; this is reflected in the lower pass mark.

Well-prepared candidates scored well across most of the paper. Questions that required an element of analysis or application of knowledge to a particular situation were less well answered than those that just involved bookwork. It was encouraging to see many candidates using headings in their answers to the longer part questions.

The comments that follow the questions concentrate on areas where candidates could have improved their performance.

## C. Pass Mark

The Pass Mark for this exam was 55.

**Solutions**

# Q1

**(i) Advantages**

As insurance products can be very complex, having standard terminology is one way to simplify them. [½]

To make insurance contracts easier for consumers to understand. [½]

This would make it easier to compare the products offered by different insurers, on features and services [½]

and thus easier to sell. [½]

Easier to underwrite/administer/write T&C etc. [½]

If product features and benefits are standardised then consumers can choose their provider based on other important factors such as service standards [½]

and financial strength. [½]

These advantages also apply to insurance brokers. [½]

The policy terms/conditions should be as robust as possible in differentiating between what is, and is not, covered in order to: [½]

- create a clear expectation of the scope and limitations of the cover [½]
- allow valid claims to be paid promptly [½]
- minimise the number of disputed claims to avoid disappointment [½]

These points would help insurers to treat customers fairly and meet their reasonable expectations. [½]

Easier for insurers to assess claims [½]

Furthermore, this would potentially lead to fewer claims of mis-selling. [½]

Fewer disputed claims could reduce the costs of the insurer [½]

Standard policy provisions potentially makes it easier for the insurer to use industry data [½]

From the insurers' perspective, it would make it easier to explain the features of their products and therefore easier to market their products. [½]

Reduces anti-selection if all insurers required to use same definitions [½]

Lower risk of lapse and re-entry [½]

Using standard definitions reduces costs in terms of developing the definitions and keeping updated over time [½]

Standard policy conditions are (hopefully) compliant with local regulations [½]

May give rise to cheaper reinsurance rates [½]

Standardization could lead to a more efficient insurance market. [½]

This would encourage success for the best insurers. [½]

**Disadvantages**

On the other hand, standardization may discourage insurers from designing new product features if they do not fit an existing definition. [½]

It may lead to all products in the market becoming similar. [½]

And may make the market just about price [½]

The insurer has no control over future changes to definitions [½]

If there are inherent problems in the standardised wording the insurer will be taking on these problems. [½]

Standardised policy wording may become out of date [½]

e.g. medical conditions may have moved on and the standardised policy wording has not kept up [½]

And take time to update [½]

It may encourage insurers to provide only the minimum acceptable level of benefits/service that meets the standard definition, with no incentive for them to do more than this [½]

If others can use non-standard definitions that are more generous it could affect the insurer's new business volumes [½]

The definitions may not be appropriate to the target market, for example they could be very restrictive for cervical cancer, if the target market is mainly women this may not appeal. [½]

The work needed to meet the standards would increase costs for the insurer (administration staff, legal and compliance staff) [½]

These resources and costs would be better spent on designing new products or improving services. [½]

[Max 7]

**(ii)** Policyholders form expectations about the benefits to which they are entitled under their health and care insurance policies and the level of service standards that they will receive. [1]

These expectations (referred to historically as "policyholders' reasonable expectations", sometimes shortened to PRE) arise mainly from the sales process, i.e. from what the individual was told to encourage him/her to buy. [½]

Additionally, insurance company advertising may have influenced expectations. [½]

Adverts for products and services should be clear and not misleading [½]

To set appropriate expectations and to later be able to meet them, the insurance industry considers the following actions:

- Requirements on firms relating to the sales process, i.e. if the firm is giving advice, a policy is recommended that is adequate for the customer's needs. [½]
- Ensure products are not overly complex and difficult to understand [½]
- Firm status disclosure, whereby the firm must provide information to its customers on the service that it is providing in an understandable format [½]
- Proposals on fair treatment of consumers [½]
- Including, for example, the FCA's views on whether commission should be disclosed, an unfair inducements rule and cancellation periods. [½]
- Product information measures to ensure that customers get key product information that is clear and easily understood [½]
- At a time when it can influence their decision-making. [½]
- Provide clear statements on: benefits offered on claim and on surrender [½]
- Exclusions/premium reviewability/investment risk and return [½]
  [*Credit was awarded here for up to 2 relevant examples]*
- Have clear underwriting questions [½]
- Provide a post-sale cooling off period [½]

- Ensure insurer reviews and update policy terms to ensure they are kept up to date [½]
- Carry out market research on policyholders and potential policyholders to understand policyholder's expectations more clearly [½]
- Claims handling standards to require firms to deal with claims fairly and promptly. [½]
- Training and competence regime for individuals selling and managing insurance contracts [½]
- Complaint proposals to require firms to meet certain standards when handling complaints [½]
- and to provide customers with access to the Financial Ombudsman Service for regulated activities. [½]

[Max 4]

**(iii) Objectives and purpose**

The Statement of Best Practice for Long Term Care Insurance should aim to help protect consumers [½]

And help them understand [½]

And compare LTCI policies. [½]

It should support a common format for the way LTCI is described to potential buyers at the point of purchase. [½]

And should aim to ensure policyholders are treated fairly [½]

Consider whether one version of the Statement would be sufficient or whether two versions are needed: one for immediate needs annuities and another for pre-funded LTCI. [½]

**Key Features document (like the UK for example)**

This is a legislative requirement for regulated plans that aims to give a "short and punchy synopsis of the product which is easy to read and capable of being understood". [½]

There may be different requirements depending on whether the product is pure protection or has investment elements (e.g. if it is a unit-linked product) [½]

It sets out the required information such as aims and purposes of the policy, [½]

nature of the policyholders' commitment [½]

e.g. premiums term [½]

premium payment frequency [½]

a description of the risk factors and [½]

illustrative projections. [½]

It should include a standard definition of the Long term care insurance. [½]

For example: Long Term Care Insurance can be used to help provide financial security against the risk of needing either home or nursing-home care as an elderly person, i.e. post-retirement. [½]

The contract could pay for all the costs of care throughout the remainder of life (an indemnity contract), or could provide a cash lump sum or annuity to contribute towards the costs of care. [½]

The Key Features Document must provide clear and easy to understand explanations of the product and the cover provided, including: [½]

the benefits payable under the policy, [½]

including exclusions and restrictions [½]

the type of underwriting used [½]

and its implications for cover [½]

immediate needs products are typically priced by individual underwriting, based on the expected mortality experience given the medical condition of the applicant. [½]

the requirement to make full disclosure [½]

the potential for premiums (for the pre-funded version) to be reviewed at any time [½]

the potential for policy terms to be reviewed at any time [½]

arrangements for making claims, e.g. requirements to use approved care providers (i.e. nursing homes) only if the annuity payments will be made directly to the provider [½]

arrangements for complaining about and cancelling the policy [½]

implications for cover when switching from one policy or insurer to another [½]

interaction with state benefits/tax [½]

surrender benefits payable [½]

charges payable by the policyholder. [½]

**Generic Terms and Model Wordings for LTCI**

The Generic Terms and associated descriptions are intended to establish the context in which each term should be used. [½]

Insurers may use them as definitions or as part of a glossary of terms. [½]

The use of Model Wordings, which meet appropriate minimum standards, should be used where these are defined. [½]

While insurers are free to decide on the conditions and exclusions applicable to their products, where a model wording is available, it should be used. [½]

Insurers will be deemed to be using the model wording (for a condition or exclusion) where it is modified to provide at least equivalent cover. [½]

"Model exclusions" are the policy exclusions and limitations where a model wording is available. [½]

These will normally be any existing model exclusions and additionally any exclusions and limitations included in at least 50% of LTCI policies on the market at the time of the review. [½]

The following are examples of generic terms for LTCI that could be given standard definitions in the Statement:

Activities of Daily Living (ADLs)

Claim escalation rates [½]

Immediate needs annuity [½]

Increase options [½]

Permanent [½]

Deferred period [½]

Assessment period [½]

*[Credit was awarded here for up to 6 suitable examples, e.g. long-term, nursing care, home care, assistive devices.]*

**Other Considerations**
The statement might also cover Guidance Notes/regulatory issues for certain policy terms and conditions [½]

And how the product is sold [½]

The following points are key issues that should be addressed in the Guidance Notes for LTCI.

May give details of any prescribed format for information required to be given to policyholders [½]

May list rating factors prohibited to be used in determining premium rates [½]

The policy wording should make it clear whether the benefits (i.e. the annuity payments) will be made to the policyholder or directly to the care provider. [½]

If it is the latter then it must also be made clear that the insurer is not responsible for the quality of care provided. [½]

Furthermore, it must be made clear whether the annuity will cover any increases to the costs of care if the care provider increases its charges or whether the policyholder would have to meet these increases out of his/her other funds at these times. [½]

One method to assess the claims trigger for LTCI is to measure the insured person's dependency using activities of daily living (ADLs) and cognitive impairment. [½]

The number of ADLs failed denotes the level of dependency. [½]

A benchmark set of definitions could be written and applied. [½]

The Statement should aim to make these benchmark definitions apply universally [½]

Or it could say that the insurer's own definitions will be no harder to fail than the benchmark definitions [½]

**The Guidance Notes section of the Statement could include the benchmark list of ADLs, for example**: [½]

- Washing – the ability to wash in the bath or shower (including getting into and out of the bath or shower) or wash satisfactorily by other means. [½]

- Getting dressed and undressed ("dressing") – the ability to put on, take off, secure and unfasten all garments and, if needed, any braces, artificial limbs or other surgical appliances. [½]

- Feeding yourself – the ability to feed yourself when food has been prepared and made available [½]

- Maintaining personal hygiene – the ability to maintain a satisfactory level of personal hygiene by using the toilet or otherwise managing bowel and bladder function. [½]

- Getting between rooms ("mobility") – the ability to get from room to room on a level floor. [½]

- Getting in and out of bed ("transferring") – the ability to get out of bed into an upright chair or wheelchair and back again. [½]

- The mental impairment trigger. [½]

Where appropriate, ensure consistency with existing standards for other insurance products. [½]

Use simple language and avoid technical jargon as far as possible. [½]

Acknowledge areas where judgement or expert advice may be needed because it is not always possible to standardise everything. [½]

[Max 16]

[Total 27]

*Part (i) was usually well answered with many candidates providing a good range of points.*
*Part (ii) was reasonably well answered. The better candidates approached this question by considering the definition of policyholders' reasonable expectations and then thinking of things that would allow the insurer to achieve these aims around benefit expectations and levels of service. Few candidates mentioned carrying out market research to understand policyholder's expectations more clearly, claims handling standards and training for sales staff.*

*Part (iii) was not well answered with candidates failing to provide a wide enough range and number of points to score well.*
*For the Key Features Document, few candidates mentioned setting out the required information such as the aims of the policy, the nature of the policyholder's commitment, premium terms and payment frequency, the provision of illustrative projections, the approach to underwriting, the arrangements for making claims or the implications for policyholders when switching cover.*
*Whilst many candidates provided a good range of examples of generic wording, few candidates discussed the use of model wording or model exclusions or using simple wording and avoiding jargon.*
*Under other considerations many candidates discussed and defined ADLs but few mentioned having a prescribed format for providing information or listing prohibited or permitted rating factors or using simple, jargon free language.*

# Q2

**(i) Underwriting**

For both products the complexity and onerousness of underwriting usually depends on the required benefit amount. [½]

The higher the benefit amount, the more onerous the underwriting for both Term Assurance and Income Protection. [½]

Underwriting is more complex for IP insurance than for most other life assurance products [½]

Due to more complex benefit structures [½]

Even for relatively low benefit amounts [½]

The risks that will pay out a claim for IP are more complex which means there are more factors to consider as part of the underwriting process [½]

Underwriting will need to consider additional risk factors to term assurance [½]

e.g. the occupation and salary will be a consideration for IP but less important for TA [½]

For both benefits, both medical underwriting and financial underwriting may be performed at outset. [½]

Medical underwriting is usually more complex for Income Protection, with significantly more information collected and medical examinations performed [½]

Financial underwriting will also be more complicated for Income Protection [½]

The level will depend on the claims definition used [½]

For Term Assurance, underwriting is performed only at outset [½]

For Income Protection, it is possible that financial underwriting is also performed at claim stage, to ensure that the required replacement ratio is met. [½]

[Max 3]

**(ii)** Claim assessment is much more complex for Income Protection than for Term Assurance [½]

Claim assessment for income protection is ongoing, whereas for Term Assurance it is only performed once. [½]

For Term Assurance, the claim is usually paid on presentation of a death certificate [½]

If the death is thought to be genuine [½]

And death occurred for a reason covered under the policy terms and conditions [½]

Unless there is a terminal illness cover included, where the assessment needs to be made whether the illness is terminal [½]

Once claim is paid, no further assessments are needed. [½]

Initial claim assessment is more complex for IP as the claim definition is much more complex [½]

Further complications are caused by claim definitions variations for IP [½]

Initial assessment needs to assess the ability of someone to perform his job [½]

Or perform the tests if such definition is used. [½]

Need to consider when the illness occurred and any deferred period [½]

If the reason for the claim is covered by the policy terms and conditions [½]

How the benefit amount compares to the salary and any replacement ratio limit (allowing for any State benefits) [½]

It may also involve medical advice / assistance to try and help the claimant recover quicker (rehabilitation) [½]

More claims management for IP insurance due to partial, proportionate or linked claims [½]

Income Protection requires ongoing assessment whether the definition of incapacity is met [½]

And if the payments should continue [½]

[Max 3]

**(iii)** For tax purposes a UK long term insurance company has to treat the following as separate businesses: basic life assurance and general annuity business ("BLAGAB") [½]

and other long-term business ("non-BLAGAB") [½]

**Income Protection**

Income protection will be classified as non-BLAGAB [½]

The insurer has to allocate its trading profit and all component parts of its profit and loss account between the different categories of its business. [½]

Can offset profits against past losses carried forward [½]

Non-BLAGAB is liable to corporation tax on its trading profits, [½]

Trading profit is derived from figures in the statutory accounts, broadly as [½]

$P + I' + A' - E - C - (V1 - V0) + (D1 - D0) - L$ [½]

*Additional half mark for definitions* [½]

which is intended to be a reasonably intuitive measure of "profit" made by the shareholder on this part of the business. [½]

A mutual company would not normally have a taxable non-BLAGAB profit. [½]
[Max 3]

(iv) The advantages and disadvantages of each method will depend on materiality of the new portfolio [1]

and what capital requirements have been used when pricing the policies [½]

An Internal Model is much more complex [½]

It requires a lot of expertise to design and implement [½]

And requires much more work to be performed to be implemented [½]

And can take a long time [½]

And delay the launch of the new IP products [½]

As the insurer already has an IM it may have the expertise in house to build the model [½]

An Internal Model solution will be much more expensive, both initially [½]

And ongoing [½]

An Internal Model would require regulatory approval, whereas using a Standard Formula does not. [½]

The regular may require the insurer to use an IM [½]

Or may add a capital add-on to any IM capital calculation if it does not consider it to be sufficient [½]

The regulatory approval may take time, leading to a delay in launching the product [½]

Even though the company already has an Internal Model for its term assurance business, the addition of new products is likely to require further regulatory approvals [½]

The Standard Formula may not allow for special product features [½]

The Internal Model needs to pass a number of tests [½]

that are all onerous to be met [½]

e.g. the insurer will need to demonstrate the IM is used in decision-making and governance for the use test [½]

There is likely to be more documentation required around an internal model than a standard formula [½]

*[Credit was awarded here for discussion of other tests instead i.e. statistical quality, calibration, P&L, validation with up to 2 half marks in total.]*

The company is unlikely to have its own data to be able to perform calibration of morbidity risk involved in the Income Protection business [½]

It may have to use external data and make further approximations [½]

Or use a Standard Formula to begin with and move to an Internal Model once more data/experience for the new products are available [½]

The company may need to parameterise correlations matrices between risks in extreme scenarios, for which it may not have data [½]

The company has flexibility how to design the Internal Model [½]

So that it can be compatible with its existing Internal Model for Term Assurance [½]

The IM could give lower capital requirements than the standard formula, particularly if the insurer's IP product differs from a 'standard' product [½]

And hence free up capital to spend on other more profitable projects [½]

However, could also lead to higher capital requirements [½]

The insurer may still have to use the Standard Formula to assess certain risks e.g. Operational risk [½]

If using Internal Model for Term Assurance and Standard Formula for IP business, the company would need to assess the method of combining these two results using Partial Internal Model [½]

Various methods are possible [½]

Using an Internal Model solution could lead to a better understanding of the business [½]

If the portfolio is immaterial and negligible compared to the remaining of the portfolio it may be possible to perform further simplifications [½]

[Max 9]

**(v) Standard Formula Calculations for IP**

The SCR is calculated using standard prescribed stress tests or factors, [½]

which are then aggregated using prescribed correlation matrices. [½]

The Basic SCR is calculated by considering different modules of risks: [½]

- market (interest rate, equity, property, credit spread, currency and concentration), [½]
- counterparty default, [½]
- insurance [½]
- and intangible assets. [½]

For the market risk module, each individual stress is performed separately according to detailed rules. The calibration and application of each stress is specified within the standard formula e.g. 25% stress to property values. [½]

The SCR for each individual risk is then determined as the difference between the net asset value (for practical purposes this can be taken as assets less best estimate liabilities) in the unstressed balance sheet and the net asset value in the stressed balance sheet [½]

The individual risk capital amounts are then combined across the risks within the module, using a specified correlation matrix and matrix multiplication [½]

For insurance risk module, the following are applicable:

SLT health: similar to the market risk module, using individual stresses (e.g. an increase of 35% in disability rates for the following year together with a permanent 25% increase thereafter; an immediate and permanent 20% decrease in disability recovery rates) [½]

which are then combined using a correlation matrix. [½]

SLT health: the following submodules are likely to be applicable:

- Morbidity/disability [½]
- mortality [½]
- lapse [½]
- expense [½]
- revision risk [½]

Revision risk is the risk of adverse variation of the amount of a reviewable annuity (e.g. for an IP claim if the benefit can vary), due to changes in the legal environment or state of health of the insured [½]

CAT: the company has to consider the balance sheet impact under standardised scenarios [½]

Having obtained the SCR for each module, a further specified correlation matrix is used to combine them to give the Basic SCR (BSCR). [½]

To obtain the overall SCR, two adjustments are made to the BSCR: an allowance for operational risk [½]

Taken as a percentage of the premiums and technical provisions [½]

And an allowance for the loss absorbing capacity of technical provisions and deferred taxes. [½]

[Max 5]

[Total 23]

*Parts (i) and (ii) were generally very well answered*
*Part (iii) was not well answered despite being bookwork*
*Part (iv) was reasonably answered, although only the better candidates considered that the insurer already had experience of building an Internal Model for its Term Assurance business and hence had some expertise in this area or that a standard formula might be used initially for the IP business, moving to an Internal Model as the insurer gained experience. Few candidates discussed the issues around data availability.*
*Part (v) was very well answered with candidates showing a good depth of knowledge on the subject.*

# Q3

**(i)** Social or cultural issues in the country:

The population take part in activities which lead to hospital admissions for more serious conditions on that day compared to the other 6 days] [½]

Alcohol or drug consumption (or other sensible example) [½]

No time off work allowed for hospital visits so people wait until their day off, by which point the conditions are more serious [½]

Individuals may worsen over the weekend and then seek medical attention once things have significantly worsened, i.e. on a Tuesday [½]

Hospital visits may need a GP referral GPs may be closed at the weekend [½]

Mobile clinics run on Tuesdays (or Mondays) so distant patients only admitted on Tuesday [½]

Certain surgeries with high mortality rates tend to be performed on a Tuesday [½]

May be higher traffic on a Tuesday leading to more road traffic accidents [½]

Operational issues in the health services organisation:

- less medical staff work on that day [½]
  e.g. because of shift patterns or staff training [½]
- less medical equipment works on that day [½]
  e.g. scheduled maintenance/power cuts occur on Tuesdays and alternative power source not available [½]

The single organisation may be reducing resources (medical staff and equipment) on this day of the week to save costs. [½]

This could be if, for example, the organisation is state-run and is funded by tax payers and there is political will to implement a low taxation environment. [½]

No known biological issues would cause this phenomenon. [½]

May be random fluctuation if analysis only performed over a short period [½]
*[Credit was awarded for other plausible suggestions, provided an explanation was given as to why it occurs for admissions on one particular day only.]*

[Max 3]

**(ii)** The plan could be highly profitable. [½]

There could be high demand from brokers and consumers. [½]

It could fit in the insurer's strategy. [½]

It could help to build business relationships with new networks of private hospitals. [½]

Do competitors offer such products [½]

Regulatory approval for the restricted product may be needed [½]

It could attract government incentives for helping to solve a national problem. [½]

If the issue has been highly publicised then this plan meets a specific concern of the population. [½]

The insurer could benefit from publicity on media stories regarding this issue. [½]

Address whether the product should cover all treatments or just accident and emergency treatment. [½]

E.g. No planned procedures on this particular day. [½]

And ensure it is clear what the product covered [½]

Otherwise potential for mis-selling/loss of reputation [½]

Likely to be issues around isolating data for Tuesdays and setting assumptions for just claims on these days [½]

Claims underwriting: how to assess whether the accident genuinely occurred on this day. [½]

or seeking treatment knowing that they could attend the private hospital on this day. [½]

Liaise with the private hospitals to assess on what terms they would agree to cooperate with such a plan. [½]

TCF issues raised if there are lower standards of service for those insured persons who genuinely require it and suffer due to the non-genuine patients [½]

Are the independent hospitals distributed throughout the country or localised in one area [½]

Could it require policyholders to travel large distances to get to independent hospitals – which could be inconvenient and unpopular with policyholders [½]

Which could adversely impact the volumes for the product. [½]

Coherence with existing product range [½]

e.g. hospital cash plans, major medical expenses [½]

Any government incentives to offer this and relieve the burden on the large hospitals [½]

The product could be sold as a loss leader to generate publicity and awareness for the insurer [½]

Cross-selling: once patients have experienced the quality of care at the independent hospitals then they may be attracted to increase their PMI cover to a comprehensive product that covers them on all days of the week. [½]

Group versus individual products: may be better offering to groups only (e.g. via employers) [½]

This could reduce anti-selection. [½]

Also, it may be very attractive to employers since it may reduce time away from work for employees if the covered-day is not a working day. [½]

However, this may in fact be not desirable for the insurer and hospital as it would lead to patient visits on the covered-day which were not necessary on that day. [½]

**Underwriting**

Require proof that treatment was necessary specifically on the high-risk day. [½]

E.g. require insured persons to first seek treatment at the state-run hospitals [½]

**Controlling claims costs**

Would pre-authorisation be required from the insurer before treatment could be received? [½]

This could damage the policy-insurer relationship at the most sensitive time. [½]

Hospitals may increase charges for admissions on Tuesday [½]

The insurer could negotiate with the hospitals over the cost of services billed. [½]

Such negotiation could take place before the event, e.g. in agreeing schedules of customary charges with the hospital chain [½]

or after the treatment has taken place, to clarify the amounts in the account for particular procedures and accommodation. [½]

The insurer may review protocols with the providers and consultants, to ensure that procedures can be deemed appropriate and medically necessary to treat a particular condition. [½]

This review and other case management strategies will help to keep an insurer's claims frequency and average claims cost closer to the amounts estimated in their premium assessment. [½]

Increased workload on Tuesday/Wednesday approving claims - may need to employ extra staff that day [½]

Need to find out what the issue with Tuesday admissions is to avoid anti-selection [1]

Moral hazard: insured persons may fall ill or have an accident on other days but wait until the covered-day to seek treatment so that they can get access to the independent hospitals. [½]

Anti-selection: insured persons who take part in hazardous activities on the day before the covered-day are more likely to buy the PMI policy. [½]

**New business**

May be high demand leading to admin strain [½]

May sell low volumes leading to development costs not being recouped [½]

Can group of independent hospitals cope with potential volumes of cases [½]

If not there are reputational issues for the insurer [½]

Commission payments may be high as likely to be a complex product to sell [½]

Reinsurance may be difficult to obtain [½]

There may be issues where people are admitted just before or just after Tuesday and hence not covered [½]

If the State improved its services to the Tuesday mortality rate reduced, this could affect demand for the product. [½]

Consider other uses of capital [½]

[Max 10]

**(iii)** It would almost certainly lead to higher patient visits on the high risk day. [½]

It would almost certainly lead to higher patient visits on the high risk day. [½]

This could create a strain on the resources of the hospitals and staff. [½]

E.g. will there be sufficient beds [½]

Operating theatres [½]

Catering/cleaning staff [½]

*[Credit was awarded for up to 3 relevant examples]*

They may need to increase their staff numbers on Tuesdays, and Wednesdays if the extra admissions on Tuesdays led to patients staying over more than 1 day. [½]

The higher staffing could be achieved by encouraging overtime from existing staff. [½]

Or by hiring new staff. [½]

There may also be administration issues [½]

This would increase the operational costs for the hospitals. [½]

Staff may not want to work on Tuesdays so it may be necessary to pay them more on this day. [½]

This could lead to lower standards of care for each patient, including those who need it most. [½]

It could lead to very uneven demand and activity over the week which could cause operational issues. [½]

This could damage the reputation of these hospitals [½]

It could lead to health risks or even put lives at risk. [½]

It could reduce the quality of service and treatment for non-emergency patients who had operations or treatments planned on Tuesdays. [½]

The private hospitals would require appropriate compensation for delivering services to the expected higher number of patients. [½]

For example, they could agree to cooperate with the insurer but charge higher prices for their insured persons compared to patients who pay by other means (e.g. some patients may pay out of their own pockets). [½]

This could cover the costs of hiring extra doctors and nurses on this day, or paying for these individuals to work overtime. [½]

There is a risk that claims are declined by the insurer; the hospital would then need to chase patients for the money [½]

It may provide good publicity for the hospital leading to increased usage on a Tuesday even by those without this insurance if they become aware of the issues with State care on this day, and potentially more generally increase use [½]

If the private hospitals are aiming to expand their business then they would welcome a higher volume of patients by taking some share from the State system. [½]

By treating more patients, they could make more profits. [½]

They may attract additional subsidies from the State for reducing the burden on State hospitals. [½]

[Max 7]

[Total 20]

*This question required students to apply their knowledge to a particular, albeit rather unusual, situation and to consider some of the issues involved from the point of view of the insurer and the hospital. Most students provided a good range of relevant points on most of the part questions and hence generally performed well.*

*In part (i) many candidates provided a good range of relevant possible reasons for the increased mortality rate on Tuesdays. Some candidates just talked about the number of increased deaths rather than death rates.*

*Part (ii) was generally well answered although few candidates discussed such issues as the need to find out what the issue with Tuesday admissions was, in order to avoid anti-selection, TCF concerns if there were lower standards of service for those insured who genuinely required healthcare, whether the independent hospitals were distributed throughout the country or localised in a few areas which might require policyholders to travel large distances and be unpopular, coherence with the insurer's product range, possible government incentives to offer this product or the policy being sold as a loss leader to generate publicity for the insurer.*

*Part (iii) was reasonably well answered, with the better candidates approaching the question by discussing the possible strains on resources and how these might be met but also the possible advantages of good publicity and more profitable business. Relatively few candidates considered how hospitals might seek to raise finance to pay*

| |
|---|
| *for the increased resources, the possibility that they might need to chase patients for payment if insurers refused to pay claims or the possibility of attracting subsidies from the State for reducing the burden on state hospitals.* |

# Q4

**(i)** The first consideration will be when Country A is going to become independent. [½]

Will Country A's insurance companies be able to continue to sell policies in the associated countries [½]

And will the associated countries continue to be able to sell polices in Country A. [½]

How much business does the insurer sell in the associated countries [½]

Will there be any changes in the state healthcare available in Country A or the associated countries [½]

The extent of harmonisation to date; is it well progressed or mainly in a state of transition [½]

Will Country A choose to reverse the harmonising measures [½]

And if so which ones [½]

And over what timescales [½]

And will any reversals apply to all of the policy types [½]

Will there be any changes other than to reverse recent harmonisation measures [½]

Which other rules are set by the association and which are Country A specific [½]

Impact on other rules from leaving e.g. data protection, accounting etc. [½]

Are there any changes required to marketing literature, policy conditions, IT, training, distribution of business etc. [½]

If changes are required what are they and how much will the changes cost in terms of time, resource etc. [½]

Will there be any transitional arrangements [½]

Impact on the economic environment / credit rating [½]

Leading to a potential impact on solvency capital [½]

Any currency or asset issues [½]

E.g. will changes be needed to any ALM strategy [½]

Current location of outsourcers [½]

Will new countries join the association and if so can Country A insurance companies sell to them [½]

Will any other association countries become independent and if so can Country A insurance companies sell to them [½]

[Max 4]

**(ii)** Reserves have probably continued to have been calculated dependent on gender, so there are unlikely to be any major changes required until after the changes are implemented. [1]

The uncertainty of experience and pricing over the last 2 years of gender neutral pricing will have led to larger margins in the reserves, [½]

These can be reduced. [½]

Second order effects of holding larger reserves e.g. the need to have held more capital can be reversed and may lead to a freer investment policy as the level of free assets rises. [½]

As the relative cost of policies will now vary by gender, there will be selective lapsing [1]

Changes in lapse rates will alter the expected claim costs, [½]

Possibly by significant amounts for IP and CI policies which will remain on the books at unfavourable terms for many years [½]

Leading to an increase in reserves [½]

May make gradual changes to lapse rates [½]

Expense reserves are likely to need to increase e.g. due to repricing [1]

However, as most of the changes are to return to the way things were, the costs of making some changes e.g. to IT systems should be small [½]

There is sufficient notice to carry out repricing of short term and renewable policies e.g. PMI and Group schemes [1]

However there will be CI and IP policies written on gender neutral terms which may require additional reserves until they go off the books [1]

There may be unusual areas of uncertainty linked to being in the association which may require additional reserves to be held [1]

e.g. economic uncertainty, inflation, investment returns. [½]

Or the discount rate to be reduced for long term business [½]

Alternatively the economic prospects may improve, allowing the discount rate to be increased [1]

And even smaller reserves to be held [½]

Might not affect reserves for group schemes as priced using the gender mix of the group [1]

[Max 5]

(iii) The change will take place in 2 years' time hence the insurer will have to continue to use non gender pricing until then. [½]

It may choose to increase prices towards those applicable to the more risky gender to get the market used to higher prices [½]

Or to choose to stop selling to the more risky gender [½]

Insurance companies may be happy with the gender neutral pricing e.g. they may have found better ways to segment the market so they may choose not to make any changes [½]

The company will take into account the actions of its competitors, particularly in deciding whether to reintroduce gender specific pricing [½]

If the gender neutrality is not reversed for all policy types the insurer may stop selling some types of policy [½]

Or change the policy coverage e.g. of CI to make it a less attractive alternative to IP to the gender whose premiums have risen [½]

Other insurers might do the same which could make the market more competitive [½]

Need to consider whether gender neutrality will be reversed for the other policy types e.g. CI soon [½]

IP could become more attractive as an alternative product for the gender whose premiums have increased thus altering the gender mix for other policy types as well [½]

Once gender specific pricing is reintroduced the insurer will need to have its rates and systems ready to cope with the 2 product variants. [½]

This should be relatively easy as it had to prepare the whole change in reverse just a few years before. [½]

**Rating factors** [½]

The insurer will have been rating by age, health status and various proxies for gender, the insurer will now be able to decide whether they were more effective and cost effective than using gender. [1]

If the non-gender rating has produced better experience it may continue to underwrite in this way [½]

The insurer may wish to retain some of the proxies even after gender is reintroduced as a rating factor [½]

**Data and systems** [½]

The insurer will have to set and test 2 sets of rates again [½]

In the 2 years before the change is permitted the insurer may price more frequently [½]

Or try to trend its rates towards where they will be under gender specific pricing [½]

Gender neutral polices have only been in existence for 2 years, so the insurer will have the system and quote capacity to reintroduce 2 sets of rates [1]

It is likely that the company has still been collecting and storing data relating to gender since the change [½]

And in any event the insurer will have its own gender specific data, certainly from 2 years ago as well as the potential to subdivide its recent experience [1]

The insurer is likely to have continued to analyse experience (in terms of claims / lapses) by gender so these processes should still be in place [½]

The insurer would consider whether the past data that uses gender as a rating factor is still relevant, e.g. there may have been a change in target market (perhaps due to the use of gender neutral rates) [½]

Or the product design or underwriting process may have changed in the last 2 years [½]

Gender is an easy to obtain "new" rating factor unlike trying to introduce something which hasn't been collected in the past e.g. number of tattoos. [½]

**Lapse** [½]

There is a significant risk of selective lapse and re-entry in respect of the gender for whom the premium will fall. [1]

There may be issues with distributors encouraging policyholders to move or lapse and re-enter [½]

Alternatively the gender for whom rates will fall may delay their purchase or hold off on renewing an existing policy until after the rate reduction. [1]

The gender for whom the rate will rise may lapse a policy just prior to the rate increase and take out a new policy to take advantage of at least 1 more year of non-gender specific rates. [1]

A mass lapse could cause capital strain [½]

**Sales/profit** [½]

Premium income and profit could increase if similar numbers of policies are sold with higher margins. [½]

The least risky gender will find premiums attractive and may purchase more than under the non-gender specific pricing [½]

However they may have got used to living without IP and not want to re-enter the market [½]

The more risky gender will now find premiums have increased and may not be prepared to purchase at that price [½]

The company may have to subsidise premiums from free reserves [½]

Or cross subsidise between genders thus keeping relative levels closer to the non-gender specific ones the market has become used to [½]

If the company chooses to subsidise, it is open to the risk that it attracts more of the risky gender, leading to falling numbers of the less risky gender and hence falling overall sales/profit. [½]

Also need to consider the actions of competitors, particularly if association countries are able to continue pricing on non-gender specific rates and selling into Country A [½]

Also consider whether the company will sell its gender specific business to association countries. [½]

If there are less insurance companies selling in Country A it could enable this insurer to gain higher profit margins [½]

**Expenses** [½]

Gender neutral polices have only been in existence for 2 years, so companies are likely to have systems capable of supporting the additional rating factor. [½]

There will be costs as systems including quote engines will need to be modified (returned to the way they were); [½]

The costs will vary depending on how much of the old functionality can be reused. [½]

There will be costs involved in changing terms and conditions and marketing literature [½]

The companies will have its own company specific data, so no need to pay for industry data [½]

And gender specific terms and conditions which will only require a little updating [½]

Underwriting departments will also have at least some staff with experience of the old methods [½]

Overall expenses are likely to be reduced as less underwriting will be required (less need to use individual examinations to identify worse risks) [½]

However, delays in purchasing cover for those whose premiums will fall could lead to operational pressure on admin and underwriting post the change that will need to be factored in to costs [½]

Commission may reduce as there is less need to use target outlets which supply lower risk business [½]

Marketing costs may reduce as selective advertising, e.g. to target lower risk genders, won't be as important. [½]

Renewal expenses may reduce as repricing is likely to be less frequent [½]

How will the costs of the change be allowed for, e.g. per policy expenses or accounted for separately [½]

**Group schemes**

Despite the gender neutrality it is likely that these continued to be priced on actual group experience with gender specific rates being used to calculate the group premium [½]

Hence changes in the gender mix of a group would lead to a different premium. [½]

This will continue, or be reintroduced if it has not being ongoing [½]

Continue to calculate rebates and profit shares [½]

**Other considerations**

As this change will take place in 2 years' time so there is time to ensure short term policies are priced allowing for the change [½]

The insurer may want to 'smooth' premium changes to gradually introduce any changes rather than just 'jump' on the date of the change [½]

Will need to estimate how many policies will be sold before the changes can be made [½]

And whether there is any way the company can start differential pricing before the official change [½]

The insurer may simply sell all policies from now until the change on the rates which apply to the worst of the gender experiences [½]

And accept that the better gender will lapse these policies in 2 years' time and take out new cheaper ones applicable to their gender [½]

Will need to estimate the expected total number of policies sold after the change [½]

Repricing of any options or guarantees [½]

Potential for anti-selection e.g. if purchases can be made with an overseas based provider [1]

And high risks choosing high levels of benefit could generate additional selection against the market [½]

Reinsurance may still be allowed to differentiate so no immediate change [½]

May need to increase reinsurance, at least initially [½]

May get technical assistance from reinsurers [½]

Any changes in profit criteria or required profit margins [½]

E.g. reduced margins for mix of business risk [½]

Would need to consider any changes in the discount rate as a result of leaving the association [½]

And any changes in investment strategy [½]

Changes to capital requirements - may need to source additional capital [½]

Or it could free up capital for other uses [½]

Potential to lobby and have the decision changed [½]

Potential for future changes [½]

e.g. may further relax regulations/allowing insurers to obtain the results of genetic tests [½]

Or introduce different restrictions on rating e.g. outlaw rating by age [½]

Or the ban on gender rating may be reintroduced again [½]

[Max 21]

[Total 30]

*This question also required students to apply their knowledge to a particular situation. The stronger candidates considered the context of the question set out in the introductory paragraphs and approached this question by applying their knowledge to the specific issues involved with reintroducing gender as a rating factor in the near future and the other issues raised by country A leaving the association.*

*Part (i) was generally well answered, with candidates providing a good range of points, with the better candidates discussing such points as whether other regulations might be changed, whether there might be changes to the healthcare system in Country A and the possible effects on outsourcers.*

*Part (ii) was less well answered with few candidates providing a wide range of points. In particular whilst many candidates discussed lapse rates, relatively few candidates mentioned other assumptions that might change or the likely effect on reserves or other areas of uncertainty which might require additional reserves such as economic uncertainty, investment returns etc. Similarly few candidates discussed the effects on reserves for group schemes.*

*Part (iii) was not well answered. Many candidates did not provide a wide enough range of points to score well. Whilst many candidates discussed the effects on lapse rates, reinsurance, capital requirements and new business volumes, fewer candidates discussed other aspects such as the possible effects on expenses, sales and profit or considered whether the insurer might not wish to use gender pricing (as it would not be compulsory) as the insurer may have better ways of segmenting the market using other rating factors. Candidates did not always consider that the insurer was likely to have historical data by gender (although this may need to be adjusted to allow for trends, changes in underwriting etc. or may be less relevant now) and possibly still have systems to include gender as a rating factor without needing to develop totally new systems etc. Few candidates discussed group schemes or that there was potential for other changes to be introduced.*

# END OF EXAMINERS' REPORT