

INSTITUTE AND FACULTY OF ACTUARIES

EXAMINERS' REPORT

April 2022

SA1 - Health and Care Specialist Advanced

Introduction

The Examiners' Report is written by the Chief 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 Specialist Advanced (SA) and Specialist Principles (SP) 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.

Sarah Hutchinson
Chair of the Board of Examiners
July 2022

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

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

Candidates who approach the questions, especially the more substantial elements of each question, in a methodical and detailed manner are far more likely to reach the required standard and receive a pass in the subject. Candidates will gain few marks if they do not address the question asked or tailor their answer to the scenario detailed in the question but merely write around the topic of the question. When undertaking past papers for exam preparation, candidates should be providing answers which use the context 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. The Examiners' Report covers more points than would be expected to get full marks. This is so that alternative approaches to questions by different candidates can be accommodated.

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

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

B. Comments on *candidate performance in this examination.*

Well-prepared candidates scored well across most of the paper. Most of the questions required an element of analysis or application of knowledge to a particular situation. For these questions, candidates did not always provide a sufficiently broad range of points to score well or did not make points that related to the specific scenario set out in the question rather than just generic points to demonstrate that they could apply their knowledge.

It is encouraging to see many candidates using headings in their answers to the longer part questions and setting out their answers in a methodical manner which aids clarity of explanation.

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

C. Pass Mark

The Pass Mark for this exam was 59
66 presented themselves and 23 passed.

Solutions for Subject SA1 - April 2022

Q1

(i)

Anti-selection will be a significant concern	[½]
When considering lapse behaviour, anti-selection is considered in terms of selective lapsing	[½]
Those policyholders less likely to experience, and so claim, for critical illness may lapse	[½]
Leaving a pool of lives who would have worse claims experience than that priced for	[½]
Leading to lower profits	[½]
or increased losses	[½]
Policyholders may lapse early before the H&C insurer has had a chance to recoup the initial costs in setting up the policy (i.e. initial expenses and commission payments)	[½]
If the size of the in force business reduces, the insurer may not be able to cover its fixed costs which will be spread over all its business	[½]
Having a smaller number of policies in force also reduces scope for economies of scale, e.g. spreading the fixed costs of IT systems.	[½]
There may be an increase in admin expenses in processing lapses	[½]
Lapse and re-entry: Some policyholders may lapse to take out cheaper policies which may be less profitable	[½]
If distributors encourage churning, there may be an increase in administrative expenses	[½]
And may also lead to extra commission payments	[½]
However, if the commission structure includes a return of a proportion of the commission, then this impact may be minimised	[½]
If many lapses occur, distributors may lose income. This may put strain on the distributors, causing pressures to increase sales or mis-sell which could cause reputational damage to the insurer	[½]
Large scale lapsing may lead to reputational issues where these cannot be processed in time	[½]
Large scale lapsing could result in increased scrutiny from the regulator	[½]
Overall, the increased lapses may lead to a higher risk of insolvency for the insurer	[½]
With less policies in the book, reinsurance premiums may reduce which would lessen the impact on profit	[½]
However, the reinsurer is likely to consider the selective lapsing so the reinsurance premium could become more expensive per policy	[½]
Increased lapses may mean a profit cannot be made from these policies	[½]
If the insurer needed to increase its volume of business, it may involve diverting capital to marketing spend	[½]
Companies could end up winding up their group policies voluntarily or through bankruptcy	[½]
which depending on the size of the group policy could be significant for the insurer.	[½]
The insurer may need to increase premiums to reflect the poorer lives remaining, this may put pressure on those who retain their policies to also lapse	[½]
This would be a negative downward cycle each time premiums are set	[½]
This would not impact guaranteed premiums to the same extent, so the impact on the insurer will depend how many premiums are reviewable vs guaranteed	[½]
The insurer may have to dis-invest some assets if there is any surrender value on the individual CI business	[½]

The insurer may need to dis-invest assets with the reduced premium income affecting short-term asset availability	[1/2]
These may not be at favourable rates given the economic downturn is likely to affect asset prices, this would impact the insurers profitability further	[1/2]
The insurer may need to re-train staff to work in retention teams, this will involve an expense	[1/2]
Redeployment of staff may have an opportunity cost if taken away from say they sales teams	[1/2]
The insurer will need to monitor the lapse behaviour for risk management purposes more frequently, taken staff time away from other areas like product development	[1/2]
Systems may not be robust to a large number of lapses, such as long call waiting times, causing reputational damage	[1/2]
Administration of policies may be outsourced to a third party and so may require additional fees for additional service levels	[1/2]
If the lapsing behaviour is similar across all competitors, the impact may be similar to other insurers	[1/2]
However, if the lapsing behaviour is worse for this insurer, it will be detrimental to their performance after the recession	[1/2]
Other insurers may be able to withstand a downward pressure on premium better. Perhaps by having a parent company that resides outside of Country A.	[1/2]
	[Marks available 19, maximum 5]

(ii)

On existing policies

Ensure the company has a customer retention strategy in place for existing business.	[1/2]
Train and increase effectiveness of the retention team	[1/2]
Regular monitoring of business mix and experience	[1/2]
Write to all policyholders outlining the benefits their policy provides to the policyholder	[1/2]
Could offer incentives to the most profitable subgroups	[1/2]
Provide more flexible options to younger policyholders	[1/2]
Provide more flexible options based on duration of policy (shorter duration policies cancelling will impact profitability more)	[1/2]
If economic recovery expected to occur shortly may be able to offer reduction in premiums (or delay) for a short period	[1/2]
Approach distributors to minimise pressures to churn business	[1/2]
Could add benefits like child cover, tiered payments, TPD, or terminal illness	[1/2]
Could offer to amend inflationary/increasing benefits for fixed benefits to reduce the premium	[1/2]
In some cases the additional premium paid to date may 'pay-up' the policy in full on a fixed basis	[1/2]
Could reduce the sum assured to reduce the premium	[1/2]
In some cases the additional premium paid to date may 'pay-up' the policy in full on a lower sum assured	[1/2]
Could aim to reduce expenses (e.g. by outsourcing).	[1/2]

On new policies

Improve pricing such that the level of anti-selection is reduced	[1/2]
Alter pricing to allow for increased lapse risk and the associated costs	[1/2]
Consider reviewable premiums	[1/2]

Carry out regular monitoring of business and mix experience.	[½]
Alter commission terms to reduce lapses through churning by distributors.	[½]
Reduce commission to reduce expenses and lower premiums.	[½]
Ensure appropriate sales training with own staff and distributors such that policyholders are happier with the product long term.	[½]
Stop selling to advisors that have unacceptable lapse rates.	[½]
Add in additional benefits that may be cheap to provide but valued by potential customers (e.g. tests, screening).	[½]
Change or reduce the range of illnesses covered, other than those that might be required by regulation, to reduce premiums.	[½]
Consider a marketing campaign to promote advantages of CI cover, particularly if there are little or no state benefits payable.	[½]
Target employers and individuals working in areas less affected by the recession.	[½]
For group cover offer some form of profit sharing.	[½]
Reduce or remove surrender benefits, to minimise incentives for lapsing.	[½]
Price in a payment holiday option in the product design.	[½]
Regularly check competitors' equivalent products to make sure insurer's terms and premiums are not out of line with the market.	[½]

[Max marks for this part 5]

[Marks available 15½, maximum 9]

(iii)

Proposed options

Advantages

Longer term implications of a lapse are not felt	[½]
Retain customer base	[½]
Maintain good public relations	[½]
No need to market to resell policies after the holiday	[½]

Specific to B

premium income to meet expense will be recouped but at a later point	[½]
--	-----

[Max 2 marks]

Disadvantages

General

How to decide when to start reclaiming premiums.	[½]
No premium income to meet the cost of claims, expenses etc. in the short term.	[½]
Will affect the profitability of the policy.	[½]
Insurer may need to disinvest at inconvenient time.	[½]
Policyholder could still surrender at the end of the period.	[½]
There will be a need to administer the options (and possibly benefit levels under option A) which may not be straight forward in existing systems.	[½]

Specific to A

Loss of investment income.	[½]
Insurer may only delay the lapses rather than preventing them.	[½]
Without a penalty to ceasing premiums, more than expected may select the option. to benefit from cover without the cost of the premium.	[½]
E.g. toward the end of term, or those already considering lapsing.	[½]
May work to increase premiums longer term.	[½]

Specific to B

It may be difficult to collect premiums after the period that premiums had ceased	[1/2]
A policyholder who has struggled to pay the premiums may struggle to pay back the owed premiums again at a later date	[1/2]
The insurer may be exposed to reputational damage if it aggressively tries to recover the premiums owed	[1/2]
	<i>[Max 3 marks]</i>

Existing option

Advantages

Administratively clean to operate	[1/2]
No need to retrain staff	[1/2]
Potentially lower admin expenses than proposed options	[1/2]
No need to change IT systems	[1/2]
	<i>[Max 1 mark]</i>

Disadvantages

Will need to undertake marketing to resell policies	[1/2]
Poor public relations if other companies provide alternative options	[1/2]
The business mix remaining may be poorer experience - adverse lapse experience	[1/2]
Reduced data for future pricing exercises	[1/2]
Any surrender benefits will need to be paid	[1/2]
May encourage policy to surrender when surrender could have been prevented if insurer had offered more flexible terms.	[1/2]
	<i>[Max 1 mark]</i>

[Marks available 14½, maximum 5]

(iv)

Insurer's shareholders

Shareholders are the investors in the business interest. They will want the insurer to be profitable	[1/2]
They will want profitability on the existing book	[1/2]
They will want continued profitability in the future with more sales	[1/2]
Some options may affect returns short term but less so longer term	[1/2]
Mass lapse may worsen experience of the portfolio reducing shareholder return	[1/2]
	<i>[Max 1 mark]</i>

Policyholders

Policyholder will want the policy to meet their needs and have flexible terms to deal with changes in life circumstances	[1/2]
The policy is intended to provide access to sums assured during times of need. Therefore, changes to continue benefit at a reduced cost would be preferred.	[1/2]
Will want to be treated fairly.	[1/2]
Are also members of the public.	[1/2]
Seek to satisfy the need to reduce expenditures.	[1/2]
	<i>[Max 1 mark]</i>

Government

Ensures continued cover for policyholders, as these are citizens benefiting from insurance provision.	[1/2]
---	-------

Reduce the number of people uninsured to risk of critical illness.	[½]
There may be increased pressure on state benefits if the public do not take out CI insurance.	[½]
The business pays corporation taxes so the government will want continued profitable operation of businesses.	[½]
The Government will want to avoid insolvency of insurer and loss of cover for Policyholders.	[½]
The state may be liable for payment of benefits if the insurer fails.	[½]
Ensure customers are treated fairly.	[½]
Look to continue the payment of taxes such as Insurance Premium Tax, so want policies in force.	[½]
	[Max 2 marks]

Distributors

Rely on sales of policies to generate income so will want products that are attractive to customers and meet their needs.	[½]
in order to increase sales and hence commission income.	[½]
Will want to ensure continued good practice by insurer for the benefit of clients.	[½]
	[Max 1 mark]

Insurer's employees

If profitability is affected there may be internal redundancies.	[½]
There may be a large amount of work to undertake if a change is made, causing stress or retraining.	[½]
Employees may not want adverse reputational damage for the company.	[½]
Lack of sales may put employees' jobs at risk.	[½]
	[Max 1 mark]
	[Marks available 13, maximum 5]

(v)

The insurer

Return of premiums

Will need to account for adverse selection in redundancy.	[½]
i.e. younger/healthier people more likely to be kept on	[½]
How affected is the company by economic down turn in the short, medium and longer term.	[½]
The opportunity to increase sales in sectors less affected by economic downturn.	[½]
Will need to consider the update to the business mix, e.g. multi-morbidity, ethnicity/race, socioeconomics, gender, age.	[½]
How many months into the annual group policy did the redundancies occur.	[½]
Need to consider the existing contract terms.	[½]
Need to take account of the reinsurers view.	[½]
And any regulatory requirements.	[½]
Treating customers fairly.	[½]
Will need to consider any industry standards on calculation methodology.	[½]
Could consider how its own methodology compares to competitors.	[½]
	[Max 3 marks]

The employer	
Return of premiums	
Is the updated business mix overview at the start vs end of the year a fair reflection of the risk exposure.	[1/2]
If the redundancies occur at the end of the year, the employer may not want to change the method.	[1/2]
If the redundancies occur at the beginning of the year, the employer may want to change the method.	[1/2]
Impact on tax and profits of income through the return of premium.	[1/2]
	[Max 1 mark]
	[Marks available 8, maximum 4]

(vi)	
The insurer	
Negotiating next year's premium.	
The insurer will want to retain profitable business.	[1/2]
Even if the business is less profitable, the insurer may seek to keep the business for diversification benefits or to increase accumulation of data for pricing.	[1/2]
In addition, it may be cheaper to retain existing business than locate new sales.	[1/2]
Need to consider the experience of this employer when negotiating the new premium.	[1/2]
If this book has poor experience, then less room for negotiation on price and benefits.	[1/2]
If this book has good experience, then more room for negotiation on price and benefits	[1/2]
Should they try to keep the business at normal rates or alter.	[1/2]
The willingness of the employer to shop around; some may be more price sensitive than others.	[1/2]
Consider the general direction of competitors pricing for this business.	[1/2]
Which benefits can be adjusted without affecting profitability.	[1/2]
Are these additional benefits perceived as beneficial to the employer and employees.	[1/2]
Alter the method for return of premium to better reflect the risk exposure over the year.	[1/2]
What are the take-up rates of the benefit with this employer and could they be improved to reduce adverse selection.	[1/2]
Increase underwriting beyond 'active in work' terms, if there is considered to be selective redundancies.	[1/2]
	[Max 3 marks]

The employer	
Negotiating next year's premium.	
During an economic recession, the employer will be seeking to minimise costs to improve profitability.	[1/2]
However, they may also be trying to attract good staff but at a lower salary so want to offer more benefits.	[1/2]
This may increase negotiation pressures to find better terms, more than in a usual year.	[1/2]
Do they wish to continue to offer this benefit to employees?	[1/2]
Does the group cover help retain and attract staff as a form of remuneration?	[1/2]
If the premiums become too expensive the employer may lapse the group policy.	[1/2]
Prices for group cover in the market, other insurers may be looking to win business	[1/2]
Future business plans impact on the headcount of the business. This could be discussed in advance to agree better rates if more redundancies are expected in the near term.	[1/2]

The relationship with the insurer and any discounts that could be awarded for loyalty.	[½]
Request a change to the cover provided.	[½]
For example, free-cover limit in negotiations.	[½]
Provide group cover but on stand-alone rather than accelerated terms.	[½]
Provide group cover but on a basic disease list without additional features.	[½]
Remove cover for terminal illness, children's benefits, TPD.	[½]
Increase the waiting period.	[½]
Reduce the notification period.	[½]
Increase employee contribution to the cost of cover.	[½]

[Max 5 marks]

[Marks available 15½, maximum 8]

(vii)	
Claims payments	[½]
Claims expenses	[½]
Salary payments	[½]
Rents	[½]
Commission	[½]
Underwriting costs	[½]
<i>Credit awarded for other relevant examples</i>	

[Marks available 3, maximum 2]

(viii)	
The value of the liabilities will be affected by the discount rate used.	[½]
If a discount rate is derived based on the assets held, the impact will vary depending on the asset mix and the amount of gilts held.	[½]
If a market rate is used, the discount rate will be affected by the value of gilts.	[½]
Increasing gilt prices acts to reduce gilt yields.	[½]
Reduced gilt yields act to reduce the discount rate.	[½]
Reduced discount rates act to increase liabilities.	[½]
If the insurer mismatches its assets and liabilities, it may not be heavily affected by the change in bond yields.	[½]
Group CI is a short-term liability so fluctuating yields will have less impact on the value of group liabilities.	[½]
The liability value of long-term individual CI policies will be increase with decreasing long-term yields.	[½]
The effect on the value of the liabilities will be based on the duration to term of the policy.	[½]
Investment expenses may be linked to value of assets so may increase if holding 'safe-haven'.	[½]
May be less likely to match assets to liabilities if price is too high, so then mismatch liability increases.	[½]

[Marks available 6, maximum 3]

(ix)	
Cashflow = premium income - claim outgo - expense outgo + commission repayment - commission payment	
Premium income may reduce	[½]

Claim outgo - expectation may increase if selective lapse behaviour, less so if lapses minimised	[½]
Expenses - may increase on the administration of the policies	[½]
Commission repayment may come in if there are lapses	[½]
Any changes in investment policy should be considered with the Investment principles in mind	[½]
Nature	
The nature of the benefits has not changed	[½]
There may be a bias in the lapse behaviour	[½]
There are more standalone policy lapses than accelerated	[½]
There may be more fixed benefit policies remaining as the premiums are cheaper	[½]
Term	
Short-term assets may need to de-risk	[½]
Longer duration policies may be less likely to lapse. This would mean they are nearer the end of their term. More need for short-term assets which may be more volatile.	[½]
The longer-duration liabilities are more likely to cancel (new policies). This reduces the need for longer term assets.	[½]
Currency	
If only domestic investments are affected could diversify into assets in other countries	[½]
Liquidity	
Short term liquidity may be key without premium income.	[½]
The insurer may be forced to sell at inopportune time.	[½]
Review any triggers for selling in the policy e.g. down grading of bonds.	[½]
The above nature, term and currency considerations will need to be balanced with a desire to maximise the overall return on the assets.	[½]
This balance will depend, among other things, on the extent of the company's free assets and the company's appetite for risk.	[½]
The extent of the free assets may have changed, if the value of the liabilities has changed.	[½]
The company's appetite for risk may have changed during an increasingly volatile market.	[½]
Matching	
With a large number of policies cancelling, it may affect the duration of the liabilities and alter the duration of the matching assets.	[½]
If investing overseas to diversify away from Country A, this will have implications on the currency match.	[½]
Qualifying assets	
If there is a certain type of asset that qualifies under reserves, reserves are increasing but 'safe-haven' assets are in short supply, the qualifying assets may need to be reassessed	[½]
This may not be possible if set by regulation.	[½]
Free assets and appetite for risk	
There may be reduced appetite for risk in these uncertain times, meaning that the investment policy may become more risk averse.	[½]

If the reserves have increased, the level of free assets will have reduced. [½]
This will work to increase matching, away from increasing returns. [½]
[Marks available 13½, maximum 7]
[Total 48]

Most candidates scored very well on part (i) providing a wide range of possible adverse effects

Part (ii) was reasonably answered although not all candidates differentiated between actions suitable for existing policies and those suitable for new policies.

Part (iii) was generally well answered although only well prepared candidates compared the proposed options against the current option to lapse policies and stated which options the advantages or disadvantages they discussed were applicable to.

Part (iv) was well answered. Note that candidates were required to provide answers for at least 4 of the stakeholders listed to score full marks.

In part (v) whilst most candidates mentioned the timing of the redundancies as relevant to the insurer's considerations only well prepared candidates mentioned the terms of the contract, taking account of any reinsurers' views, possible changes in business mix, treating customers fairly or the existence of any industry standards on the calculation methodology.

For part (vi) only well prepared candidates mentioned that the insurer may wish to retain the business for various reasons, even if not profitable or that it may be cheaper to retain existing business than locating new business. Whilst many candidates mentioned considering the experience of the employer, they did not say how this might impact on their approach to negotiating next year's premium or altering the rates offered. Only well prepared candidates discussed that the employer might seek to reduce eth cover provided to reduce the premium.

In Part (vii) credit was given for other relevant examples not given in the marking schedule.

On part (viii) most candidates discussed that if a market rate was used the discount rate would be affected by the value of gilts: increased gilt prices would lead to lower yields and discount rates, increasing liabilities. However, only the better prepared candidates discussed the term of the group and individual CI business or discussed mismatching.

In part (ix) candidates were required to apply the general principles of investment considering the nature, term and currency of the liabilities and extent of free assets in maximising the overall return on the assets held to the scenario described in the question and the potential effect of lapses on cashflows and hence investments. Whilst candidates often mentioned the amount of free assets and the company's appetite for risk only the better prepared candidates discussed liquidity and mismatching considerations.

Q2

(i)
The mix of business may differ to the expected mix [1/2]

For example:

Older lives [1/2]

Occupation category [1/2]

Selling through new distributors with a different mix of lives [1/2]

The group - individual split may differ [1/2]

Credit awarded for up to 4 relevant examples of possible changes in business mix

This may be because new business accepted during the year differed compared to that expected [1/2]

Or because lapse / non-renewal of business was higher than expected for certain categories of policyholders [1/2]

Underwriting levels may have been adjusted during the year leading to higher (and earlier) claims compared to expected [1/2]

Medical inflation may have been higher than expected [1/2]

Higher increases in medical salaries than expected [1/2]

There may have been changes in treatment protocols [1/2]

Or introduction of new procedures [1/2]

Leading to more expensive treatment being recommended [1/2]

Or more frequent treatments [1/2]

There may have been a small number of large claims [1/2]

For example, expensive cancer treatment or medical evacuation which may have an outsized impact on overall experience [1/2]

Claims management processes may be too lax [1/2]

There may have been an unexpected increase in incidence, for example, a new disease [1/2]

Or a pandemic or catastrophe [1/2]

An aggregation of claims, e.g. if heavily exposed to a particular location in country B or a company through group cover [1/2]

If there is a state healthcare system in Country B, this could have changed, for example, by increasing waiting times or reducing the quality of care [1/2]

This increase in demand for private healthcare could also have led providers to increase their prices [1/2]

Competition amongst providers may have decreased (supply down) leading to providers being able to push prices up [1/2]

The insurer may have had an agreement with a hospital on preferential terms that has come to an end and been renegotiated at higher rates than expected [1/2]

Random fluctuation [1/2]

Errors in the data might led to an incorrect assumption. [1/2]

Policy wording may have been too loose leading to unexpected claims. [1/2]

Adverse legal / regulatory decision may have led to unexpected claims [1/2]

[Marks available 14, maximum 8]

(ii)
Include margin in pricing for anti-selection [1/2]

Or take actions aimed at reducing claim incidence [1/2]

Or reducing the cost per claim [1/2]

Could improve claim management processes, e.g. ensuring general practitioner referrals are in place [1/2]

The insurer could conduct a review of benefit utilisation	[1/2]
And adjust the product design	[1/2]
For example: may need to limit number of physiotherapy visits	[1/2]
Or introduce higher deductibles	[1/2]
Or co-payments;	[1/2]
In the extreme, may remove benefits	[1/2]
The insurer could diversify the new business mix, e.g. by age, gender, location, distribution channel, individual/group etc	[1/2]
And target healthier groups	[1/2]
And introduce more stringent underwriting criteria	[1/2]
The insurer could incentivise policyholders to improve health	[1/2]
For example, through the provision of wearable devices which track exercise	[1/2]
The insurer could adopt a managed care approach for higher risk or chronically ill patients in order to reduce the overall cost of claim	[1/2]
The insurer could negotiate a fixed fee schedule with providers to limit experience variance and reduce inflation risk	[1/2]
Depending on the size and market share of Insurer X, it may have the power to determine market prices	[1/2]
Introducing a waiting list plan to reduce claims where State services may be able to be used.	[1/2]
Insurer X could review its policy wording regarding claims processes	[1/2]
And benefit definitions	[1/2]
To ensure these are in line with the market	[1/2]
And limit anti-selection	[1/2]
Ensure policy wording is suitably tight to avoid unexpected claims	[1/2]
Ensure all data is correct by carrying out data checks	[1/2]
Introduce reinsurance, if affordable	[1/2]

[Marks available 13, maximum 8]

(iii)

In order to be considering this, Hospital A must believe that the income will be sufficient to cover the expected claims from Company X.	[1/2]
Hospital A may face lower utilisation rates if insurer X directs policyholders away from hospital settings and towards clinics	[1]
Other insurers may follow insurer X's example	[1/2]
Which would compound the issue of lower utilisation	[1/2]
Hospital A may prefer a stable income with limited volatility	[1/2]
And may be able to assist with data for pricing the arrangement	[1/2]
This may give Hospital A a competitive advantage over other hospital groups as it will mean that it will service insurer X's policyholders	[1/2]
And the partnership may differentiate it in the market	[1/2]
It may already have the systems in place to service a capitation model	[1/2]
If it offers this to other insurers	[1/2]
May improve cashflow	[1/2]
Easier to collect payment for service	[1/2]
Stable payment may make it easier to invest in improving facilities, planning staffing or other reasonable point.	[1/2]

[Marks available 7½, maximum 4]

(iv)

Main Risks: Fee for service:

Unknown utilisation means that income levels are uncertain	[1/2]
If utilisation falls, fewer patients would reduce the income for Hospital A	[1/2]
There will potentially be arbitrage between hospital groups meaning that they may predominantly perform procedures where they are the most competitive	[1/2]
They need to allow for expected inflation of costs correctly when setting fee levels	[1/2]
Depending on the payment terms negotiated, there may be delays between provision of service and the fee being paid leading to cashflow issues.	[1/2]

Main Risks: Capitation

Utilisation may exceed expectations and Hospital A will be assuming that risk	[1/2]
So total income may be insufficient to cover the actual costs of treatment	[1/2]
May need to invest in additional IT systems to monitor usage and ensure correct data transfer between insurer and provider	[1/2]
Company X may write higher risk business as it no longer accepts utilisation risk	[1/2]
They need to allow for expected inflation of costs correctly when agreeing capitation fees	[1/2]
There may be healthcare regulatory risks if this is a new/untested model	[1/2]
May not be able to meet demand	[1/2]
The hospital will now also have investment risk as it will receive the capitation fee up front.	[1/2]

[Marks available 6½, maximum 3]

(v)

Mitigating Risks: Fee for service

Ensure that pricing means that profit increases as utilisation increases	[1/2]
Consider capitation arrangements	[1/2]
Regularly conduct market comparisons	[1/2]
Regularly review pricing	[1/2]
Hospital A should try and maintain close links with several insurers to try and ensure it meets the required utilisation rates	[1/2]
This could include negotiating preferred provider deals with several insurers to try and improve its utilisation rates.	[1/2]

Mitigate Risks: Capitation

Include provisions in the agreement to allow for changes in business mix	[1/2]
Carve out high cost treatment	[1/2]
Or new protocols where there may be a lack of data for pricing	[1/2]
Ensure that the capitation basis is reviewed regularly	[1/2]
And the contract allows for regular rate updates	[1/2]
Include utilisation provisions in the contract - effectively an upper limit on service	[1/2]
Investment risk could be reduced through monthly fees instead of annual fees.	[1/2]

[Marks available 6½, maximum 3]

(vi)

Hospital A may suffer from reputation issues which could reflect poorly on Company X	[1/2]
Other hospitals may have better equipment for certain procedures	[1/2]
Policyholders may want to have the choice of which hospital to use	[1/2]
Insurer X may receive poor quality data from Hospital A	[1/2]

This could negatively impact the ability to design and price products in future	[½]
Regulator may be opposed to the arrangement or view it as uncompetitive	[½]
There is a counterparty risk	[½]
Hospital A can't offer a particular required procedure, either because high demand has used its capacity, or because it doesn't have the relevant specialist required for a procedure	[½]
Insurer would still have to meet the claims	[½]
The reputational issues could lead to reduced new business volumes and/or lower renewals	[½]
The capitation arrangement may pass profit to Hospital A, leading to unhappy shareholders.	[½]
The model may be more expensive than a fee for service model	[½]

[Marks available 6, maximum 3]

(vii)

Company X should complete a due diligence of Hospital A and conduct regular reviews	[½]
May pay capitation fees monthly rather than yearly in advance to reduce counterparty risk	[½]
Or have 'get out' clauses in the contract	[½]
Conduct customer satisfaction surveys	[½]
Carve out specific treatment if other hospitals provide superior service	[½]
Allow use of other hospital groups subject to additional co-payments or higher deductibles	[½]
Agree reporting requirements upfront	[½]
Lobby government to support the partnership	[½]
May decide not to enter into a capitation arrangement	[½]

[Marks available 4½, maximum 3]

[Total 32]

In Part (vii) whilst performing due diligence and paying capitation fees monthly rather than yearly were often mentioned, only better prepared candidates discussed carving out specific treatments if other hospitals provided a better service or having get out clauses in the contract.

Q3

(i)

Pricing

For individual business

Ability to provide an individual rate depending on expected healthy life.	[½]
Potential to review premium rates during the course of the policy if customers upload a new photo at renewal.	[½]
May reduce margins for uncertainty if, for example, factors like smoker status can be known with a high degree of accuracy.	[½]
or may require increased margins if there is uncertainty around the accuracy of the tool	[½]
Low accuracy may lead to mis-pricing and worse than expected claims experience in future	[½]
May appeal to a younger audience	[½]

Which will impact business mix assumptions.	[½]
May impact expense assumptions	[½]
There may be costs savings if underwriting costs are reduced	[½]
But there will be additional development and system related costs to consider	[½]
Need to consider the ability to use the information captured by tool (e.g. gender)	[½]
Will need robust evaluation of the tool to ensure there is no bias	[½]
For group business	
Are rating factors currently used for group pricing? If not, the tool may not add value or the pricing methodology may need to change	[½]
Will employers be capable of managing differentiated pricing?	[½]
Accidents will need to be rated separately.	[½]
For both groups	
May have little impact if the personal characteristics are not used as rating factors.	[½]
Occupation, industry, or other key rating factors may not be captured by the tool, limiting its value.	[½]
Policy application and underwriting	
For individual business	
May reduce the need for underwriting and	[½]
Speed up the application/acceptance process	[½]
May reduce incidence of fraud by the applicant	[½]
Conversely, may enable greater misrepresentation/fraud	[½]
Will need to consider whether this impacts limits for medical exams / blood tests	[½]
The insurer may need a parallel manual process to cater for scenarios where customers cannot use the tool	[½]
Or where customers are unwilling to use the tool,	[½]
For example, due to the security of their data.	[½]
Past data is now less relevant and there may be a lack of data on how the photo features tie up to claims	[½]
Leading to increased margins, at least until experience is built up	[½]
For group business	
May not have a large impact on group business as few individuals would typically be underwritten.	[½]
And financial underwriting will need to be done separately.	[½]
But could be done remotely and so may be introduced for group.	[½]
For both groups:	
Does the applicant population have a smartphone?	[½]

[Marks available 15½, maximum 8]

(ii)

There may be practical technical challenges (camera, lighting, app working) which may mean the photo is not an accurate depiction.	[½]
There is a risk the photo submitted may have been digitally altered	[½]
Or may not be of the applicant.	[½]
Or be an old photo.	[½]
Leading to increased incidences of fraud /misrepresentation.	[½]

The insurer will also need to consider how to handle claims where the initial information was inaccurate.	[½]
Inaccurate data may lead to mispricing risk.	[½]
The underwriting company is not exposed to risk if actual experience differs to expectations.	[½]
Customers may be unwilling to provide data to the insurer	[½]
The insurer will need to ensure that the customer has consented to use of the data	[½]
And will need to consider security of the data	[½]
There is a risk that the algorithm displays bias	[½]
This may have serious reputational risk	[½]
Including, for example bad press, unhappy customers	[½]
Or may lead to regulatory risk including fines	[½]
Particularly if protected characteristics such as gender are impacted	[½]
Or possible future legislative or regulatory changes restricting use of the tool	[½]
The underwriting limits for medical tests and additional information may need to be changed	[½]
If there is uncertainty regarding the accuracy of data then these limits may need to be reduced which could add to the cost of accepting a policy	[½]
Any bias may allow anti-selection	[½]
The insurer will also need to consider initial and future cost of the service	[½]
There is a business mix risk	[½]
For example, healthy lives may opt for to follow a process with a photo, leaving unhealthy lives to follow the standard process if this is continued	[½]
There may be a risk of lapse and re-entry as healthy lives take out new policies	[½]
Leaving poorer lives in the risk pool	[½]
New business volumes may reduce if customers dislike this approach	[½]
Leaving fewer policies to spread fixed costs over	[½]
Conversely, new business volumes may increase if customers like the approach	[½]
Potentially leading to new business strain	[½]
The reinsurer may not accept the tool or may require higher margins for business accepted using the too	[½]
The underwriting company may go out of business leading to the loss of investment costs.	[½]

[Marks available 15½, maximum 8]

(iii)

Reserving

Could assist with setting IP case reserves	[1]
Data at an individual level could assist with more accurate reserving	[1]
Could be used within a rewards programme during the life of the policy motivating policyholders to follow a healthier lifestyle.	[1]

Claims underwriting

Could provide information for claims validation.	[1]
--	-----

Marketing

The proposition may be unique in the market providing a competitive advantage.	[1]
--	-----

Identification

The proposition may allow the insurer to identify the customer during the life of the policy for administration services. [1]

Credit awarded for other relevant examples

[Marks available 6, maximum 4]

[Total 20]

In part (i) most candidates mentioned the possible effects on expenses and margins in pricing, the possible speeding up the underwriting process, the potential effects on the incidence of fraud and whether the target market would have a smartphone. Only better prepared candidates discussed how the tool might impact business mix or the pricing and underwriting of group business. Similarly, better prepared candidates mentioned that the tool would need robust evaluation to ensure its accuracy or that a parallel system might be needed if customer were unable or unwilling to use the tool.

In part (ii) candidates generally provided a wide enough range of risks to score well. Only well prepared candidates discussed the costs of the service or the possible effects on underwriting limits for medical tests.

Candidates generally scored well on part (iii). Credit was given for any suitable examples provided.

[Paper Total 100]

END OF EXAMINERS' REPORT