EXAMINERS' REPORT

June 2017 examinations

Subject F101 — Health & Care
Fellowship Principles

INTRODUCTION

The attached report has been prepared by the subject's Principal Examiner. General comments are provided on the performance of candidates on each question. The solutions provided are an indication of the points sought by the examiners, and should not be taken as model solutions

QUESTION 1

Part (i) was bookwork and well-answered by most.

In part (ii) weaker candidates failed to grasp what was being asked and offered suggestions such as training more doctors or building more facilities (the opposite of what is being asked). Another issue that surfaced is that candidates often didn't substantiate their answers fully. Overall, the performance on the second part of question was not as good as expected.

i.

Bookwork

- protecting the nation's health
- subsidizing the poor
- balancing the budget
- following social culture or political promises

ii.

- Reduce the level of benefits offered by the state facilities. This transfers more burden to the citizen or private sector.
- Introduce means testing for eligibility for state healthcare.
- Reduce the minimum care package offered by private healthcare. This results in private healthcare being affordable for more citizens and alleviating the burden on the state.
- Implement mandatory health insurance membership for all citizens earning above a certain income threshold, this will shift the burden of care to the citizen and the private sector and away from the state.
- The state can increase taxes to raise more funds for state healthcare provision. This can be done via an earmarked tax or via the general tax structure of the country. The former will ensure that funds are directed to the healthcare system.
- The state can implement co-payments and share costs with citizens to an extent. This reduces the immediate cost of treatment given that the patient pays for a portion of the treatment costs.
- Also will deter non-emergency cases from seeking treatment (which may worsen long-term costs).
- The state can provide subsidies for private health insurance companies to increase competition in the PMI market. This can be done by way of preferential treatment tariff at state facilities or direct subsidies to the companies.
- Develop more effective healthcare delivery in the public sector.
  For example, send out community healthcare workers during the winter months to provide medicines to young and elderly in the community.
- Encourage private investment in low-cost care delivery models.
  For example, the state can reduce the number of facilities available to citizens, by selling the facilities to private healthcare providers. This reduces the access to care and thus increases waiting times, indirectly shifting more patients to the private sector.

QUESTION 2

Many candidates addressed only claim investigations in part (i) and described how this would be done rather than what investigations are appropriate. Under parts (ii) and (iii) candidates struggled to differentiate risk management and benefit adjustment points. While some credit was given for points made in either part, no additional credit was awarded for duplication. Under part (iii) it was important to note the implications on the value for policyholders.

i.

Investigations need to include:

- membership – has there been a change in the demographics and volume of members?
- Marketing and communication – has there been a change in the way in which benefits are communicated to members.
- Risk management – has there been a change in the way in which benefits are managed e.g. Limits on out of hospital benefits and pre-authorisation.
- Claims experience
    - Collect data over a period of at least 2 years
    - Collect data on the physiotherapy costs on Plan A and investigate changes in proportion of beneficiaries claiming (frequency) and amount per claim.
    - Collect data on the frequency and cost per claim by claim category on Plan C.
    - Consider in and out of hospital separately
    - Are there specific providers with high claims
    - Is there evidence of fraud?

ii.

Risk management measures:

- Pre-authorisation
    - Could prevent unnecessary admissions on Plan A – just to access benefits
    - Could also manage increasing costs on Plan C
    - Need to have clinical protocols
- Networks / Preferred providers
    - Preferred providers would adhere to clinical protocols
    - Could have preferred fees or risk sharing mechanisms
    - Also ensures higher quality of care
- Improved underwriting
    - To prevent anti-selection
    - Experience on Plan C may be due to pre-existing conditions
    - Will not affect existing business
- Reinsurance
    - Poor experience could be due to volatility
    - Unlikely to address adverse trends
    - Could assist by providing risk management protocols.

iii.

Benefit design measures:

- Can impose limits on benefits
    - Need to analyse experience to see what level of limit appropriate (level of savings required)
    - Limit likely to be lower than that current benefits
    - Consider how many impacted

- Use of co-payments or co-insurance
  - Cost sharing may mean less likely to abuse
  - Needs to be at level that is not too high to prevent access to care
  - Or too low to not have desired effect

- Use of savings account structure on Plan C
  - Unused portion of benefits carried forward to the next period
  - Members incentivized to manage own costs
  - But need to understand implications
  - Erodes cross subsidy

- Exclusions
  - Can affect value of the product
  - Consider what competitors are excluding
  - Focus on factors associated with moral hazard e.g. self-inflicted, hazardous passtimes

QUESTION 3

In part (i) most candidates scored well and understood the features of tiered vs non-tiered CI, outlining the advantages vs disadvantages nicely (meeting needs better, potentially lowering costs etc). Surprisingly the disadvantages often outweighed the advantages for many students in terms of answer length.

In part (ii) candidates generally did not score well. Most did not read the question to mean two different types of distribution methods and lumped them together under one method of bancassurance. This made it difficult for them to score well, since the two methods required different measures to be taken around product, underwriting, training etc. The candidates who correctly outlined ATM vs branch-sold scored marks quickly and easily. Only the very strong candidates recognised the bank could use its own data to target certain individuals rather than offering the product to every ATM user.

In part (iii) candidates scored fairly well on this question recognising that product design can assist in protecting against anti-selection. Many made the point of pricing for anti-selection and this was not awarded marks - adding margins in pricing for anti-selective behaviour will only seek to worsen the experience as those looking to select against the insurer will still take the product (almost at any price) while it deters the healthy risks who deem the product now more expensive than the competitors.

i. Advantages
- Tiered
  a. CI product becomes more comprehensive with benefit offered at levels of disease progression that would not have happened under non-tiered
  b. Payment more closely matches financial need reducing incentive for anti-selection
  c. Multiple claims are possible which enhances customer satisfaction and retention
  d. Could be a competitive advantage/differentiator
  e. Could be cheaper as payment is generally expected to be less than 100%
  f. Considered more fair to the policyholder

Disadvantages

- Tiered
  a. More complex than non-tiered making it harder to compare products in the market
  b. Significant systems development/sales training may be required
  c. Potential for higher degree of claims dispute
  d. Data to price more accurately could be difficult to find

ii. Considerations:

General

- Infrastructure already exists (bank branches and ATM's), so should be cheap to leverage off
- Both channels are likely to target only current policyholders/bank account holders, unless significant advertising is done to attract new business/lives
- Bancassurer has direct control over both channels, so easier to manage target market, communication, etc.
- The offering in-branch and on ATM should be consistent to prevent anti-selection, customer dissatisfaction, and potential churn if differential rates/benefits are offered

Walk-in customers

- Will need a kiosk / point of contact to make the sale – training will need to be done for banking staff or hire advisor to sit in branch
  a. Can have a simple proposal form that customers can fill out in the bank branch with simple underwriting questions or
  b. Link to outside call centre for application/underwriting
- Underwriting will be very important to prevent/reduce the level of anti-selection
  a. Can have nurse visiting bank branch to take bloods, but this will increase the cost
  b. Depending on the actual benefits/level of cover, may decide that medical tests are not necessary, but have pre-existing exclusions and ask simple questions on family history and personal risk
- Risk of anti-selection may be higher if customer initiates the sale, but may be lower if bank staff push sales
- Might need to incentivize banking staff to push sales
- Decide whether requirement is to be banking customer (cross selling); Can attract new customers to the banking products – good synergy with bank

ATM prompt

- Limited scope for underwriting – short list of easy to answer questions at best
- Can target specific customers to see the prompt only thereby reducing anti-selection (e.g. Based on type of bank customer/account or level of salary coming into bank account)
- Only for existing bank customers so will not increase customer base of bank
- Lesser requirement for bank staff training
- Natural link to bank account for premium deduction

iii. Anti-selective measures:

Walk-in customers

- Full medical underwriting possible if set up to include nurse reducing anti-selection significantly
- If access to call centre or similar to ask underwriting questions can have relatively comprehensive set (e.g. Family history) with declining cover for negative responses
- Less aggressive marketing – only target lives expected to be good risks (based on information available, i.e. current clients)

ATM prompt

- Simple kick-out questions to decline cover for negative responses
- Target specific lives only, given they are current clients and you have some information

General

- Use of waiting periods during which no claims are payable
- Staged benefit levels over time (e.g. 25% in first 6m, 50% after 12m and 100% after 18 months)
- Exclusion clause for pre-existing conditions

QUESTION 4

This question was typically very well-answered with most candidates understanding the scenario and the practical implications of firstly, introducing incentive discounts for being active and secondly, of making changes to these discount incentives. Marks were typically lost for not making enough distinct points - in part (ii) especially, where candidates were expected to identify the risks of such changes.

i.

Advantages

- Improved health of their members leading to better health outcomes
- Leading to reduced costs due to improved health
- Increased persistency rates (reduced withdrawal rates) as the discounted premiums will be competitive
- Increased marketability and sales, especially amongst those already using *MoveIT*
- Increased advertising – the wearable device company and insurer may reciprocate in pushing each other's product (synergistic relationship)
- More data to track health trends
- More data to risk-rate
- Interoperability platform created for this launch can be leveraged off going forward

Disadvantages

- Difficult to quantify the savings due to increased activity compared to the cost of the discount.
- Large proportion of the costs will be short term while the savings will be long term – will require the members to stay on the plan a long time to reap benefits.
- The fair levels of the discounts will be uncertain until experience has emerged. May take some time before the insurer can see that the discounts were appropriate.
- The assumptions set on uptake and meeting targets may be wrong.
- The campaign is open to abuse, i.e. people not wearing the device themselves in order to get discounts (resulting in expected health benefits and claims savings not materializing)
- Eroded reserves if more than expected people meet the targets.
- This will impact on investment returns.
- There is an element of selecting into the program. Health improvement is limited because those who have the wearable devices are probably:
    - Healthy and fit already so there may be no increase in activity
    - Tech savvy (likely the younger members) so limited health improvement in the older population
- Lower premiums received from lives that were already in-force and implicitly meeting targets.
- To make up for lost premiums, may have to increase the premiums for less healthy-lives in the future more than they would have.
- Cost of developing IT systems to collect the data
- Costs incurred of verifying the data if that is required
- Additional difficulty in determining how to verify the data
- Members who cannot afford the device or who are not happy to use technological devices will be implicitly excluded:

- Regulation may not allow that premiums are discounted based on technology that may not be available to every member
- This may bring about negative feelings amongst the members who cannot benefit from discounts due to being implicitly excluded because they do not own the device.

ii.

Risks

The severity of the risk will depend on:
- The market's tolerance to accept a reduced discount. This will be affected by how soon the discounts are reduced.
- What rates competitor insurers are providing.
- How the reduced discount is communicated.

The risks are:
- Selective withdrawals would occur. This is because the unhappiest members are the healthiest (impacted the most)
- Leading to worsening claims experience, and
- Leading to reduced volumes of policies to spread fixed costs across
- Financial loss on withdrawal – the initial costs will not have been recouped for new members that had joined for this incentive but are now withdrawing.
- Reputational risk as dissatisfied policyholders advise new policyholders against joining the insurer.
- Marketability risk
- Brokers may prefer selling a competitor's product if their other clients are dissatisfied with the increase.
- Broker fees – can the commission be recouped for the members that have withdrawn early.
- A financial loss where any cross-subsidy exists. The withdrawal of those most likely to be impacted and unhappy about the change:
  - Healthy to sick – withdrawal of active people
  - Young to old – withdrawal of younger people
  - Wealthy to poor – withdrawal of those who can afford the device (cross-subsidies between different distribution channels)
    - The more financially sophisticated members may have bought through channels where the commission is higher. There is a risk these members will withdraw making the assumption on this cross-subsidy invalid.
- Policy wording:
  - Are they allowed to change the scorecard and have they been clear?
  - Risk of being forced to offer the discounts as per the original scorecard:
    - The change may have been due to wrong assumptions and unaffordability. Being unable to correct for this will impact the sustainability of the company.
    - Aggrieved customers with no financial improvement (marketing risk).
- If there is negative market backlash, the tech company may want to distance itself from the insurer.
- The costs of setting up the interoperability of the insurer systems and the *MoveIT* system will have been high. Decisions made could negatively impact the collaboration or recouping the sunken costs.

QUESTION 5

Candidates struggled to cover sufficient points in part (i) and needed to consider the specifics of the condition rather than a broader approach to adding a new condition. This led to points such as the importance of the definition and subjectivity in diagnosis. Candidates performed well under part (ii) but some did not apply themselves to the specifics of the question particularly regarding the usefulness of own data.

i.

Advantages include
A worthwhile addition valued by customers, giving competitive edge. Easily identified by the public.
Readily communicable to sales people.
If incidence low, increase in premiums may be low.

Disadvantages include
Difficult to draft wording for a mental illness addition. Diagnosis does not tend to be definitive
Onset tends to be in old age – difficult to distinguish from dementia
Good relevant morbidity data hard to find.
There may be many potential claims declined if definition is not clear.
Addition may be less relevant to younger primary target market.
Difficulty in underwriting/exclusion.
Leading to anti-selection
especially if no one else is offering it. Difficulty in approving claims
no independent test.
Might not be able to get reinsurance.
Increased premiums in competitive market.
Expenses of change to claims processing, underwriting etc. arising from two separate contracts.

ii.

Morbidity/Mortality
Analysis of the company s experience is of no use as this is an addition.

Sources
Industry data may be available.
Assistance from reinsurer
Data from overseas – may not be relevant
Population data – on occurrences
e.g. hospital episode data o
Published data such as clinical studies will probably need adjustment for the particular circumstances of the company and its products.
Need to consider trends in experience, and awareness of benefits influencing claims.
Rates included in reinsurance terms would probably be followed.
Data needs to be interpreted with care.
Comparison of the proposed target market and that in the data is important.
Almost certainly likely to use the experience to generate an adjustment to a standard table.

QUESTION 6

Parts (i) and (ii) were generally well answered although points needed to be clearly stated to receive credit. Under part (iii) candidates who organized their answer under appropriate headings tended to perform well while those who dived in without structure struggled to generate sufficient points.

i.

- Financing of care at home, including housing costs, care costs, and any aids required at elderly age when a person is unable to fully look after themselves
- Financing care in specialized facilities, e.g. care centres
- Offers financing towards higher levels of care, e.g. nursing care as opposed to informal or less specialized care
- May or may not indemnify the patient against the cost of long-term care, depending on policy specifics
- Provide for different levels of support that a person/family may need, e.g. Provide support in choosing service providers, or advise on how to tailor individual care strategies.
- Provide respite for informal carers by providing temporary nursing care at one's home
- Facilitate the costs of care in informal care settings .e.g. changes in the home such as stair-lifts.
- With modern culture of families spread around the world, this product could provide care for one's parent while living somewhere else.
- Reduce strain on government for welfare for old-age care

ii.

This product may not be selling because:

- Country has high mortality and few people needing this product
- A culture of large and close families where informal care is the norm
- Poor savings culture
- People not cognizant of the need for LTCI
- Long-term nature of premium payment period means that when people have financial difficulties, premium payments stop and the cover may lapse. i.e. current needs more urgent than future needs.
- May be sold via incorrect channels or commission structure may be unattractive to brokers/ PFAs if sold via this channel.
- Long Term Care may be provided by the state already, or current post-retirement products may already provide some form of cover for LTC (e.g. annuities may increase if a person becomes terminally ill)
- Policyholders may not have access to LTC due to shortages of supply of care services, thus see no point in buying the product.

iii.

The actuary would need to consider whether this product would be marketable and can be sold competitively, while still being profitable.

Benefits and Financing

The benefit will be a lump sum required to cover the cost of entry into the retirement village.

The policyholder will have to fulfill certain requirements to be eligible for the benefit, e.g.:

- Failure of a number of Activities of Daily Living
- Doctor signing off on policyholder requiring ongoing care
- Minimum age

These could be financed by:

- Pre-funding by paying premiums after retirement until the point of needing care (could be combined with another savings product).
- Immediate needs – people that would buy this option would already be able to fund the care themselves, however the insurer may have negotiated better terms than an individual would.
- Equity release from their current properties, i.e. selling their homes to buy entry into the village.

Profitability

There may be relatively few lives that take out this benefit, given its high cost (luxury living facilities – not cheap!).
Will there be sufficient volumes to cover the insurer's expenses and profit requirements?

Several luxury care home companies are already in the market. This should raise competition in order to limit prices into these homes (i.e. the insurer's liability).
The insurer could negotiate with the care company to bring in business for them in exchange for lower rates.
However, the existence of insurance will increase the demand for these homes, and in turn increase the prices.

No other insurers in the market have launched such a product, so the profit margins could be high (as compensation for the high-risk nature of a new product).

Marketability

This product may be very attractive as it would fulfill a very likely need for elderly lives within a luxury environment.

However because of the high cost of the benefit, this product will likely be very expensive.

May be a tough sell given that LTCI has not been selling well and people may not appreciate the need for future longer-term care.
However, there are people paying from their own pocket for entry to these luxury villages, so there is a market already available.

There may be challenges if there is insufficient supply of these homes, especially in future when care is required and a promise has been made.
There would be further pressure if people can choose which area they would like to live in.

This is complex, new, and subject to the behavior of third parties (the care company/retirement village). There is scope for reputational damage,
or paying out more claims than anticipated.
If these homes fail/close in future, what alternative (and at what cost) can the insurer offer policyholders? This may be a big risk.

Distribution channel
Product is quite complex, which makes proper understanding thereof vital. Would therefore likely use independent or tied agents selling the product. Mis-selling will be a significant risk to be address, particularly as terms and conditions will be complex.

Data and pricing
- Assumptions on investment return are critical as the insurer will need reasonable returns to fund the product,
- As this is a new product, in a new market there will be little experience to price from.
- Future trends are also uncertain as the industry is developing. Given the long-term nature of this product, and the many uncertainties, it will require large margins making it more expensive.

Other considerations
- Will the insurer's current administration system be able to process the payments here, and validate the premiums and claims being submitted?
- Can fraud/abuse be managed here?
- How can over-charging and under-servicing by the service provider/estate home be managed?
- Are there any tax benefits that could be captured in the design?
- Alternative product designs could also be considered here, e.g. cash only benefit.
- What regulation currently exists around offering this product, and what likely changes to regulation is expected following the launch? e.g. TCF principles?
- Competitors may follow suit, placing pressure on the profit margins.

It will be key to assess if an appropriate network can be set up, or that there are sufficient homes for the market being considered. Otherwise the volumes written will need to be limited.
This product will be complex and expensive to launch and manage. Sufficient volumes would be needed.
That said, if the numbers can work, this could be a good opportunity for the insurer.

QUESTION 7

It is quite evident that a number of candidates ran out of time on this question and missed out on easy marks as a result of leaving sections blank. Overall, candidates scored satisfactorily. For part (i), many did not pick up on the benefit being 3x annual salary, and many forgot to calculate the monthly risk premium which was asked for. Part (ii) was a glossary definition and disappointingly answered. Part (iii) was fairly well-answered, but few candidates applied their answers to the specific scenario and many made valid points without explaining the reasoning/impact, losing unnecessary marks. In part (iv) some candidates explained how to determine the risk premium and outlined using various risk/rating factors or past experience (which is not available), but the question expected students to focus more on items/considerations in addition to the theoretical risk premium (which they calculated earlier) that will influence the final price.

i. Expected claims = 154*300k*0.002 + 225*450k*0.002 + 300*600k*0.002 + 156*750k*0.004 + 120*900k*0.006 + 38*1050k*0.01 + 7*1800k*0.01 = R2 295 900

Expected monthly risk premium = R2 295 900/12 = R191 325

Average monthly risk premium per employee= ~R191.33

ii.

- The benefit level in a group insurance arrangement below which the member of the group is not individually underwritten.
- Simple declarations of health may still be required, e.g. active at work for a minimum period.
- Free cover limit is normally a function of number of members in the group, or the aggregate level of benefits.

iii.

- Consider the likely scope for anti-selection
  - Is the cover compulsory or voluntary i.e. can individual employees opt in.
  - If compulsory the scope for anti-selection is reduced and vice versa.
  - With a lower risk of anti-selection, the FCL can be increased and vice versa.
  - The members most likely to select against the employer are those with higher incomes (especially if cover is not compulsory) (and in this scenario, the individuals with higher risk (older) are typically the individuals with higher income, and thus benefits).
  - And these higher-income/benefit level members are typically the decision-makers (CEO) – the purchase of this group policy may be a form of anti-selection – cheap cover for higher risk, especially given the short-term nature of the policy.
  - If the group is large, the impact of a few employees with large salaries may be small, and a higher FCL may be sufficient.
  - Larger groups are also less likely to have an individual select against the insurer (i.e. in small groups the decision-maker may take cover out for the group just so that they can claim for the benefit).
- Cost of underwriting

- The idea with the FCL is so that there can be cost saving on the amount of individual underwriting that needs to be done.
- Bearing in mind anti-selection, set the FCL at such a level that minimises the number of individuals that need to be underwritten but protects the insurer against a small number of individual skewing the group's experience.
- Ordered profile from smallest to largest of the benefits being offered to look for any noticeable 'jump' in benefits being offered – other than the CEO, the average salaries appear to be quite low, so may be worthwhile to only underwrite the CEO, which may reduce the risk of anti-selection significantly and avoid the problem of the CEO wanting to purchase the group policy for personal gain.

- Benefits offered
  - Once-off or is there reinstatement – with reinstatements there is greater risk, hence a lower FCL will be required.
  - Level of benefits relative to salary will influence anti-selection and hence the level of the FCL i.e. 3x annual salary might be unduly high for a CI event.
  - The aggregate benefit level may also influence the FCL.
  - Level of benefits relative to competitors' offerings – if richer, then the group may be selecting against the insurer, more selection = lower FCL.
- Competitors' practices
  - If FCL significantly higher or lower than competitors, then increased scope for anti-selection and more higher-risk groups will find the insurer's offering attractive.
  - A low FCL will mean more underwriting and less competitive premiums due to the increased cost
- Industry/Size of employer
  - The nature of the industry/work that the employees perform, their level of financial sophistication, etc. may have an impact on the level of risk the group poses – higher risk, lower FCL.
  - Employer is rather small – 1000 employees, so the experience may be quite volatile, potentially requiring a lower FCL to better understand/price the risk (Low incidence rates on aggregate, so small number of claims expected, hence one or two additional claims will significantly impact the experience).
- Regulatory restrictions on level of FCL

iv.

- The premium charged should be sufficient to cover the risk outgo of the policy (claims),
- make a contribution to the insurer's overheads (office, tech, HR, etc.),
- cover the direct expenses (commission, tax, etc.) incurred by the policy,
- contribute to the insurer's profits
- allow for uncertainty in the pricing basis
  - no claims experience on this group, plus small(ish) group, hence additional margins may be required
- Allow for reserving/solvency requirements
- The extent of cross-subsidies between employer groups on these policies, or between the group products and other products may have an impact on the price and give the insurer some scope to deviate from the theoretical office premium outlined above
- The final premium should be adjusted for competitiveness, depending on their products/benefits and the uniqueness of the insurer's offering

- A higher premium can be charged in an uncompetitive market and vice versa
- If the insurer is trying to win market share/build loyalty under the clients, may sell for cheaper initially, gradually increasing the price after renewal
- Regulatory restrictions on price may dictate the price

