

EXAMINERS' REPORT

June 2014 examinations

Subject F101 — *Health & Care* Fellowship Principles

INTRODUCTION

The attached report has been prepared by the subject's Principle 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

i.

Utilize data from that product – most relevant, reflects risk profile√√

Could utilize data from other products if there was insufficient data but would require adjustment√

The financial limit is currently per beneficiary but may change to per policy√. This means you would need claims data per beneficiary and per policy. √√ (this is key because you cannot use average claims to adjust for changes in benefit limits)

To test the policy limit you would also require family size data.√

In determining how much historical data to use you will need to balance credibility and relevance. √

Can only use data that is fully run off. √ You will need information on the benefits offered in each prior year√

The benefit may be differentiated between acute and chronic medication – if so the data should be split accordingly. √

You will also need exposure data√ (both for each beneficiary and for each family √) – i.e. join and leave dates√

ii.

Check that the benefits paid correspond with the applicable benefit rules√ (for example, the maximum claim should not exceed current benefit limits√).

Compare the claim totals with the totals reported in financial reports√ (i.e. line level data should correspond to aggregated or summary data, and claims data should correspond to financial data√)

Compare the exposure data to membership totals as per the financial reports√ (i.e. premium data should correspond to exposure data) √

iii.

- The analysis will need to be done using the distribution of individual claims amounts √ (both per beneficiary and per policy) √. For the benefit per policy this analysis will need to be split by family size. √
- Past data will need to be inflation adjusted√, using an appropriate inflator for medicine√
- You will need to consider whether the benefits have previously been changed√, and adjust data accordingly. √
- Benefit changes will affect the tail of the distribution√ – will need to ensure that the tail of the distribution is fitted appropriately. √
- The next step is to truncate the distribution at the old and new limits√, and calculate the total claims for the old and new limits. √
- This total cost should then be converted to an amount per beneficiary or per member√, and inflated to the time period in which the benefit applies√

iv.

Medical inflation different to expected√

- change in basket; √
- unexpected currency fluctuations; √
- actual price changes different to expected√

Changes in the distribution of claim amounts √

- behavioural changes of beneficiaries/members/medical providers√√
- changes in underlying burden of disease√

Changes in the utilization of benefits (proportion claiming) √

- Proportion of beneficiaries claiming per family√
- may be driven by changes in underlying disease incidence√

Demographic changes which affect utilization and claim amounts√. These might be anti-selective due to the benefit improvement √

v.

Increased drugs available on formulary✓✓

Loosening of clinical protocols (e.g. for pre-authorisation) ✓✓

Reduced co-payment or co-insurance✓✓

Better prices negotiated with a preferred provider network✓✓

QUESTION 2

i.

The advantages of using the data

- Familiar with how data is captured and stored✓
- Data quality is known✓
- Free and available✓

Group business is likely to be written without underwriting based on minimum group size and compulsory cover✓✓

- Less policyholder-level data✓
- Lower anti-selection risk✓
- Need to consider whether underwriting process will result in higher or lower risk✓
- Depends on extent of underwriting likely to be implemented✓

Need to consider if benefits will be the same ✓ e.g. individual business may have longer waiting period ✓

May be able to use ultimate experience of group business✓

Can use experience to derive admission rates by age✓

a.

Reinsurance

- May be useful to obtain reinsurer assistance with data, pricing and underwriting✓
- Most likely quota share✓

Policy design

- initial waiting period for cover✓
- waiting period per claim✓
- differentiated daily rates✓
- pre-authorisation✓
- limiting the total number of days that can be claimed for✓

Underwriting

- loadings✓
- exclusions✓
- Detailed underwriting can be expensive✓
- Cost of underwriting relative to premium size✓

General points

- Need to be competitive i.e. offer value✓

QUESTION 3

i.

Inflation in the cost of cover affected by:

Increased utilisation of benefits due to changes in the demographics of the insured population√

- For example, an ageing population√

Increased utilisation of benefits due to increasing disease burden √

- For example, increased prevalence of lifestyle conditions√
- epidemics√

Increased utilisation of benefits

- due to greater awareness of cover√, by either of or both policyholders and service providers√
- improved access to service providers√
- increased supply of service providers√

Supplier induced demand√

- Can increase utilisation of benefits√
- And increase the use of more expensive goods and services√

The benefit package provided may have increased over time√

- In addition policyholders may have migrated to more expensive packages√

Prices of underlying goods and services increasing at a rate above inflation√

- Cost of new technology√
- Cost of new treatments√
- Higher wage inflation in medical profession (skilled) √

May be due to increases in non-healthcare costs√

- Administration/ managed care √ (more services, increased services provided√)
- Commission/distribution costs√

May be due to a requirement to build reserves√

May be due to increasing fraud/ abuse of benefits√

ii.

Implications for the government

- The government would need to establish the entity – legislative process√√
- The risk of providing cover would be underwritten by the government √– would need to identify funding sources √and the funding mechanism. √
- The government would need to establish administration capacity√ (large volume of claims√, managed care capability√) – alternatively this could be outsourced√
- A governance structure would need to be established√ (e.g. oversight, management of fraud) √
- The new insurer would need to put in place payment mechanisms with doctors and service providers√ (contractual arrangements such as salaries√, risk sharing√, alternative reimbursement√)
- and will need to consider whether to contract with both state and private health care providers√√

Implications for private insurance market

- Cost of cover for qualifying policies may reduce√ (economies of scale√, but also reduced competition√)
- Size of private insurance market diminishes√ – impact on solvency√, jobs√
- Phased approach likely – requires transition mechanism√√
- Perceived loss of freedom of choice for policyholders√
- impact on distribution channels√

iii.

Funding options (3 of...)

- premiums/social insurance contribution – need to be affordable (income based)
- general tax revenue – would need to increase tax rates
- VAT – broader collection but includes not employed
- Payroll tax – linked to income and collected by employers

QUESTION 4

i.

An early withdrawal may cause financial loss, where insufficient premiums have been received to recover the initial strain involved in writing the policy√.

- There is the wastage of the investment in client development √
- Loss of expenses in customer processing√
- Possible loss of commission before premiums have been received to cover this√
- The loss of future sales from an existing client. √
There will be a loss if $\text{surrender value} > \text{asset share}$ or $\text{asset share} < 0$ √
- Loss of embedded value√

The effect of lapses may be selective√, such that the healthier lives will be more likely to withdraw, leaving a worsening propensity to claim among those continuing√.

Higher than expected withdrawals will reduce the volume of policies in force√ – this results in fixed expenses being spread over fewer policies, and increases the risk of not being able to meet fixed expenses. √

Increased withdrawals may have implications for the sustainability of the risk pool√ (law of large numbers) and may reflect underlying problems with the insurer's competitive position√

High withdrawals may indicate a flawed sales process/misselling√

- The potential for reputational damage √
- Regulators could enforce the insurer to meet the policyholder's expectations (against the insurer's own intentions) where the product was missold or other literature was misleading. √

ii.

- analyse own data, subdividing into relevant risk cells, regrouping as necessary to compromise between homogeneity and credibility√√
- Possible subdivisions include (√ each, max 3 marks):
 - policy type (eg stand alone, claim acceleration)
 - different series (eg issued in different past years with different policy wordings)
 - sales channel
 - sales agent
 - policy duration
 - premium size
 - benefit size
 - premium payment frequency (annual / monthly)
 - premium payment method (cheque / direct debit)
 - age
 - gender
 - smoker status.

- take into account industry and reinsurers' experience, especially with regard to trends√
- Assess whether withdrawals have been in response to changes√
 - o Changes to premiums (where premiums are reviewable) √
 - o Changes in surrender values√
- Analyse changes in the external environment√
 - o economic√ (e.g. premium affordability) √
 - o political√ (what State benefits are offered as an alternative?) √
 - o commercial √ (is there a better or cheaper competitor's product?, overall market share/volume of business?) √
 - o awareness √ (is there a belief that the policy is necessary?) √.

iii.

Change sales channel

The sales channel can have a direct effect on the withdrawal (or renewal) experience√.

Different channels employ different sales processes, which can include differences in terms of aggressiveness of the selling approach, the extent to which customer needs and ability to pay are considered√, and who initiates the sale√. These factors can have an effect on persistency, particularly early on, when people who have been "over-sold" their policies are most likely to cancel.

Proper sales training is paramount√

Appropriate commission levels such that sales personnel are encouraged to recommend "the right policy" √

A survey of client understanding can serve the purpose of ensuring policyholder satisfaction with both the sales process√ and the product itself. √

Results of this survey, performed as part of an after-sales service, will be fed back into the literature provided and into the routines by which products are explained and sold√.

Provide a product which meets the needs which the person has identified as providing grounds for insurance protection. √

The more artificial the needs creation through the sales process, the less likely the policyholder is to maintain the product itself, let alone purchase further covers from the insurer√.

The aim should be to meet needs at an affordable price. √

The customer should receive information on a regular basis as promised√

A business retention team may be formed to communicate with lapsing policyholders and recommend suitable alternatives. √

Don't pay surrender values or reduce surrender values √

Monitor withdrawal rates √

Provide no claims discounts or loyalty programme √

Ensure income meets outflow of expenses or structure premiums to reduce negative asset shares √

For CI policies, rider policies are likely to have lower withdrawals than stand alone policies√

QUESTION 5

i.

Claim reserves

- Pre-funded policies reserve for probability of claim (and expected cost)
- Claims in payment balance of cost (longevity)
- May reserve for claims in waiting period

Other reserves

- Expense reserves
- Contingency reserves
- Mismatching reserves

ii.

Assets for matching

Need to match by nature, term, currency ✓

Pre-claim:

For the benefits guaranteed in money terms, fixed interest bonds would be the best match ✓.

For closest matching these should have low default risk ✓, e.g. government bonds ✓

The cashflows arising from the bonds should be matched by term to the expected liability cashflow profile but there may not be any bonds of a sufficiently long term ✓ in which case an alternative would be to seek an immunised approach ✓

For the indemnity based business, the benefits will be both a long time in the future ✓ and highly uncertain ✓ in amount – so perfect matching will not be possible ✓

One approach might be to invest in assets offering a “real” return, such as equities ✓

For both forms, if the benefit is payable in the domestic currency, the assets should also be denominated in the domestic currency ✓

Expenses:

Inflation linked assets to match expenses ✓. These could be government index- linked bonds ✓, but as these particular expenses are likely to be closely linked to salary inflation ✓, and may be many years in the future; equities may be a better match ✓.

Premia:

Also need to take account of expected future premium income, e.g. when calculating the discounted mean term. ✓

Post claim:

The benefits will be of much shorter duration ✓

Liquidity will be much more of an issue ✓

Best match will be made up of some government bonds ✓, and some cash type investments ✓

For indemnity benefits, may still want some inflation linked assets ✓, however equities are unlikely to be appropriate given the short duration of long term care ✓ claims so index-linked bonds may be used instead and we also still have some expenses to match with inflation linked assets ✓

The company should try to diversify its assets provided it can still be matched ✓

iii.

May require assets to be held in a matching currency even if no further mismatching rules are in place ✓

Requirement to hold a mismatching reserve ✓

A requirement to hold a certain proportion of total assets in a particular class – for example government stock ✓

Restrictions on types of assets that can be held (allowability) ✓

Restrictions on proportion per asset class ✓

Restriction on which assets can be used to demonstrate solvency (admissibility) ✓

Secondary methods include affecting the choice of assets through their relationship with the basis used to value the liabilities ✓

Reporting of detail on assets held ✓

Restrictions on offshore assets ✓

Restriction on self-investment ✓

Limit on the amount that can be invested in any class ✓

Restrictions on the maximum exposure to a single counterparty ✓

Custodianship of assets ✓

QUESTION 7

i.

The underlying risk profile of a population affects the frequency of healthcare utilisation, as well as the associated cost.

ii.

Demographic factors (✓,✓ per example, max 2)

- Age
- Gender/sex
- Race and ethnicity

Socio-economic status (✓,✓ per example, max 2)

- educational attainment
- employment
- housing

Urban/rural split✓

Proportion of the population uninsured✓

Clinical factors (✓,✓ per example, max 1.5)

- chronic disease prevalence
- hospital admissions

Supply side factors (✓,✓ per example, max 1.5)

- number of hospital beds
- number of clinics
- specialist/quaternary facilities

iii.

Data easily obtainable✓ (for example, clinical data may be difficult to obtain✓)

Verifiable✓ (for example, data from a separate source such as the census✓)

Objective✓

Not politically sensitive✓ (for example, race and gender may not be considered appropriate✓)

Cognisant of the particular features of the country✓ (for example, high HIV prevalence may necessitate inclusion of a factor✓)

Parsimonious✓ (capture as much information as possible in as few as possible factors✓)

Balance between demand side and supply side factors✓ (need to allow for limitations on supply, but need to ensure that budget enables service delivery to be improved to meet population needs✓)

Relevant and up to date✓ (particularly if there are high levels of migration between states✓)

Inexpensive to collect the necessary data (for example, collection of clinical data may be onerous)

Transition from current system to full risk adjustment to prevent budget shocks

(credit given for other examples)

END OF EXAMINERS' REPORT