EXAMINATION

September 2006

Subject ST1 — Health and Care Specialist Technical

EXAMINERS' REPORT

Introduction

The attached subject report has been written by the Principal Examiner with the aim of helping candidates. The questions and comments are based around Core Reading as the interpretation of the syllabus to which the examiners are working. They have however given credit for any alternative approach or interpretation which they consider to be reasonable.

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Chairman of the Board of Examiners

November 2006

Comments

Candidates who approached the questions, especially the more substantial elements of each question, in a methodical and detailed manner were far more likely to satisfy the examiners and receive a pass in the subject. There was often a lack of sufficient detail in the answers with candidates failing to realise that each valid point in the answer would normally attract ½ marks with the more basic elements e.g. details in a pricing basis such as age and sex, would attract ¼ marks.

Candidates should also recognise that whilst Reinsurance can play a valuable role in the UK health insurance market, reinsurance is not a panacea for all evils.

1 **Example 1**
Most definitions are currently occupational.
Examples are as follows:

- inability to perform own occupation
- inability to perform own occupation and any other suited occupation by education, status or training
- inability to perform any occupation
- inability to perform own occupation for the first (e.g.) 2 years of claim followed by inability to perform any occupation

Reasons
Require ability to carry out an occupation, otherwise incapacitated
Matches the risk/needs of the policyholder
Easy for the policyholder to understand

Occupation
Clerical etc.; most employed persons

Example 2
Activities of daily living (ADLs).
The policyholder's inability to perform a number of normal everyday tasks.
Definitions of these typically include:
feeding, dressing, washing, toiletting, moblity, transfer
A common requirement for the payment of the benefit is the failure of the insured to be able to undertake, unaided, a given number of the ADLs above, commonly 3 or 4

Reason
An ADL definition can be applied to a wider range of lives.
Less subjective than one based on the ability to perform an occupation.

Occupation
Housepersons

Example 3
Function assessment tests (FATs) or activities of daily working (ADWs) or Personal Capability Assessment (PCA).
Marks were given for a description of one of ADW, FAT or PCA

Reasons
With these definitions the activities include skills like dexterity, mobility and communication.
They can be more objective, particularly if the "skills" defined relate to occupational class.

Occupation
E.g. Potter

Alternative definitions include Housebound.

2 Type of contract (e.g. reviewable/guaranteed, individual/group)
Duration in force
Year of writing
Sales method
Commission structure
Agent
Target market
Premium frequency
Premium size
Premium payment method
Original contract term
Sex / age/ smoker status
Claims experience / NCD
Deferred period for IP, LTC
Underwriting
Occupational class/socio-economic class/salary
Location
Need data by time periods such as calendar year to examine trends

3 Volume of claims difficult to administer on system, staff resources.
Volume of claims difficult to appraise medically.
Statistics may not be available to price contract.
Difficulty in obtaining certification.
Difficulty in an unambiguous definition of a claim inception.
Periods of recovery and relapse difficult to ring-fence.
Cost is almost certainly prohibitive to sales
Reinsurance will be difficult to obtain
Pre-existing exclusions may be difficult to enforce
Anti-selection (malingering) rampant: "paid for a day in bed"
Less than maximum period for self-certification of work absence?
Experience likely to be highly seasonal
Experience likely to be subject to latest germ going around e.g. bird flu
Is this insurance? Has p/holder suffered a loss?
Volume of declinatures may shed bad light on insurer.

4 (i) Formula for accelerated CI risk: $ix + (1 - kx) * qx$
where i is the incidence rate, k is the proportion of deaths from CI and q is the death rate.

35 next so require 34½ exact

CIBT06 rate for 34 = 1.1 +.75 *.6 = 1.55 per 1000
35 = 1.2 + .75 *.7 = 1.725
so rate for age 35 next is 1.6375

Basis 50% with 20% discount in year 1

Premium per 1000 = % table * (1-selection discount) * rate * adj for benefit at year end * expenses loading
= .5*.8 * 1.6375 * 1/1.04 * 1.1 = 0.693 per mille
Premium for £50,000 = 50 *.693 = £34.65

(ii) Given only the above must use the Conventional method to calculate the option.

Assumptions

All lives eligible to exercise the option will do so.
The mortality/morbidity experience of those who take up the option will be ultimate experience which corresponds to the select experience that would have been used as a basis if underwriting had been completed as normal when the option was exercised.
The mortality/morbidity basis does not change over time.

Need rate for age 35½ exact
Rate for age 35 = 1.725 (part (i))
Rate for age 36 = 1.3 + 0.75*0.8 = 1.9
Rate 35½ = 1.8125

Normal rate with underwriting at start = % table * (1 – sel adj) * rate * adj end year * expenses loading
= 5 * 0.8 * 1.8125 * 1/1.04 * 1.1 = 0.7668

Charge for ignoring underwriting = % table * sel adj * rate * discount back to initial date * expenses loading
= .5 * .2 * 1.8125 * 1/1.04 * 1.1 = 0.1917

No lives at end of 1 year = 1 – % table * (1 – sel) * rate for age 34½
= 1 - 0.5 * 0.8 * 1.6375/1000 = 0.9993
PV cost = SA * no of lives end year * cost at year end * discount to day 1
= 50 * .9993 * 0.1917 * 1/1.04 = £9.21

(iii) Now have sufficient information to use the North American method.
Cost = SA * proportion lives exercising option * difference in actual morbidity and and assumed morbidity in standard premium rate * rate * lives at end year 1 * benefit payable at end year * discount to day 1 * expenses loading
= 50 * .3 * (.7 – .5 * .8) * 1.8125 * .9993 * 1/1.04 * 1/1.04 * 1.1
= 8.29

(iv) Looks for a judgement call with reasons. Both methods have their advantages and there isn't really a right answer. It depends on how good your assumptions are.
Under the Conventional method is it reasonable to assume that 100% of lives exercise the option?
What about lapses?
Under the N American method how confident will we be on the option take up rate?
How will we know the extra morbidity of those exercising the option?
Both methods rely on assumptions which may be difficult to justify on day 1.
The company may be able to influence the take up rate by how they communicate with the policyholder or how the product is sold

(v) We are talking about critical illness so it is not necessarily obvious that the scope of cover (range of CI events, CI definitions) is still appropriate.
Medical advances may enable greater anti-selection than previously assumed.
Need to consider the expenses of operating the option,
likely sales impact
and competitor reaction to introduction of this option
Target market and reason for policy
Are these offered to rated policies?

5 **Insurance intermediaries (brokers)**
Independent of a particular insurance company.
Usually remunerated by commission from insurer or fee from client.
Usually client initiates sale although broker may promote themselves to existing clients.
Generally sells to higher net worth individuals

Products
Able to deal with complicated products and offer market comparisons.
Free to sell any product in the market
Would all generally be capable of selling CI and hospital cash
but LTC may be limited to specialist brokers given the sensitivity of the product and the likely age of the target market.

Tied agents
Tied to one or several insurance companies.
May be employees of insurance linked organisation (e.g. bank, distribution company).
Where tied to more than one company products usually mutually exclusive
Typically remunerated by commission.
Often client initiates sale although some agents may actively engage in selling.

Products
Generally able to sell CI and hospital cash.

LTC may require specialist training and so less likely.

Own salesforce
Employees of insurance company so only sell products of that company.
Remunerated by salary and/or commission.
Sales person usually initiates sale.

Products
As with tied agents.
May have a specialist salesforce to handle LTC products

Direct marketing
Mailshots
Telephone selling
Press advertising
Internet
Affinity clubs

Products
Generally require simple products. Hospital cash is an obvious contender.
CI is more complicated and direct channel may be used to generate leads. LTC unlikely to be sold directly although direct marketing may be used to generate appropriate leads.

Worksite marketing
Broker or insurance rep obtains permission to address the workforce en masse to sell product.
Intricacy of cover depends on sophistication of staff being targeted.
May be able to offer reduced premium or simplify underwriting process.
There may be expense saving through pay roll deduction.

Products
Can be used for hospital cash and CI.

Unlikely for LTC given complicated product and age of target market.

6 (i) **John** — may require full underwriting
Depending on the insurer and his state of health.
He will be required to complete a proposal form
An dpossibly undergo a medical examination.
The insurer may obtain a GP report
and possibly other test results
Financial Underwriting — as self employed would need earnings details to be provided

(ii) John

Year	*Months*	*Type*	*Amount*
1	1–3		Nil
1	4–6		3000
1	7–12	IP	6000
2		IP	12000
3		IP	12000
4		IP	12000
5		IP	12000
6	1–3	IP	3000

Jane

Year	*Months*	*Type*	*Amount*	*Type*	*Amount*	*Total*
1	1–2	100% salary	4000	GIP	-	
1	3	75% salary	1500	GIP	-	
1	4–6	75% salary	4500	GIP	-	
1	7–12			GIP	7200	17200
2	1–6			GIP	7200	
2	7–12			GIP	7416	14616
3				GIP		15054.48
4				GIP		15506.11
5				GIP		15971.30
6	1–3			GIP		16450.44

(iii) **Joan** — Group IP
If the group is large enough then free cover will apply.
A short proposal form will be required.
Benefits above free cover will be underwritten as per Individual IP.
If insured, Short-term sick pay scheme will require a short proposal form
Actively at work certificate

7 (i) **The employees**
The 2,000 employees may or may not have a similar profile to the original scheme.
The profile may differ by:
Sex
Age
Occupation mix
Location
Stability of in-force

The new scheme
Will there be any medical selection procedure for former employees?
Will there be other local recruitment?
Will other employees have a different level of initial health screening?

What about management from the parent company seconded to this operation?
Employee selection procedures.
What activities are being continued?
What occupations are involved.

(ii) *Other details required*
Past claims experience from insurer records.

You need full details of:
Exposure past and coming year (movement stats for past and coming year)
Benefit details
Past claims

Calculate the historic burning cost.

You then need information to analyse trends in:
- Inflation
- Legislation
- Recruitment/dismissal

You will need something on employer's "discretionary" insistence.
Then, for the quote, you will require details on:.
Expenses
Commission
Margins
Cost of capital

Profit
Cost of reinsurance
Tax
Medical inflation
Book rates
Competition

(iii) Possible actions to be taken by the insurer

(a) **The calculation produces a lower premium than existing**
You quote the premium requested, in the hope that any surplus gained may be used as a reserve to produce a keener quote on a subsequent occasion when there is competition.
You provide a lower quote or enhance the benefits here in order to engender customer loyalty.
A lot will depend here on whether there is a broker involved and on the extent to which the employer regards himself a customer of the broker rather than the insurer.

(b) **The calculation produces a higher premium than existing**
You reduce the premium, cutting margins where appropriate, in order to justify the potential loss.
You hope to regain the deficit over future renewals.
Great care must be taken if such a cut reduces the premium below its potential burning cost plus direct expenses.
You refuse to quote, writing a polite letter of explanation.
You might give in this letter the extent to which premiums need to be increased, in your view, to maintain the same level of benefits, and the extent to which benefits need to be tweaked (reduced) to be funded from the same level of premium.
You might split the scheme e.g. blue-collar/white-collar or regionally, in such a way that the "main scheme" can meet the price/benefit criteria.
You might recommend a small contribution from the employees (as currently non-contributory), such that the price requirement continues to be met for the insurer.
You might consult with a reinsurer.
If the latter has a keener attitude towards the cost of the risk, a large quota share with commission compensation for expenses, might enable you to meet the employer's criteria.
The commission cost might be negotiated with the broker. This is only likely to work if all competitor insurers are similarly unable to meet the premium requirement
Offer profit share

8 (i) **Limitation of exposure to risk**
Where accumulation of risk could materially impact business results of insurer
Health and Care business has volatile claims patterns
Likely to be a requirement for segment A
May also be a requirement for segments B and C

Avoidance of single large losses
Depends on size of free assets
Most likely a requirement for segment A
May also be a requirement for segments B and C

Smoothing of results
Particularly useful when account is immature
So definitely a requirement for A
Potentially also for B

Availability of expertise
Particularly useful when entering new risk areas
Likely to be of benefit for segments A and B
Insurer may choose to reduce reinsurance later on when own expertise has grown

Increasing capacity to accept risk
Singly
Cumulatively
Can apply to all types of insurer

Financial assistance
New Business Strain
Bolster Free Assets
Particularly relevant to segment A

Tax arbitrage
Solvency arbitrage
Capital arbitrage
All segments

(ii) "Proportional reinsurance"
Insurer selects monetary limit at outset of treaty
Reinsures amount of policy sum above this limit
Can be facultative or obligatory
If facultative, reinsurer must accept all such cases
May have upper limit
May be O/T or risk premium
Insurer is recompensed for costs of writing the business
If on a treaty basis, all policies complying with treaty scope must be ceded
Only used if there is a specified sum assured
So not appropriate for PMI

(iii) **Proportional reinsurance**
Reinsurer covers agreed proportion of each risk

Quota share
Fixed proportion of each risk
Often used in this type of situation
Useful as reinsurer may want to have a significant participation in risk to compensate for expertise being provided

Original Terms reinsurance
- Premium and claims shared in equal proportion
- Payment of reinsurance commission from reinsurer to insurer

Risk premium
- Office premium not shared
- Reinsurer charges specific premium for risk reinsured
- No commission payable

Non-proportional reinsurance
Reinsurer insures risks over/between limits
Excess of loss

Risk XoL
Reduce exposure to single large claims
Useful here to protect against large (e.g. cancer) claims

Aggregate XoL /Catastrophe XoL
Reduce exposure to poor performing portfolio
From single cause (e.g. single type of claim)
Or single (catastrophic) event
Would be useful, if available

Stop loss
Reduce exposure to poor performing portfolio
From any cause for specified period
Useful here as small portfolio, subject to high fluctuation

Financial reinsurance
Limited risk transfer
Rarely used for PMI

Misc marks
Facultative/obligatory

END OF EXAMINERS' REPORT