EXAMINATION

September 2005

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

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(i) Deferred periods

- "the period of incapacity before any benefit is paid"
- The standard deferred periods 4, 13, 26 and 52 weeks
- For certain occupations, minimum deferred periods will be applied

(ii) **Definition of incapacity**
The condition that must be satisfied to enable a claim to be paid, typically "totally unable through sickness or accident to follow own occupation and not following any other for profit or reward"
Normally applied throughout the duration of the contract
Switch definitions — amend the definition of incapacity after a certain elapsed claim period (2 years).
Reserve the right to apply an alternative definition depending upon the occupation of the insured.
Some use different definitions of incapacity when cover is offered to housepersons and where cover is maintained on a restricted basis during a period of unemployment

(iii) **Activities of daily living**
a number of functional tests against which disability can be measured e.g. eating, washing etc

(iv) **Replacement ratio**
The ratio of net (in benefit) income to net pre-disability income
A value significantly less than one is desirable from the insurer's viewpoint, to provide a financial incentive for the claimant's return to work, especially given that expenses in disability may be less than those in normal (working) health

(v) **Rehabilitation/partial benefit**
IP benefit payable when a claimant is no longer totally unable to follow his or her original occupation and returns to it in a reduced capacity
The amount of benefit is usually reduced in proportion to the relationship that the gross earnings from the new job bear to those from the occupation against which disability was being claimed.

This question, which is mainly bookwork, was generally well answered.

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If different definitions are used from those in the market, the following risks could arise:
The customer may not understand the product that they are buying; therefore may not be meeting their reasonable expectations
The distributor may not understand the product.
Any change in conditions to reduce the premium will mean that the coverage is less comprehensive and therefore claims will not be paid that previously would have been.

The claimant may therefore have a real need and expectation of payment but the benefit will not be paid.
If changes in conditions result in an increase in premiums, will product still be affordable/seem attractive
Local regulations may require standard set of definitions to be used.
If the product is very different from others in the market, then it may not be sold as it is a more difficult sale.
The salesmen would be required to explain the differences between this product and others in the market.
Could add conditions that seem to be worth having but in practice have little cost.
Can the risk be priced?
Will the amended product be seen as good value by potential customers?

How can these mitigated?
The changes in policy conditions must be made clear in the policy literature and the sales process
The conditions chosen to be excluded should be those for less severe conditions where there is less likely to be a need for cover.
Conditions may be restricted with resultant impact on premium
Consultation with reinsurers over suggested changes
Undertake market research on what customers want in/out of the coverage list
Move from guaranteed premiums to reviewable

This question was generally not very well answered, with candidates often discussing aspects which were not really marketing issues.

3 (i) **Protecting the nations health**
Safeguard healthy workforce
Improve productivity and GDP
Ensure that research is directed so that it benefits the country rather than leaving it to commercial pressures

Redistribution of wealth
Ensure that the poorest members of society have access to medical care.
Ensure adequate provision of services to the elderly and for children

Political considerations / social culture
Health provision is an emotive issue and likely to be politicised
Government may have made electoral promises

Reasons for earmarked tax levy
Equity: higher earners pay more
Ensure that high costs of healthcare provision are borne by whole economy rather than those in need.

(ii) **Introduce mandatory private provision**
For certain types of procedure/health provision
For those above a certain income threshold

Incentivise private provision
Restrict public provision and encourage a private healthcare market to act as a "top up"
Offer tax incentives for effecting private healthcare eg to individuals, employers
Provide a subsidy to private healthcare providers

Require part payment

This question was usually reasonably answered.

4 Non-profit Hospital Cash (Health Cash)

A claim will become payable if:
Claimant requires medical treatment or services due to sickness or disability
Payment is dependent on the medical treatment or services being included in the contract, and falling within the definition used
Medical treatment or services has to be medically certified
Policy must have been in force for at least the waiting period before the claim event occurs
Medical treatment or services must not fall under a policy exclusion
Must not exceed annual maxima
Might not be paid for pre-existing condition

Amount of benefit payable under the contract may be:
- a fixed amount e.g. £B p.a.
- the care fees
- other payments specified by the contract

The amount paid will depend upon the medical expenses claimed, and the internal limits in the contract

The following may be guaranteed:
- benefit level
- care level
- premium level
- reviewable or renewable

Many candidates failed to note the conditions under which a benefit might be payable and tended to list the types of benefit often found under Hospital cash plan contracts, which was not what the question was asking for.

5 (i) Key principles:
Investments should be appropriate to nature, term and currency of liabilities
Want to maximise overall return subject to level of risk

Need model to project assets and liabilities for a given investment strategy and level of free capital
Best estimate assumptions
Consider sensitivity

Assets: stochastic model, project income and changes in capital values
Expenses: inflation model
Liabilities: could be linked to investment conditions

Look at difference (assets - liabilities) at each year end using supervisory basis

Need to be 'sufficient'; sufficiency depends on
- Investment strategy being considered
- Regulatory requirements
- Nature of business
- Rating agencies/competitors

Extend to stochastic investment model to produce statistical distribution of amounts to cover level of solvency capital
Calculate probability of insolvency for a particular investment strategy
For proprietary company, extend to look at shareholder earnings

Other factors that may be investigated:
- Liquidity requirements
- Effect on product development and pricing
- Method used for asset valuation
- Policyholders' reasonable expectations (PRE

(ii) Type of assets that a company may invest in.
Currency of asset
Amount of any particular type of asset that can be taken into account for the purpose of demonstration solvency.
The extent to which mismatching is allowed
Custodianship
Method of valuation

Most candidates made a reasonable attempt at this question, especially part (ii).

6 (i) Update assumptions as to future experience for existing business
Monitor changed trends in experience so as to take corrective action.
Provide management information.
Make more informed pricing assumptions for future business
Identify anti-selection
Check effectiveness of underwriting procedures

Assess need for reinsurance
Calculate profit share entitlement under an existing reinsurance treaty

(ii) **For all records**
Type of contract including benefit conditions (accelerated or stand alone)
Policy number or other unique identifier
Date of birth (age)
Sex
Smoker status
Occupation
Single or joint life first event
Policy commencement date (or duration from entry)
Policy status — in force, lapse, accepted claim, pending claim.
Date of status change
Rated information (at least sufficient to divide policies between standard and sub standard risks)
Source of business
Level of and type of original benefit (lump sum or annuity)
Level of current benefit
Basis used to calculate current benefit (indexation/rundown).
Territory/geography/address

For claim record
Cause of claim — at least split critical illness or death, ideally by all causes.
Date of claim notification.
Date of acceptance
Date of claim settlement
Date of event
Policy or claim number to link to in force record
(Last date items required to estimate IBNR)

(iii) PRE — what has happened at previous reviews?
PRE — what does the policy literature suggest?
Policy wordings (contractual restraint)
Impact on market reputation and market position
Need to consider other premium factors:
- Interest rate
- Lapse experience
- Expenses
- Capital requirements

Credibility of available data
Future experience expectations, durational effects
Possibility of anti-selective lapses.
Regulatory constraints
Action of competitors
Impact on profits
Impact on reinsurance arrangements

This question was generally well answered.

7 A prudent basis, rather than best estimate should be used with appropriate margins for adverse deviations.
Regulatory requirements need to be taken into account

Interest rate
Take account of currency
Regard to yields on existing assets
Regard to yield on sums to be invested in the future
Credit/default risk
Term of the liabilities

A low rate is prudent

Mortality
Need to consider mortality both pre and post claim.

Pre claim
Take account of sex and age
Underwriting policy
Territory of insurance
A low rate of mortality is prudent.

Post claim
Factors as above:
Take account of sex and age
Definition of disability

Duration of claim (note this is for active lives)
NB: Cause not required as this is for active lives
Source of data eg published statistics

A low rate of mortality is prudent

Morbidity
Need to consider both probability of claim and claim recovery rate

Pre claim
As for mortality
Take account of sex and age
Underwriting policy
Territory of insurance
Occupation class

A high rate of incidence is prudent.

Post claim
As for pre claim

Take account of sex and age
Definition of disability

Occupation class

Duration of claim (note this is for active lives)
NB: Cause not required as this is for active lives
Source of data eg published statistics

A low rate of recovery is prudent

Expenses
Gross valuation so would look to allow for expenses in line with best estimate plus margin
Allow for:
Product design features
Territory
Claim costs
Administration costs
Commission

Need to allow for future expense inflation.
Should be based on analysis of recent experience

(ii) In some countries it is standard practice to price using prudent assumptions and then to use the same assumption for supervisory purposes.

In other countries, it is standard practice to calculate premiums using assumptions that broadly reflect future experience, with the risks to the company being allowed for mainly through the risk discount rate. In this case, it would not be appropriate for the same assumptions to be used for both pricing and reserving.

Pricing basis will include an allowance for initial expenses (including commission)

This question was reasonably answered, although many candidates simply stated that the mortality or morbidity rates should be set prudently without defining what this meant (eg a high or a low rate). Also, candidates often did not mention the difference between pre-and post-claim mortality and morbidity.

8 (i) **Availability of data**
As it is a new contract the following items would not be available for use:
Internal own price
Claims experience
Competitors' prices
Company accounts
Regulatory returns
Local published insurance statistics

Items available for use:
Data on claims incidence and on treatment costs may be available from separate sources

Reinsurer's data, knowledge
Data from actuarial and other consultants
Data from other countries such as USA, UK, other European countries
Other local experience
e.g. data from the XYZ hospital sector
Publicly collected Healthcare experience

(ii) In all cases, may need to adjust for the known differences between XYZ and the data source. These might include:
Adjust for different lives insured compared to base data
Adjust for different coverages (exclusions, limits, procedures etc.)
Adjust for different propensity to claim (e.g. more prone to do so in US)
Allow for trends
Adjust for any pricing basis or to other unadjusted rates, to include possible margin for prudence
If available by ratings factors, may need to adjust to proposed ratings factors
Adjust for whether data underwritten or not
Different market conditions e.g. state provision, market definitions, claim acceptance criteria (in the case of reinsurers data

(iii) **Reinsurer's data, knowledge**
Data likely to come from major insurance markets; ascertain smoking prevalence in these territories
Split data in risk segments to identify those most affected by smoking, eg medical treatment, cost of nursing/doctor care, cost of accommodation, cost of initial consultation, recuperation/outpatient needs
Adjust the cost to allow for the lower impact of smoking
Apply adjustments to both incidence and severity

Data from other consultants, if available
Data from similar sources to reinsurers
May also have population and case study information; preponderance of smokers should not be difficult to research; follow same procedures as for reinsurance data

Overseas countries
National statistics should indicate proportion of smokers
May need ot be age-related in order to link to cost of treatment
Apply as for last 3 points for reinsurance data

Hospital information from XYZ
May not know if smoker, but this is own country statistics, so no smoker adjustment needed

Population healthcare statistics
May need some age adjustment if smoking prevalence varies by age and insurance does not cover all ages
Adjust data for age differential (frequency and severity separately)

Research/Charities/Journals
This is assumed to be XYZ based; as long as underlying population is representative, no further adjustment needed
If population is representative of all XYZ inhabitants, then adjust as per public health statistics above

Data may be available separately for smokers and non-smokers, in which case no adjustments need to be made

(iv) *Advantages*
Caters for the existing hospitals
Claim control easier with local claims
Single currency only
No additional transport costs
No language/interpretation problems
Different medical protocols possibly abroad
Overseas may be higher tech and more expensive

Disadvantages
Does not cater for the requirements of some likely policyholders
Treatment may be more cost effective in other countries
Introduction of restriction may lose customers, so self insure
Not clear on status of consultations abroad
Disadvantages to providers abroad

In part (i) candidates often provided a list of sources of data availability but dud not then state which were likely to be available or not. Parts (ii) and (iii) were generally poorly answered with few points being made about how the data might be adjusted. Part (iv) was often well answered.

9 Premium reduction mechanism
General point — reducing premiums will reduce profit per case
unless accompanied by actual change in practice of company

Change rating structure/target lower risk business
Age / sex / geography / lifestyle / class of product (stand alone / rider etc) / distribution source / occupation class / anti-selection — mortgage purchase

Will complicate and lengthen sales processes — may reduce new business sales despite cheaper premiums for better risks.
Will lose business for which rates rise

Implement more stringent underwriting procedures
May increase decline rates and lengthen sales processes.
Increased cost of underwriting may outweigh benefits of better risk targeting

Reduce anti selection effect / over-insurance — cap replacement ratio
May not meet customers' needs

Reduce anti selection effect — multiple policies
Reduce over insurance effect — regular policy reviews
Introduces additional costs into process — costs may outweigh benefits
Better training of sales teams to reduce anti selection effects / over insurance

Reduce claims outgo
Reduce claims incidence for a given risk
Increase exclusions applied
Implement more stringent claims control processes
Change basis of claims payment from own occupation to own/suited or to any occupation
Decline more claims
Reputational risk
PRE considerations if claims philosophy not in line with policyholders expectations

Reduce claims severity
Increase deferred period
Introduce linked claims clause to encourage return to work
Offer lower expiry age / term
Reduce escalation of claims paid
Limit duration of claims payment
Implement rehabilitation services to help claimants back to work
Implement an early notification scheme to allow early claims intervention
Offer long-term claimants with high reserves a lump sum in lieu of a regular income

Reduce expense loadings
Streamline processes
Redistribute expenses between policies (e.g. apply using percentage of premium basis so that higher value policies carry higher expenses).
Mismatch of incidence of expenses and allocation between policy sizes. (e.g. risk that larger number of smaller premium policies sold and expenses not covered).

Reduce profitability loading
Expectation of increased volumes offsetting reduced profit per case
Elasticity of demand not accurately understood. Increases in volume not as expected.
Competitor response to lowering premiums results in volumes not increasing as expected.

Enhance retention and reduce lapse assumption

Implement a no claims discount
High lapse rates following claims

Pay less commission
Insufficient commission to incentivise sales
Increase proportion of commission successfully clawed back
Increased administration costs associated with increasing level of clawback may outweigh the benefits of doing so

Investment income
Increase investment income from held funds
Investment return mismatch risk if deviate from fixed interest securities

Need to consider whether any regulatory risk associated with mismatch

Reinsurance
Make effective use of reinsurance arrangements
Make use of tax / solvency arbitrage between direct office and reinsurer
  Risk that taxation position may change
Retain more risk (assume that reinsurers make a profit)
  Increased claims volatility from higher retained risk

Guarantees
Remove/reduce the level of guarantees in the policy
Introduce or extend use of reviewable/renewable premiums

Move to unit-linked format
  Admin costs likely to increase significantly

Relax underwriting procedures
  May lead to 'dodgy' acceptances

Assumptions
Weaken demographic assumptions used in pricing
  Risk of pricing assumptions not being borne out in practice

General points
Changes may not meet customers needs
General issue of costs v benefits

This question was generally poorly answered, with many candidates providing insufficient points to gain many marks (usually in this type of question a valid point will earn half a mark).

END OF EXAMINERS' REPORT