

Subject SA1 — Health and Care Specialist Technical

EXAMINERS' REPORT

September 2008

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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General comments

Candidates who approached the problems, 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. Generally, candidates lost marks by giving insufficient detail in the answers. 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. Usually each valid point in the answer would normally attract 0.5 marks whilst the more basic elements e.g. details in a pricing basis such as age and sex, would attract 0.25 marks.

Marks may be lost where answers are difficult to read.

- 1(i)** The benefits typically available on a Group Private Medical Insurance Plan are:
- Hospital Costs
 - In patient costs
 - At least two from: Accommodation, nursing care, operating theatre, diagnostic procedures, surgical dressings, drugs
 - In-patient physiotherapy
 - Day patient costs/day surgery costs
 - Accommodation for parent accompanying a child
 - Specialist fees
 - Surgeons' and anaesthetists' fees for in-patient or day-care
 - Physicians fees/In-hospital doctor consultation
 - Outpatient fees/costs
 - Specialist consultations
 - Diagnostic tests (radiology, pathology, X-ray, laboratory tests)
 - Physiotherapy
 - Radiotherapy/chemotherapy/scans (any two)
 - Psychiatric treatment
 - Additional benefits:
 - Private ambulance
 - Recuperative care
 - Cash alternatives if the NHS is used
 - Access to private out-of-hours GP and/or telephone helpline
 - Alternative treatments e.g. homeopathy, acupuncture
 - Dependant's benefits
- Conditions may include:
- Excess and limits
 - Exclusions
 - Acute illness only
- 1(ii)** Although National Health Service is free at the point of use to UK citizens there are waiting lists
- There are waits for doctor and hospital appointments, tests and treatments
 - Waiting times for operations for debilitating but non-life threatening conditions can be significant
 - PMI reduces the overall medical treatment times
 - and thus reduce staff absenteeism
 - which reduces overall costs and/or increases productivity
 - Further, some advanced cancer and other treatments may not be available.
 - or they may not be available in all locations
 - Key attractions of PMI include:
 - Choice of hospital
 - Clean hospitals – possible reduced risk of MRSA
 - Choice of time
 - Choice of medical care
 - Quality of accommodation (generally better under private medical insurance so people prefer this alternative)
 - The quality of care may be perceived to be better than in the NHS
 - PMI can provide cover when travelling overseas
 - Key attractions of employer cover

Price

Available to all

Attract and retain staff

Ultimately group PMI cover is offered because the employee values it higher than the cost to the employer

1(iii) Total cost increase includes other factors as well as retail price inflation

The main drivers apart from RPI are:

Treatment quality improves, often due to new technology

There may be increases in the volume of medical services claimed

Additional medical procedures may be added to the existing regime for a patient

New, more expensive, treatment may be substituted for the previous treatment

Other points include:

Premium increases may make up for prior losses or prior burning cost errors

Above RPI rises on existing services e.g. where these are linked to wages paid to staff

Legal issues and costs including malpractice

The cost of the medical provider purchasing the necessary insurance cover is increasing in many countries and may rise by more than RPI, particularly if insurance claims costs are also increasing with increasing court awards

Cost shifting between various providers and payers

Improved diagnostic tests may increase claim incidence

Increased profit margins (e.g. due to a contraction in the number of providers)

Lack of control on provider spending

Drugs/supplies sourced from overseas where inflation exceeds UK RPI

1(iv) Individual

Individual underwriting similar to life assurance comprising:

Proposal Form

Medical Attendant's Report/GP Report

Independent Medical Examination

Other items available such as ECG, chest X Ray, blood tests, urine tests

Special Questionnaires for certain conditions

Telephone underwriting may be used

Individual underwriting is expensive

Individual underwriting is also time consuming and delays acceptance

Underwriting Decision: may use

Ordinary Rates

Postpone

Exclude pre-existing medical conditions

or use moratorium (where pre-existing conditions covered after a period that medics have not been consulted)

Numerical Rating

Decline

When underwriting at point of claim, can also check for non-disclosure

Group

May only use moratorium

MHD for large groups (Medical Health Disregarded)

Have 'actively at work' or self declared health condition

- 1(v)** Self insured
- Advantages
- + any favourable experience will benefit the company
 - + not paying out commission to broker
 - + not having to pay insurer's profit margins
 - + control over all aspects of the benefits (not limited to what is available in the insurance market)
- Disadvantages
- risk remains with the employer hence poor experience will impact directly on the company
 - smooth results
 - lacking expertise in managing group PMI claims
 - claims adjudication expertise required internally
 - claims operations can be sub-contracted to a specialist
 - lack benefit design expertise
 - lacks other services provided by insurers e.g. employee assistance services
 - need to create medical trust
 - otherwise claims become benefits in kind
 - maybe more expensive to self-insure because of admin costs as will not have economies of scale of a large insurance company
 - maybe more expensive to self-insure because less likely to do deals with providers
 - company takes over the employee relationship in this area, which could be problematic when claims are declined.
- 1(vi)** Data
- IFA — Broker
 - Commission basis
 - Employer details
 - Name of employer
 - Location where employees work and numbers
 - and age/sex profile
 - Nature of business
 - Criteria for employees to join the scheme
 - Occupations — mix — professional, supervisory, skilled, semi-skilled, unskilled manual
 - Cover required
 - Basic benefits
 - Guaranteed period
 - Free cover level and treatment of cases above this
 - Commencement date and/or renewal date
 - Aids cover
 - Continuation option
 - Is scheme compulsory?
 - and if not, historical take-up rates
 - Are family members covered? If so ask for further details
 - Has the scheme been previously insured?
 - If so, which insurer and details of cover

Claims experience

Scheme exposure — past 3 years, number of lives, salary roll (split by category if possible)

Current claims details — date of birth, sex, inception date, cause of claim, benefit amounts

Claims paid in last three years (same information)

Rated lives and details

- 1(vii)** Pricing model points (age, sex, occupation) should be chosen to reflect the expected rating structure and profile of new business.
The company may use a cashflow projection technique, but is more likely to price using unit rates.
The calculation should take into account supervisory reserves or the cost of capital.
A set of assumptions will be required to perform the pricing: the starting point is likely to be best estimate.

Morbidity

Need to investigate both claim incidence and claim amounts

Perform an analysis of own company experience over a suitable recent period
2–3 years may be suitable depending on volume of data — credible but homogeneous

Split analysis into major different risk groups e.g. male/female, smoker/non-smoker, location

Adjust data for other possible influences which will affect its immediate usage e.g. past changes in underwriting standards or claims management.

Compare own data with that from other sources over the same time period, home and overseas

Industry data e.g. from insurers' associations

Data from consultants

Population figures and government health statistics

Assess the adjustment needed to relate any published data, which may not be underwritten, to the particular circumstances of the company, its products and target market.

Analyse trends in experience by age, sex, by medical inflation

Investigate the suitability and cost of reinsurance arrangement of various sorts e.g. risk premium, original terms.

Need to investigate potential impact of AIDS/HIV

Further adjustment needed to align different target market with that underpinning the base data.

Need to allow for claim incidence deterioration.

Mortality

May carry out similar analysis to the above, but mortality unlikely to be an issue for a one-year group PMI contract

Data needs to be interpreted with care

Investment

Not really an issue for a one-year group PMI contract

Expenses

Start with company's most recent in-house expense analysis.

Allow for trends if this is an annual exercise

Allow separately for acquisition (sales, marketing and underwriting), servicing and claims costs

Split policy costs into those that are premium related and those that are per-policy.

Need to understand the extent to which specific one-off costs (e.g. establishment overheads) and expected additional costs (e.g. regulation) are to be costed against individual policies.

Degree of detail will depend on size of company and volume of expense information

Inflation may need to be split between manpower costs, future equipment costs and others.

Projected inflation may possibly be measured as difference between government fixed-interest and index-linked securities.

Adopt consistency of assumptions between investment returns and expense inflation.

Need estimate of new business volumes to determine loadings

Commission

Commission as paid. Load directly into premium basis.

May need some adjustment if there are volume-related overrides — thus dependent on new business forecasts.

Lapse or renewal

Analyse experience for PMI products.

Ensure appropriate to the distribution channel.

Adjust data if target market is different from those underlying the above researches.

Further adjust may be needed if past period of data collection was influenced by unusual economic circumstances, or any other abnormal historic situation.

Tax

Make suitable assumptions as to the insurer's current and future tax position.

Make allowance for insurance premium tax

Profit

Include company profit criteria, commensurate with underlying risk of venture — risk discount rate, PVFP, pay back period.

The premium rates should then be varied until the profit criterion is met.

Consider the extent of cross subsidies between model points, with a view to minimising new business mix risk.

Sensitivity analysis

Test the sensitivity of the final premiums to adjustments in the individual assumptions and refine inputs accordingly.

Competitors' rates

Research competitors' office premium rates to assess levels of new products – adjust assumptions then if deemed appropriate.

Assumptions and strategy

The values of the assumptions and the premiums that they produce will reflect the company's current and future strategy

An aggressive growth strategy may require assumptions stripped of margins.

A slow portfolio build strategy may permit more caution in the assumptions.

2(i)

A long term health insurer must hold sums at least equivalent to the Minimum Capital Requirement (MCR)

$MCR = \max(BCRR, LTICR + RCR)$

BCRR acts as a form of minimum guarantee fund

Calculate in accordance with EU Directives

For most UK long term health insurers, 3.2m Euro for proprietary and 2.4m Euro for mutual

LTICR – sum of the insurance death, health, expense and market risk capital components

For Class IV business, e.g. IP, standalone CI and funded LTC business death component is ignored

Accelerated CI may be split between classes

Health risk component is the highest of the premium amount, the claims amount and the brought forward amount

Expense risk capital component is defined as 1% of the adjusted mathematical reserves

Market risk capital component is defined as 3% of the adjusted mathematical reserves

Adjusted mathematical reserves = gross of reinsurance mathematical reserves multiplied by a reinsurance factor

Factor is higher of 85% and the ratio of net of reinsurance mathematical reserves to gross of reinsurance mathematical reserves

RCR is calculated by identifying a range of assets backing the long term insurance liabilities

These are subjected to a series market risk scenarios, specified by the FSA

RCR is the capital shortfall arising in the assets as a result of these scenarios

Scenario 1: A fall in equity values of at least 10% and no more than 25%

Scenario 2: A fall in property values of at least 10% and no more than 20%

Scenario 3: The more onerous of a fall or rise in fixed interest yields of 20% of the long term gilt yield

2(ii)

General

Need to stress at 1 in 200 over one year (or equivalent)

Need to allow for correlations between the risks (e.g. between different asset types)

Need to allow for non-linearity of interaction between risks

Need to allow for the offset from mitigating actions (e.g. risk management under operational risk)

Market and interest risk

Market risk will normally either be modelled stochastically

Or by selecting deterministic scenarios

Reduced market values of investments

Variation in interest rates and the effect on the market value of investments

Lower level of investment income than planned

Possibility of counterparty defaults

Possibility of a severe economic or market downturn or upturn

Currency devaluation

Extent of any mismatch of assets and liabilities, including reinvestment risk

Dramatic change in the spread between a market index of interest rates and the risk-free interest rates

Fixed interest investments should be subject to stresses which allow for changes in the shape of the yield curve

As well as to uniform changes of level

May test changes in volatility of some asset types

Corporate bond defaults

Operational risk

The likelihood of fraudulent activity occurring

Fraud may be internal (staff) or external (policyholder or other party)

That may impact upon the financial or operational aspects of the firm

The obligation a firm may have to fund a pension scheme for its employees

The technological risks that the firm may be exposed to regarding its operations

For example, risks relating to both the hardware systems and the software utilised to run those systems

The reputational risks to which the firm is exposed

For example, the impact on the firm if the firm's brand is damaged resulting in a loss of policyholders from the underwriting portfolio

The marketing and distribution risks that the firm may be exposed to

For example, the dependency on intermediary business or a firm's own sales force

The impact of legal risks

For example a non-insurance related legal action being pursued against the firm

The management of employees – for instance staff strikes

Dissatisfied staff may withdraw goodwill and may indulge in fraud or acts giving rise to reputational loss

The resourcing of key functions

Both in terms of staff in appropriate numbers and with an appropriate mix of skills such as underwriting, claims handling, accounting, actuarial and legal expertise

Disaster scenarios

Impact of human error

The rates of taxation applied, in particular where there is uncertainty over the tax treatment

Unanticipated legal judgements and legal change with retrospective effect
specifically with regard to the impact on mathematical reserves
Need to look at both the potential cost and the likelihood in order to obtain an estimate for an extreme scenario
Use of risk register to aid this assessment
Failure of internal controls
The risk of mis-selling
For example, the number of complaints or disputed claims

Credit risk/Reinsurance risk

Assessing potential credit risk events that may affect the firm's solvency
Allow for the financial effect of non-payment of reinsurance
Considering the likelihood of non-payment of outstanding claims
And reinsurance cover purchased for underwritten risks may not be effective
The financial effect of non-payment of premium debtors such as intermediaries and policyholders
The adequacy of the reinsurance programme
Whether the reinsurance arrangement is appropriate for the risks selected by the firm
Whether it adequately takes account of the underwriting and business plans of the firm
The collapse of a reinsurer or several reinsurers on the firm's reinsurance programme
The subsequent impact this may have on the firm's outstanding reinsurance recoveries
A deterioration in the creditworthiness of the firm's reinsurers, intermediaries, outsourcing or other counterparties
The degree of credit concentration. For example, the degree to which a firm is exposed to a single counterparty or group
The degree of concentration of exposure to reinsurers of particular rating grades
The prospect of reinsurance rates increasing substantially
Possibility that reinsurance is unavailable for certain risks
Greater than anticipated losses from bad debts
Deterioration in the extent and quality of collateral
Failure or default of an outsourcing company
which could lead to renegotiation at a higher price
Default of a distributor who holds premiums
Allow for proportion that can be recovered (not always full amount)
Default of a hedge provider (e.g. derivative)
Use industry data on default rates to help set the required capital amount
The possible exhaustion of reinsurance arrangements, both on a per risk and per event basis;

Mortality/morbidity risk

Mortality and morbidity risks can be divided into three broad categories
Large-scale events, the potential for catastrophic losses
Long-term adverse trends
Year-on-year volatility of non-homogeneous blocks of business
Need to correlate claim rates with economic environment
Sophisticated models could use stochastic modelling of mortality

Large scale events include events which significantly increase claims globally or nationally for a limited time period

Events which significantly increase claims only for the firm (e.g. as a result of multiple claims under a group life or income protection policy).

Significant advances in the treatment of a significant critical illness of the aged (e.g. cancer or heart disease)

The development of a commonly available treatment to significantly delay the normal ageing process could be considered a “large scale event” for a portfolio of annuities or guaranteed annuity options.

Long-term adverse trends are particularly important where policy terms are guaranteed

The ICA should consider firstly, with justification, how any historically observed trends (including cohort effects) might continue, or might continue to accelerate or decelerate.

Extreme adverse events should then be reasonably foreseeable worsenings of the expected continuation or its rate of acceleration or deceleration

It may be necessary to assume different rates or even directions of change for different groups of lives or at different ages

Analyse the potential for mathematical reserves subsequently to prove inadequate compared with the current reserving level

The effect of claims experience being more costly than planned by analysing historic claims experience, volatility and trends in experience

For underwriting risks, the adequacy of the firm's pricing

For example, the firm should be able to satisfy itself that it can charge adequate rates

The uncertainty of claims experience

The effects of a high level of uncertainty in pricing in new or emerging underwriting markets

Due to a lack of information needed to enable the insurer to make a proper assessment of the price of the risk

The geographical mix of the portfolio or whether any geographical or jurisdictional concentrations exist

The appropriateness of policy wordings

For reserving and claims risks, the frequency and size of large claims

Possible outcomes relating to any disputed claims, particularly where the outcome is subject to legal proceedings

The ability of the firm to withstand catastrophic events, increases in unexpected exposures, latent claims or aggregation of claims

Social changes regarding an increase in the propensity to claim and to sue

Other social, economic and technological changes.

The adequacy and sensitivity of the mathematical reserves to variations in future experience

2(iii) Advantages

The Pillar 2 framework requires companies to assess all of the risks to which they are exposed.

It thus allows explicitly for a wider range of risks than Pillar 1.

For example, expense risk, persistency risk, group risk, liquidity risk, pension scheme risk

(note – only give marks here for risks not given in part (ii))

Unlike for the Pillar 1 RCR, the stress tests in the ICA are not prescribed and should be selected as being most appropriate to the specifics of the company. The framework can therefore be considered to be more flexible, and more equitable between companies. (half mark for either “flexible” or “equitable”)

The Pillar 2 calculation is a more sophisticated calculation, that allows the company to take credit for (and thus reduce capital required in respect of): the market consistent present value of future profits on the in-force business company specific diversification benefits that exist between the various risks. The calculation can help companies to raise the profile of risk management processes internally and to embed risk management into their business. It should also improve protection for policyholders.

If a company chooses to disclose the calculation to investment analysts, the information might help to support share prices.

The calculations can be integrated into other parts of the operation, e.g. product design and pricing, calculations of shareholder value.

There are similarities between the ICA framework and Solvency II proposals, so it helps to prepare companies for the introduction of Solvency II.

The confidential nature of the ICA may be a good thing (e.g. information not given to the market)

Disadvantages

The lack of prescription means that a wide range of different approaches could be taken, so the standard of calculation may therefore not be consistent across all companies.

Further, as ICA calculations are confidential, companies are not able to compare with peers.

Some components of the ICA calculation are difficult due to lack of credible data. This is particularly the case for the assessment of operational risks.

Companies may have required specialist assistance to develop and perform the Pillar 2 calculations, in addition to their existing resources.

System changes may have been required, particularly to implement market consistent valuations (e.g. time dependent discount rates).

Overall this increases costs to the company.

These costs could be passed onto consumers in the form of increased product charges, but this would reduce the attractiveness of those products.

The introduction of Solvency II is due in a few years and will replace ICA, so some of the work done to date to implement ICA could be perceived as being “wasted”.

Pillar 2 capital requirements might be higher than under Pillar 1, resulting in less spare capital or a need to raise additional capital – which could be difficult or costly for the company.

The introduction of the Pillar 2 assessment also places an increased burden on the FSA, which has to review all ICAs and issue Individual Capital Guidance.

There might also be a burden on companies' management in having to deal with the FSA to discuss ICG allocations.

The ICG adds uncertainty

- 2(iv)** EU's review to establish a solvency system
Better matches the risks of insurers
Risk-based approach
The framework consists of three “pillars”

Pillar 1 represents the quantitative assessment of minimum capital requirement
Key risks include insurance, market, credit and operational risks
Solvency Capital Requirement (SCR) is the key quantitative assessment
SCR will be based on the capital required to ensure solvency at a 99.5% confidence level over a 1-year time horizon
SCR may not be lower than Minimum Capital Requirement (MCR)
MCR is the lower trigger for mandatory supervisory intervention
Pillar 2 represents the review process
It will address internal control, risk managements and supervisory practices
The review may lead to additional capital guidance
Pillar 3 represents the market discipline
This sets the information disclosure requirements
Information would include public disclosure and non-public disclosure which could include their risks, business overview, governance, solvency valuation basis, capital and risk management

END OF EXAMINERS' REPORT