

**Subject ST1
Health and Care
Specialist Technical**

Syllabus

for the 2009 Examinations

1 June 2008

**The Faculty of Actuaries and
Institute of Actuaries**

Subject ST1 — Health and Care Specialist Technical Syllabus

Aim

The aim of the Health and Care Specialist Technical subject is to instil in successful candidates the ability to apply, in simple situations, the principles of actuarial planning and control needed in health and care matters on sound financial lines.

Links to other subjects

Subject CT3 — Probability and Mathematical Statistics: provides a basic grounding in statistics.

Subject CT4 — Models: covers some stochastic models used in health and care.

Subject CT6 — Statistical Methods: covers some of the mathematical methods relevant for this subject.

Subject CA1 — Core Application Concepts covers the general underlying principles affecting all specialisms.

Subject SA1 — Health and Care Specialist Applications will use the principles developed in this subject to develop a deeper understanding of health and care insurance business and United Kingdom practice.

Objectives

On completion of this subject the candidate will be able to:

- (a) Understand the principal terms in health and care.
- (b) Describe and understand the main types of contract.
 - Critical Illness
 - Income Protection
 - Long Term Care Insurance
 - Hospital Cash
 - Major Medical Expenses
 - Private Medical Insurance

 - main example variations of contracts issued
 - group and individual covers
 - purpose of contracts to insured

- (c) Outline the principles by which health and care insurance contracts are designed and the interests of the various stakeholders in the process.
- customer attraction and clarity
 - insurer control and profitability
 - regulators' satisfaction
 - employer as purchaser
 - other stakeholders: equity, guidance notes, sales processes, IT
- (d) Understand the operating environments in which health and care insurance products and services are traded.
- propensity to purchase versus drive to sell — meeting customer needs
 - methods of sale
 - remuneration of sales channels
 - types of expenses and commission
 - influence of Inflation on benefits, premiums and expenses
 - regulatory environment on sales and reporting
 - professional guidance constraints and opportunities
 - role of IFA in the group risks market
- (e) Explain the likely role of the State in the provision of alternative or complementary health and care protection packages.
- lump sums and regular incomes
 - flat-rated and earnings related
 - different viewpoints for the retired, for the employed, for children
 - simpler methods of funding these outgoes
- (f) Understand and apply the techniques used in pricing health care insurance products in terms of:
- data availability
 - assumptions used
 - equation of value
 - formula approach
 - cash flow techniques
 - group risk assessments
 - options
 - guarantees

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- (g) Understand the nature of the risks facing the insurer.
- data — own experience, insured experience, population data, overseas data
 - claim inception and termination rates
 - claim cost information: by treatment, per diem, length of stay, medical inflation
 - investment performance
 - expenses and inflation
 - withdrawals
 - mix of new business by nature and size of risk and by source
 - volumes of new business
 - guarantees and options
 - competition
 - management of insurer
 - counterparties in distribution
 - counterparties in provision of medical services
 - counterparties in reinsurance
 - regulation and fiscal developments
 - customer service shortcomings / reputational risks
 - internal audit failures/fraud
 - physical risks including IT recovery
 - aggregation and concentration of risk
 - catastrophes
 - non-disclosure — underwriting at outset versus underwriting at claim stage
 - earlier screening/diagnosis
- (h) Understand how insurers use reinsurance to manage their risks and the reinsurance products involved.
- product design and pricing
 - individual risks (large and/or unusual)
 - aggregate risks (accumulation from event or portfolio)
 - other financial risks
- (i) Describe how insurers manage their risks in ways other than reinsurance.
- review actual claims experience against pricing basis
 - service level agreements with out-sourcers
 - competence assessments for key inhouse staff
 - checks on policy data
 - surveys on customer service satisfaction
 - underwriting as gatekeeper and risk analysis
 - claims management — in line with policy conditions and underwriting
 - Policyholders Reasonable Expectations
 - controlling the distribution process

- (j) Describe the principal modelling techniques appropriate to health and care insurance.
- asset liability modelling
 - actuarial models — stochastic models and Monte Carlo simulation
 - objectives and requirements
 - basic features
 - uses (pricing, return and capital, profitability assessment)
 - volatility and sensitivity
 - multi-state modelling in pricing, reserving and reporting
 - comparison of formula and cash flow approach
 - cash flow approach to price setting
 - model office methodology in assessing capital requirements
 - when to use deterministic models (systematic risk assessment)
 - when to use stochastic models (random risk measure)
- (k) Understand the assumptions which are crucial to pricing and valuation.
- morbidity
 - mortality
 - lapses
 - claim amount
 - expenses
 - investment return
 - taxes
 - solvency margins
 - profit requirements
- (l) Understand the purposes for and methodology by which valuation and reserving are performed.
- the role of statistical and individual case estimates
 - the uses of deterministic and stochastic processes
 - purpose of calculation
 - supervisory (solvency, prudent, prospective)
 - experience review (realistic retrospective pricing and conditions)
 - management information (realistic, prospective)
 - embedded values (various)
 - fair valuation (realistic)

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- (m) Understand the purposes and practices of supervisory reporting.
- principles of setting statutory reserves
 - difference in assumptions from pricing
 - sensitivity analysis
 - strength of basis
 - valuation of assets and consistency
 - solvency margins and solvency assessment
- (n) Describe the principles of investment underpinning health and care insurance.
- cash flow and liquidity
 - matching and immunisation
 - fund manager assessment
 - asset valuation
 - effect on product development and pricing
 - treating customers fairly
- (o) Describe the principles by which the experience from a health insurance operation is used to refocus business planning.
- reasons for monitoring experience
 - data required
 - analysis of mortality, disability, claim amount, recovery and withdrawal rates
 - analysis of expenses, sales rates and investment experience
 - analysis of surplus and profit, cause and effect
 - use of results to revise the models used and assumptions underlying

End of Syllabus