Module 9

Decision Analysis for Health Technology Assessment

Module Workbook

2017 - 2018 academic year

DEPARTMENT OF ECONOMICS AND RELATED STUDIES
CENTRE FOR HEALTH ECONOMICS
YORK HEALTH ECONOMICS CONSORTIUM
Module 9 (ECO00064M)

Decision Analysis for Health Technology Assessment

Module Workbook

2017 - 2018 academic year

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STRUCTURE OF THE CERTIFICATE, DIPLOMA AND MSC PROGRAMMES

**PG Certificate**

- **Module 1**
  Basic Economic Concepts

- **Module 2**
  Health Economics: Concepts and Analysis

- **Module 3**
  Introduction to Health Care Evaluation

- **Module 4**
  The Economics of Health Care Systems

**PG Diploma**

- **Module 5**
  Statistics for Health Economics

- **Module 6**
  Further Topics in Economic Evaluation

- **Module 7**
  Assessing the Impact of Medical Technologies on Health

**MSc**

- **Module 8**
  Outcome Measurement and Valuation

- **Module 9**
  Decision Analysis for Health Technology Assessment
STRUCTURE OF MODULE 9: Decision Analysis for Health Technology Assessment

- Unit 9.1: Introduction to decision analysis for HTA
- Unit 9.2: Alternative modelling approaches
- Unit 9.3: Parameterising models
- Unit 9.4: Modelling diagnostics
- Unit 9.5: Uncertainty analysis
- Unit 9.6: Using uncertainty to inform decisions
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Guide to Module 9

Learning aims and objectives

This is a Level 7(M) module and is compensatable in certain circumstances. Please refer to the Programme Handbook for full details about compensation criteria.

Learning aims
To build on Module 3 (Introduction to Economic Health Care Evaluation) and Module 6 (Further Topics in Economic Evaluation), in particular. The module describes the purpose of decision analytic modelling and the methods used to undertake decision analytic modelling.

Learning objectives
Upon successful completion of the module you should be able to:

- Explain and discuss the methodological problems associated with the economic analysis of patient level data carried out alongside randomised clinical trials (RCTs).
- Explain the rationale for decision modelling in economic evaluation and describe its terminology.
- Be able to structure and analyse decision problems using a decision tree and implementation of a Markov model.
- Understand the potential role of other modelling approaches such as individual patient sampling, semi Markov models and dynamic infectious disease models.
- Identify model inputs which are subject to second order uncertainty and select appropriate probability distributions to characterise this uncertainty.
- Interpret the results of a Monte Carlo simulation including cost-effectiveness acceptability curves.
- Understand and implement modelling methods for diagnostic technologies.

In addition to these, you should ensure that you can meet the learning objectives outlined at the start of each unit.
Credits, timing and assessed work

The module is worth 20 credits and should take approximately 200 hours to complete over 12 weeks of study, including the module assessment (see below). The following is a guide to the amount of time you might spend on each unit, although you are of course free to fit your study time to your own circumstances.

  Assessed work piece 1 (deadline 30/4/2018).
  Assessed work piece 2 (deadline 21/5/2018).
  Module assessment 13/6/2018 to 20/6/2018.

The two pieces of assessed are work to be submitted on or before the dates detailed above. They are:

- Assessed work piece 1 is available on Yorkshare.

Please note that programme staff are under no obligation to mark assessed work that is submitted late. This applies to all modules.

Module assessment

The assessment for this module will be by open exam in week 12. The module may be compensated in certain circumstances. Please read the Programme Handbook carefully for regulations regarding assessment and award at MSc level.
On-line learning: Yorkshare

The module is supported by the Yorkshare Academic Suite located at:
https://vle.york.ac.uk.
You can access this using the username and password which will be separately supplied.

Module 9 is delivered using narrative slides, that is, for each unit there will be a set of PowerPoint slides, with an accompanying voice-over presentation. The slides used for each presentation are contained in this workbook.

Reading

The following textbook is supplied to you to accompany your study:


The above text is also available as an e-book from the University of York library.

References to additional reading are provided at the end of each unit. These may be ordered from the University of York’s library or you might find them in your local UK Libraries Plus library. Some of them can be found in the library’s on-line journals pages (via the ‘Library’ link on Yorkshare). If you work in the NHS, your local professional librarian may prove helpful.

Where possible, you are advised to obtain the essential reading cited in the workbook well in advance of each unit.

**Essential reading is marked with a * either in the main body of the text or in footnotes.**
Module 9: Decision Analysis for Health Technology Assessment

Teaching methods

The teaching methods for use in the MSc build on those used in the Postgraduate Certificate and Postgraduate Diploma programmes.

Module 9 comprises six learning units and will be taught over approximately 12 weeks. For each unit there is a section in the workbook which details the learning objectives, copies of the slide-set, two or three exercises for each unit for discussion on Yorkshare and a reading list of compulsory and additional readings. The module also has two pieces of work for assessment, as detailed on page 2.

The teaching methods differ in format from those used in the Postgraduate Certificate and the Postgraduate Diploma programmes to reflect recent advances in the way many distance learning programmes are being delivered. Materials will be delivered using narrated slides: for each unit of each module there will be a set of PowerPoint slides with an accompanying voice-over presentation, which will be available on Yorkshare to download or stream.

You are expected to undertake self-directed, independent study, under the guidance of your tutor. The timetable noted on page 2 provides guidance on how long you are expected to take studying each unit, watching and understanding the presentations, working through the exercises, reading and undertaking the work for assessment.