

## Course 1

# Economic Evaluation and Healthcare Decision-making

Mike Drummond (UK) and Marco Barbieri (Italy)

## INTRODUCTION

The course is designed as a comprehensive introduction to the concepts, methods, and application of economic evaluation in health care. Specific topics that will be covered include: an overview of economic evaluation methods, cost and benefit estimation, economic evaluation using patient-level data, economic evaluation using decision-analytic modelling, and using economic evaluation in healthcare decision-making. Numerous examples and case studies are used to illustrate the main points and considerable emphasis is placed on learning through group work and exercises. There will be ample opportunity for students to discuss any issues or problems they have already encountered in the field of economic evaluation. The course will be of particular benefit to those working in the health care sector who have a need to present a case for funding or reimbursement of particular health care treatments or programs.

## OBJECTIVES

At the end of the course, the student will:

- be familiar with the concepts, methods and applications of economic evaluation in healthcare;
- understand costing methodology and the different approaches to valuing the benefits of health treatments;
- be able to undertake a critical appraisal of published studies;
- be able to perform a discounting calculation;
- understand the limitations of clinical trials as a vehicle for economic evaluation;
- be familiar with decision-analytic modelling approaches, including the construction of decision trees and Markov models;
- appreciate the main issues in the use of economic evaluation in health care resource allocation decisions, including the reimbursement of health technologies;
- have an appreciation of future developments in the theory and application of economic evaluation in health care.

## PREREQUISITES

The course is intended for graduate students who have a background in economics, or the health disciplines. No previous knowledge of economic evaluation is assumed. Some work experience in the health care sector is desirable, but not essential.

## PEDAGOGICAL METHOD

Lectures, interactive exercises, group discussions.

## ASSESSMENT PROCEDURE

There will be a written examination, consisting of a critical appraisal of a published paper. The paper will be distributed on the Wednesday of the course in order to give participants time to read it in advance. Participants will be able to take the published paper into the exam.

## COURSE CONTENT AND STRUCTURE

	<b>Morning</b> (from 9.00am to 11.00am and from 11.30am to 1.00pm)		<b>Afternoon</b> (from 2.00pm to 4.00pm)	
<b>Teaching Days</b>	<b>Content</b>	<b>Method</b>	<b>Content</b>	<b>Method</b>
<b>Monday</b> (from 10.15 am)	Overview of economic evaluation methods	Lectures	Critical appraisal of economic evaluation studies	Exercise and discussion
<b>Tuesday</b>	Cost and benefit estimation, discounting	Lectures	Cost estimation, valuing health outcomes	Exercises and discussion
<b>Wednesday</b>	Economic evaluation using patient-level data, handling uncertainty	Lectures	Analysing data collected alongside a clinical trial	Exercise and discussion
<b>Thursday</b>	Economic evaluation using decision-analytic modeling	Lectures	Decision-analytic modelling	Exercise and discussion
<b>Friday</b>	Using economic evaluation in healthcare decision-making, transferability of economic evaluations	Lectures	Formulary submission exercise, panel discussion	Exercise and discussion

## CURRICULUM VITAE

Dr. **Mike Drummond** is Professor of Health Economics and former Director of the Centre for Health Economics at the University of York. His particular field of interest is in the economic evaluation of health care treatments and programmes. He has undertaken evaluations in a wide range of medical fields including care of the elderly, neonatal intensive care, immunization programmes, services for people with AIDS, eye health care and pharmaceuticals. He is the author of two major textbooks and more than 500 scientific papers, has acted as a consultant to the World Health Organization and was Project Leader of a European Union Project on the Methodology of Economic Appraisal of Health Technology. He has been President of the International Society of Technology Assessment in Health Care, and the International Society for Pharmacoeconomics and Outcomes Research. He is currently a member of the Guidelines Review Panels of the National Institute for Health and Clinical Excellence (NICE) in the UK, and is a Principal Consultant for i3Innovus. His most important publications are:

- **Drummond, M.F.**, Sculpher, M.J., Torrance, G.W., O'Brien, B.J., Stoddart, G.L. (2005), *Methods for the economic evaluation of health care programmes: third edition*. Oxford, Oxford Medical Publications.
- French, M.T. and **Drummond, M.F.**, (2005) *A research agenda for economic evaluation of substance abuse services*. Journal of Substance Abuse Treatment; 29: 125-137.
- **Drummond, M.F.**, Barbieri, M., Wong, J.B. (2005), *Analytic choices in economic models of treatments for rheumatoid arthritis: what makes a difference?* Medical Decision Making; 25(5): 520-533.

**Marco Barbieri, M.Sc.** is a Research Associate of i3Innovus Research Ltd and a Associate Researcher of CRES (Economics and Health Research Centre), University Pompeu Fabra, Barcelona (Spain). He holds a B.Sc. in Economics from the University of Bologna (Italy) and an M.Sc. in Health Economics from the University of York (UK). He spent two years working as a Research Fellow at the Centre for Health Economics, University of York, where he has undertaken a wide range of research including cost-effectiveness modelling in rheumatoid arthritis and cardiovascular disease, study of patient preference measurement and the application of evidence to decision making in health care. He has been involved in several health technology assessments, including systematic reviews of economic evaluations of treatments for bipolar disorder and for second-line advanced ovarian cancer. His particular field of interest is associated with issues of transferability of data and methods between locations, that includes analysis and comparison of pharmacoeconomic guidelines and health technology agencies. His recent publications consist in a comparison of decision models in rheumatoid arthritis, a cost-effectiveness model for influenza vaccination, and an analysis of transferability of cost-effectiveness estimates for pharmaceuticals in Europe.

His most important publications are:

- **Barbieri M**, Drummond MF, Willke R, Chancellor J, Jolain B, Towse A, *Variability of Cost-Effectiveness Estimates for Pharmaceuticals in Western Europe: Lessons for Inferring Generalizability*, Value in Health 2005, Vol 8 (1), 10-23
- **Barbieri M**, Drummond MF, Wong JB., *The cost effectiveness of infliximab for the treatment of severe rheumatoid arthritis in the United Kingdom*, Pharmacoeconomics 2005, 23(6); 607-18
- **Barbieri M**, Drummond M, Puig-Junoy J et al., *A critical appraisal of pharmacoeconomic studies comparing TNF $\alpha$  antagonists for the treatment of rheumatoid arthritis*, Expert Reviews of Pharmacoeconomics and Outcomes research 2007, 7 (6): 613-626