Cycle of seminars organised as part of the PhD Course in Labour, Development and Innovation, Unimore - Marco Biagi Foundation

Visiting professor call

Marco Biagi Department of Economics

Cycle of seminars/lectures: Introduction to Health technology Assessment

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Overview

In periods of austerity and budget constraints, having a formal and standardized way to decide the best way to allocate finite resources is crucial to guarantee sustainable economic development. **Health Technology Assessment (HTA)** is the application of economic principles to allocate health budgets and guarantee principles of equity and universality in universal healthcare systems such as the NHS in the UK. The cycle of lectures will provide principles of HTA, an overview of its main stages and case studies.

The cycle of lectures will be taught in Italian or English depending on the audience.
Teaching material will be in English.

Lecture 1

November 28 from 14.00 to 16.00 – Room laboratorio informatica 2 DEMB,

General concepts of Health Economics and HTA: a general overview

This first lecture will provide an introduction to HTA. Main topics that will be covered:

- Healthcare expenditure, general overview from the UK and other countries
- Need for decision Rules
- Concepts of QALY and DALY
- PICO
- Concepts of ICER and Threshold
- Case studies
- Exercise

Suggested readings:

Readings on case studies will be communicated in advance.

Lecture 2

December 3, from 14.30 to 17.30 – Room 32,

Principles of Economic Evaluation: Introduction to Modelling, decision trees and Markov models

Economic evaluation considers the costs of providing a healthcare intervention (e.g., a new therapy, screening procedure, or drug) relative to its benefits. Randomized controlled trials (RCTs) are considered the highest level of evidence. Therefore, economic evaluation based on clinical RCTs means providing the highest economic evidence for a specific healthcare intervention. However, whenever RCTs are not a feasible option, decision models are methods useful to synthesize information based on observational studies. In this session, the main technical steps and issues to build an economic evaluation are discussed and then tools on how to build a decision analytical model are provided. Decision trees will be treated in depth for short term models and will be mentioned the use of them for the evaluation of diagnostics. A case study using cost-effectiveness of different screening strategies for HCV combining decision trees and Markov models will be shown. The session will focus on concepts and to provide basic tools to build a decision model.

Main concepts that will be covered:

- Cost-effectiveness, dominated and extended dominated strategies.
- Decision models: decision trees and Markov models.
- Decision trees in details and exercise
- Case study combining Decision trees and Markov model: HCV screening strategies

Lecture References:

- Manca, Francesco, et al. "Eradicating hepatitis C: Are novel screening strategies for people who inject drugs cost-effective?." International Journal of Drug Policy 82 (2020): 102811.
- Gray, Alastair M., et al. Applied methods of cost-effectiveness analysis in healthcare. Vol. 3. OUP Oxford, 2010.
- Briggs, Andrew, Mark Sculpher, and Karl Claxton. Decision modelling for health economic evaluation. Oup Oxford, 2006.
- Manca, Francesco, et al. "Cost-effectiveness of sentinel screening of endemic diseases alongside malaria diagnosis: A case study in schistosomiasis." PLOS Neglected Tropical Diseases 18.7 (2024): e0012339.
- Phelps, Charles E., and Alvin I. Mushlin. "Focusing technology assessment using medical decision theory." Medical Decision Making 8.4 (1988): 279-289

Lecture 3

December 4, from 9.00 to 13.00 – Room 32,

Summary of Decision modelling sessions.
Common econometric tools for the evaluation of public health interventions.

This session will end Markov models and discuss/conclude some reasoning of the previous lectures on decision modelling and HTA discussing the exercise/discussion if not done previously.

A separate session will present how econometric tools for policy evaluation are also commonly used in the public health field when RCTs are not feasible. Case studies of evaluation of policies such as Minimum Unit pricing in Scotland and comparative effectiveness of drugs will be shown.

The final part of this session will also introduce the Health Economics and Health Technology Assessment (HEHTA) Department at the University of Glasgow, it will cover HEHTA expertise,

research, grants, teaching activities as well as key contacts.

Lecture References:
- Manca, Francesco, et al. "Pharmacological treatments for alcohol dependence: Evidence on uptake, inequalities and comparative effectiveness from a UK population-based cohort." Drug and Alcohol Review (2024).
- Manca, Francesco, et al. "Estimating the burden of alcohol on ambulance callouts through development and validation of an algorithm using electronic patient records." International journal of environmental research and public health 18.12 (2021): 6363.
- Manca, Francesco, et al. "The effect of a minimum price per unit of alcohol in Scotland on alcohol-related ambulance call-outs: A controlled interrupted time− series analysis." Addiction 119.5 (2024): 846-854.

Student reception hours
- Wednesday 4 December: from 13.30 to 15.00
- Thursday 5 December: from 12.30 to 14.00

Coordinator of the cycle of seminars
Marcello Morciano, Full Professor of Economic Policy,
University of Modena and Reggio Emilia,
"Marco Biagi" Department of Economics