

SPPH 541: Economic Evaluation

School of Population and Public Health • University of British Columbia

Winter Session 2014-2015

Section 002

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Class: Monday, 1:00 pm – 4:00 pm

Location: SPPH 143

Office Hours: By appointment. I am usually at UBC on Mondays and at St. Paul's Hospital on Tuesdays to Fridays.

Background

In their individual roles as managers in health care institutions, administrators in the Ministry of Health or Health Regions, clinicians in primary or tertiary care settings, or as health service researchers, these individuals are increasingly faced with the task of having to justify their decisions with respect to the choice of treatment drug, diagnostic test, and hospitalization strategy according to the cost-effectiveness of the intervention. Health policymakers are equally burdened with the necessity to rationalize funding decisions, i.e. do they represent good choices from a value for money perspective. Economic evaluation of health interventions provides an approach/algorithm for responding to such resource allocation problems and is based on the concept of maximizing the health benefits accruing from finite health care budgets. Economic evaluation is one specialty area within the larger domain of health economics and we will restrict our focus on evaluation of interventions.

Learning Objectives

1. Introduce and familiarize students with the basic concepts and tools of economic evaluation in health services research.
2. Provide students with basic knowledge and tools to undertake critical evaluation of published economic evaluations of new drugs, technologies, and other health interventions.
3. Provide students with a methodological framework with which to undertake the design of economic evaluation protocols.
4. Provide students with an appreciation of the role of economic evaluations in the process of health care resource allocation and health policy making.

Course Format

The course will be a combination of lecture presentations, discussion, in-class exercises, assignments, and individual projects. The lecture presentation topics are as noted below. An active participatory role is expected of each student. There will be specific assignments relating to cost-allocation, contingent valuation, utility measurement, and/or building a simple model. The assignment topic will be finalized the week before it is handed out.

In lieu of a formal midterm or final examination, each student will be required to develop a grant proposal to undertake an economic evaluation. The format and page restrictions for the grant proposal will be posted on Connect and you will need to download this form and complete the various sections. The research proposal will have to be submitted as a complete grant application subject to strict page restrictions as required by a target peer-reviewed granting agency.

Textbook

I recommend that students buy:

Drummond MF, Sculpher MJ, Torrance GW, O'Brien BJ, Stoddart GL. Methods for the economic evaluation of health care programmes. Third edition: Oxford: Oxford University Press; 2005.

This textbook is also available on reserve at the UBC Library.

Student Evaluation

Class participation	10%
Assignments (3)	30%
Critical evaluation of a published article	20%
Individual Project	40%

Course Material

All course material including readings, lecture presentations and assignments will be available via Connect at <http://elearning.ubc.ca/connect/>. For most lectures, readings from the relevant section of the textbook are noted in upper text block with the topic headings. In addition some readings are recommended as optional in the upper text block. Please abide by UBC copyright regulations as outlined in: <http://copyright.ubc.ca/requirements/fair-dealing/>.

Course Topics

1. Economic Evaluation in Health Care: Overview of Basic Approaches (1 session)

- Economic Evaluation Rationale
- Specific Approaches: CEA, CUA, CBA
- Measuring Costs
- Outcome Measures
- Viewpoints / Perspectives
- Sensitivity Analysis
- Resource Allocation with Fixed Budgets

2. Measuring Costs and Discounting: Overview of Concepts (2 sessions)

- Economic Costs
- Cost Identification and Calculation
- Fixed, Variable and Total Cost
- Average Cost vs. Marginal Cost
- Costing Methods
- Case-Mix / Diagnosis Related Groups
- Comparison of Costing Methods
- Shadow Pricing
- Indirect Costs
- Valuation of Indirect Costs
- Perspectives
- Net Present Value
- Annuitization
- Capital Allocation
- Allocation of Overhead
- Valuation of Economic Costs
- Opportunity Costs vs. Accounting Costs
- Discounting Theories
- Discount rates and SDR
- Principles Underlying Discounting
- Inflation and Fisher Equation
- Timing Patterns of Payment

3. Measuring Costs: Practical Applications (1 session)

- Developing a Fully Allocated Hospital Cost Model: St. Paul's Hospital Cost Model
- Simultaneous Allocation
- Inverse Matrix Method
- Cramer's Rule Method
- Micro Costing Exercise

4. Measuring Health: Economic Approaches to Measuring Health Outcomes (1 session)

- Axioms of Choice
- Expected Value
- Attitudes towards Risk
- Health Utility
- Feeling Thermometer or Rating Scale (RS)
- Standard Gamble
- Time Trade Off
- Risk Preferences

- Multi-attribute Utility classification “MAUT”
- QALYs
- Healthy Years Equivalent
- Types of HRQoL measures
- Validity: Signal and Noise

5. Measuring Health: Willingness to Pay Approaches Towards Valuation of Health (1 session)

- Willingness to Pay Approaches
- Human Capital Approach
- Societal Benefit/Cost Analysis
- Valuing Human Life: Economic Models
- Implications of WTP
- Revealed Preferences
- Contingent Valuation (CV)
- CV Design Considerations
- Discrete Choice Experiments (DCE)
- Random Utility Model
- Conjoint Models
- Adjusted Human Capital Valuation

6. Economic Evaluation Alongside Clinical Trials (2 sessions)

- Statistical Analysis of Patient-Level Data
- Case Study Exercise
- Alternative experimental designs
- Internal and External Validity
- Limitations of Clinical Trial data for Economic Models
- Surrogate Versus Clinical Outcomes
- Observational Data and Longitudinal Registries

7. Decision Analysis Modeling: Estimating Probabilities, Utilities and Building Trees (1 session)

- Elements of Decision Analysis
- Structuring the Problem in Decision Analysis
- Decision Analysis with Costs and Outcomes
- Exercise based on Surgery Example
- Generating Random Variables
- Monte Carlo Simulation
- Cost effectiveness Acceptability Curves

8. Applications of Economic Decision Analysis: Alternative Approaches (1 session)

- Decision Tree versus Markov Models
- Two Period Decision Tree Exercise
- Multi-period Markov Model Exercise
- Probabilistic Exercise

9. Economic Evaluation Presentation and Guidelines (1 session)

- Reporting Formats
- Detsky, St. Adle, CCOHTA, CADTH Guidelines
- Evidence of Guideline Impact: National and International Comparisons