I. Course Description

This course is intended to give students an overview of the theory and applications of cost-effectiveness analysis, cost-utility analysis and related forms of economic evaluation directed at interventions in the health care sector. The topics to be covered are: the theoretical basis for this analysis from economics, comparison of the various forms of economic evaluation, measures of costs and related controversies, measures of outcomes including health status and health-related quality of life, assigning monetary values to outcomes, the value of a human life and of a quality-adjusted life year, discounting, uncertainty in cost-effectiveness analysis, Markov Models, international policy comparison, the question of whose preferences should policy be based on and publication bias. Lectures will be also given on the statistical methods involved with cost function models and discrete choice models for determining quality of life weights. Students will also learn TreeAge Pro, a decision-analytic software package, and study a number of classic applications from the literature in depth.

The course occasionally uses conventional microeconomic analytical and statistical tools. While it is not required, it is recommended that students have taken a microeconomics course. Nevertheless, because not all have taken such a course, one lecture is spent at the beginning of the course familiarizing students with this content.

II. Course Prerequisites

There are no course prerequisites, although a course in microeconomic theory is recommended.
III. Course Goals and Objectives

1. The student will be able to understand cost and effectiveness measures; to distinguish among cost-effectiveness, cost-benefit, cost-utility, cost analyses and other forms of economic evaluations; know the advantages and disadvantages of each approach; and understand the various perspectives that can be taken.

2. The student will know the recommendations of the US Panel on Cost-Effectiveness and Medicine.

3. The student will have an appreciation for the controversies in the field: the costs of consumption in additional life years, productivity costs, discounting, choice of respondents, etc.

4. The student will learn and be able to apply TreeAge Pro decision analytic software in a series of exercises, one of which will ask the student to replicate the analysis of an existing study from the literature.

5. The student will understand and be able to apply Markov analysis and other modeling techniques.

6. The student will be familiar with the statistical issues of cost-effectiveness analysis and a menu of approaches for evaluating the uncertainty associated with point estimates of the incremental cost-effectiveness ratio.

7. The student will be familiar with a number of the important studies from the cost-effectiveness analyses literature.

IV. Methods of Instruction and Work Expectations

The course is mostly lecture and discussion of readings, with quizzes and homework. A Moodle site has been established at https://ay13.moodle.umn.edu/course/view.php?id=11259

V. Course Text and Readings


4. Required papers are available at the library’s electronic journals or directly through the internet.

VI. Course Outline/Weekly Schedule

<table>
<thead>
<tr>
<th>Date</th>
<th>Topic</th>
<th>Readings (* = optional reading)</th>
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1/27 Making Collective Decisions

**Quiz #1**


1/29 Overview of Economic Evaluations

Gold et al., Ch. 1, pp. 3-24.

Drummond et al., Ch. 2, pp. 7-26.


2/3 Application 1: Decision Analytic Modeling

**Quiz #2**

Drummond et al., Ch. 9, pp. 277-295.


25 TreeAge Pro 1: Decision Trees and Cost-Effectiveness Analysis

**Jordan Hinahara**

The readings will be the sections of the TreeAge Pro User’s Manual for 2014 corresponding to the material covered in class. They will be announced in class.

Please remember to bring a laptop to class.

2/10 Measuring Costs in Cost Utility Analyses
Gold et al., Ch. 6, pp. 176-213.
Drummond et al., Ch. 4, pp. 55-101, note that pp. 73-78 will be covered later in the course.


2/12 Cost Issues in Cost Utility Analyses: Survivor Consumption

**Quiz #3**


2/17 Application 2: Reflecting Uncertainty in Economic Evaluations

Gold et al., Ch. 8, pp. 247-275.
Drummond Ch. 8, pp. 247-275.


2/19 TreeAge Pro 2: Sensitivity Analysis

**Jordan Hinahara**

The readings will be the sections of the TreeAge User's Manual for 2013 corresponding to the material covered in class. They will be announced in class.

Please remember to bring a laptop.
Cost Issues in Cost-Utility Analyses: Time Costs and Costs of Informal Care

Quiz #4


Assessing Effectiveness in Cost-Effectiveness Analyses

Homework #1 due

Gold et al., Ch. 5, pp. 135-175.

Drummond et al., Ch. 5, pp. 103-136.


Assessing Outcomes in Cost-Utility Analyses

Gold et al., Ch. 4, pp. 82-134.

Drummond et al., Ch. 6, pp. 137-209.


Important Quality-of-Life Questionnaires

Quiz #5

EuroQol (EQ-5D):


Health Utilities Index (HUI3):


Quality of Well-Being Index (QWB):

*Quality of Well-being Scale—Self Administered (QWB-SA) questionnaire.


Short Form 36 (SF-36) and the SF-6D


*Bult, Roelf, Maria G. M Hunink, Joel Tsevat, and Milton C. Weinstein. Heterogeneity in the Relationship Between the Time Tradeoff and Short Form-36 for HIV-Infected and Primary Care Patients, Medical Care vol. 36, no. 4, April 1998, pp. 523-532.


3/10 Catch up and review

Homework #2 due

3/12 Midterm Exam

Spring Break