HS 249G: Techniques in Medical Technology Assessment:
Decision Analysis and Cost-Effectiveness Analysis

Fall 2002
Tuesdays, 8-11 A.M.
Room 31-235 CHS

Instructors:

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Required Textbooks (available in UCLA Health Sciences Store):

Edith Stokey and Richard Zeckhauser, *A Primer for Policy Analysis*, Norton and Co., 1978.
Harold C. Sox et al., *Medical Decision Making*, Butterworths, 1988.
Peter Muennig, *Designing and Conducting Cost-Effectiveness Analyses in Medicine and Health Care*, Jossey-Bass, 2002.

DATA 4.0 Software for Decision/Cost-Effectiveness Analysis, Student Version, and Manual. (Available from Treeage, Inc., web site: https://server.treeage.com/epurchase/orderpro4.htm. You can download the student version directly for $40, which entitles you to a 10-month license.)

Students are expected to come to class prepared. All material should be read *before* the class session in which it will be discussed.

Recommended Textbooks:

Marthe Gold et al. (eds.), *Cost-Effectiveness in Health and Medicine*, Oxford University Press, 1996.

Prerequisites:

HS 200A,B (or equivalents). Proficiency in MS Excel, or equivalent spreadsheet program.

Learning Objectives:

Students should leave this class with proficiency in constructing an appropriate a decision analysis probability tree, valuing health outcomes, and conducting cost-effectiveness and cost-utility analyses when evaluating a broad spectrum of medical technologies.

Evaluation Criteria:

Students will be given three assignments: one involving decision analysis, and one involving cost-effectiveness, and a final paper applying both techniques to a problem of interest selected by the student. Final grades will be calculated as follows:

Decision-analysis problem set:	25% (due 11/5)
Cost-effectiveness problem:	25% (due 12/3)
Final paper:	40% (due 12/13)
Classroom participation:	10%

Schedule of Classes

Dr. Keeler will teach sessions 1-4 dealing with Decision Analysis; Dr. Kominski will teach sessions 5-7 and 9; both Drs. Keeler and Kominski will teach the last session.

Session	Date	Topic
1	10/1	**Medical Technology Assessment: Why Is It Necessary?** **Policy Analysis, Models, Math Preliminaries, Numeracy** *Readings:* Stokey and Zeckhauser, Chap. 1, 2
2	10/8	**Decision Analysis – Simple Trees and Imperfect tests (Bayes' Theorem)** *Readings:* Sox, Chap. 1, 2, 3, 4, 6; Optional: DATA Manual Part I; S & Z Chap. 12 201-210
3	10/15	**Probability (cont.) – EVI, Triage, ROC, Subjective and Objective Probability** *Readings:* Sox, Chap5, + pp. 239-260, 271-274; Optional: DATA Manual, Chap. 3-6, 9
4	10/22	**Valuing the Outcomes of Care for Patients** Stocks and flows, survival and long-term mortality, assessing Health-Related Quality of Life (HRQOL) factors. *Readings:* Stokey and Zeckhauser, Chap. 4, Sox, Chap. 7, 8; Optional: DATA Manual, Chap. 19, 25, 32
5	10/29	**Overview: Cost-Benefit, Cost-Effectiveness, and Cost-Utility Analysis** *Readings:* Muennig, Chap. 1; Gold, Chap. 1-3
6	11/5	**Measuring Costs** *Readings:* Muennig, Chap. 6; Gold, Chap. 6
7	11/12	**Conducting CEA/CUA Using Large-Scale Administrative Data** Guest Lecture
8	11/19	**Time Preference and Discounting; Setting Up a Cost-Effectiveness Problem** *Readings:* Olsen JA, On what basis should health be discounted?" *Journal of Health Economics* 1993;12:39-53; Bleichrodt H, Gafni H, Time preference, the discounted utility model and health, *Journal of Health Economics* 1996;15(1):49-66; DATA Manual, Chap. 8, 20, 21; Gold, Chap. 7.
9	11/26	**Valuing the Outcomes of Care – QALYs and Preference-Weighted HRQL Measures** *Readings:* Muennig, Chap. 8, 9; Gold, Chap. 4
10	12/3	**Using C/E Ratios; Dealing with Uncertainty; Critiques of DA, CEA; How to Identify a Good DA and CEA** *Readings: To be distributed*