

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

Fall 2007
Tuesday-Thursday 10-12
Room 41-268 CHS
Workshops in Computer Lab

Instructors:

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Required Textbooks (available in UCLA Health Sciences Store):

- Myriam Hunink and Paul Glasziou, *Decision making in Health and Medicine*, New York: Cambridge University Press, 2001.
- Peter Muennig, *Designing and Conducting Cost-Effectiveness Analyses in Medicine and Health Care*, San Francisco: Jossey-Bass, 2002.

Optional

- TreeAge Pro Suite Student Version software for decision/cost-effectiveness analysis (This program is available in the student computer lab. Also available from Treeage, Inc., web site: <http://server.treeage.com/treeagepro/purchase/addProd.asp?rdo4=annual&rdoNL4=No&hdnProdId=4&lstSelect=3&lstStud=1&hdnShipType=download&getManual=No> (You can download the student version directly for \$xx, which entitles you to a 12-month license.

For Reference:

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

Students are expected to read all assigned material *before* the class session in which it will be discussed, Readings supplementing the texts are on the class website.

Prerequisites: HS 200A,B (or equivalent).

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 five 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:	15% (due 11/1)
Tree age problems	15% (due 12/6)
Paper Critique	10% (due 12/6)
Final paper:	50% (due 12/13)
Classroom participation:	10%

Some instructions for term papers: Please put your name on the material you submit.

We will hand out a template for the term paper, and the structured critique. Students should turn in a half page letter of intent for the term paper on November 1 for feedback on whether it will work. Students will turn in their draft term paper by 12/3. Each student will give a structured critique by 12/6 of another student's paper, and turn in the final version by the end of the course 12/13.

Schedule of Classes

Session	Teacher	Date	Topic
1	Keeler	9/27	Technology Assessment, Math Preliminaries, Numeracy <i>Readings:</i> Hunink Ch 1,2; Stokey and Zeckhauser Ch 1 p7-21.
2	Keeler	10/2	Expected Value Decision-making – Simple Trees <i>Readings:</i> Hunink Chapter 3.
3	Keeler	10/4	Probability and Imperfect Tests (Bayes' Theorem) <i>Readings:</i> Hunink Chapter 5.
		10/9	No class
4	Spiegel	10/11	Decision Tree Nuts and Bolts: Construction, Probabilities, Base-Case Analysis <i>Readings:</i> Hunink Chapter 3,8. Muennig Chapter 5.
5	Spiegel	10/16	Workshop #1: Using TreeAge to Build and Analyze Decision Trees <i>Reading:</i> In-Class Tutorial Optional: TreeAge Manual
		10/18	No class
6	Spiegel	10/23	Workshop #2: More Examples of Decision Analysis. More help with Tree age. Muennig, Chapter 7.
7	Keeler	10/25	Valuing Outcomes I: Mortality, Stocks and Flows <i>Readings:</i> Stokey and Zeckhauser Chap. 4 (handout);
8	Keeler	10/30	Valuing Outcomes II: Eliciting Individual Preferences, HRQL <i>Readings:</i> Hunink Chap 4; Muennig Chap 8 (and pp. 132-133); Gold Chap 4
10	Spiegel	11/1	Introduction to Cost-Effectiveness Analysis, Framing a research problem. <i>Readings:</i> Muennig Chap 1; Gold Chap 1,3. Optional: Detsky AS, Naglie IG “A Clinician’s Guide to CEA.” <i>Ann Intern Med</i> 1990; 113: 147-154.
		11/6	<i>No Class/ APHA Meeting</i>
10	Spiegel	11/8	Incremental cost –effectiveness analysis I: Resource Allocation & Shopping Spree Problem. Hunink Chapter 9 p 277-304. Doubilet NEJM 1986
11	Spiegel	11/13	Workshop # 3 Incremental Cost-Effectiveness Analysis II: Competing Choice Problem, Strong & Weak Dominance, Treeage sensitivity analysis <i>Readings:</i> , Weinstein MC et al. “Recommendations of the Panel.” <i>JAMA</i> 1996; 276:1253-1258 and 1339-1341.
12	Keeler	11/15	Measuring and Valuing Costs <i>Readings:</i> Muennig Chapter 6; Gold Chapter 6 Hunink 254-266
13	Keeler	11/20	Time Preference and Discounting Hunink 272-276 Gold Chapter 7; Redelmeier DA et al. “Time preference in Medical Economics: Science or Religion?” <i>Med Decis Making</i> 1994; 14:310-313
		11/22	<i>No Class/Thanksgiving</i>
14	Keeler	11/27	More on ICERs, Handling Uncertainty & Sensitivity Analysis <i>Readings:</i> Gold Chapter 8; additional articles to be assigned
15	Spiegel, Keeler	11/29	<i>In class office hours for working with Treeage, or other aspects of term paper.</i>
		12/3	First draft due Monday noon for critique by classmate. No class Tuesday.
16	Keeler	12/6	Critical Evaluation of CEA Studies. 1 page critique due. <i>Readings:</i> Chiou, 2003; Wang, Shepard