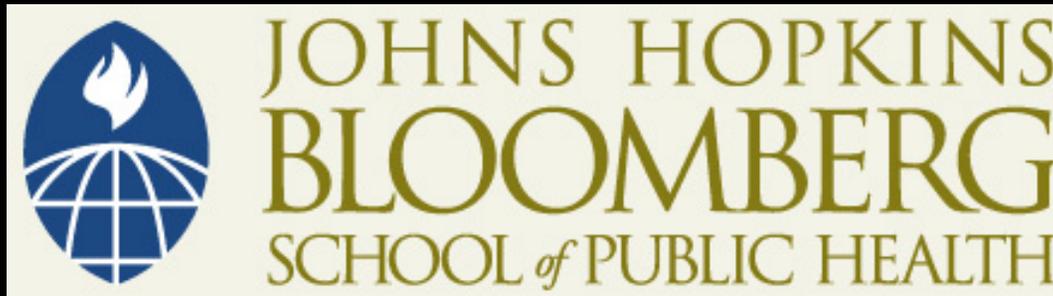


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Concepts in Economic Evaluation

Lecture 1

Kevin Frick

THE FOLLOWING WILL BE
DISCUSSED BETWEEN 1:30
PM AND 2:50 PM

Is Economic Evaluation as Exciting as 24?



- It can be
 - Have to pull together lots of pieces of information and perform careful analysis
 - Results are not always obvious in advance
 - New information can substantially change results and their interpretation
 - Results guiding treatment guidelines and reimbursement decisions can affect millions
- What do we need to make this a reality?
 - Instructor investment and student participation

Outline

- Introductions
- Motivations for taking the class
- What does “economic evaluation” mean
- Areas of interest in applying economic evaluation
- Myths about economic evaluation
- Types of economic evaluation
- Reasons for different types

Instructor

- Formal training—economic theory and health services research
- Teaching economic evaluation—10 years
- Research using economic evaluation—large part of what I do
- Objective—share my knowledge and make learning about economic evaluation as interesting as possible
- Interesting fact—I play the piano, guitar, and electric bass and my music was used as background for my online course

Motivations for Taking the Class

- Particular skill
- Particular clinical area
- Read
- Critique
- Use results
- Be part of a research team
- Conduct analyses

What Does Economic Evaluation Mean?

- Do not confuse evaluation and analysis
- Evaluation involves placing a value on things
 - Motivating a re-allocation of resources
 - Cost-benefit or cost-effectiveness
- Separate from economic analysis in which economic theories are tested and predictions of change are made in response to resource re-allocation

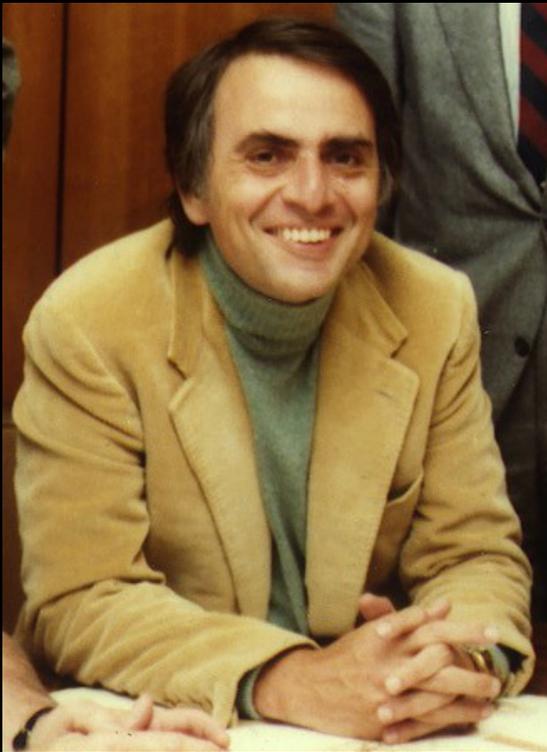
Myths

- No science
- All driven by assumptions
- Meant to take over decision making

No Science

- Actually there are all kinds of science involved, although some of the science may already have been conducted
- Quality of the end product is only as high as the weakest science involved
- Developing science of “cost-effectiveness”
- Field could benefit from scientists with “presence” who can make the topic understandable to large audiences

Scientists Who Brought Their Sciences to Large Audiences



Carl Sagan

Stephen Hawking



Results are Driven by Assumptions

- Almost all economic evaluations involve some modeling
 - Even when linked to a randomized trial
- This is a distinct possibility that assumptions could drive results
 - Peer review process is intended to eliminate this possibility
 - Requires that journal editors know of reviewers that have the capacity to critically evaluate economic evaluations and that reviewers with such capacities are willing to perform reviews
 - Ideally, reviewers would include one CEA expert and one clinical or intervention relevant expert

Opportunities for Peer Review— Not Just at the Manuscript Stage

- Many opportunities for review and participation by an economic evaluation expert
 - Seeking funding
 - Planning research
 - Conducting research
- Professional responsibilities
 - CEA expert
 - Learn something about clinical or intervention area
 - Other investigators
 - Need to learn something about economic evaluation
- All researchers must remember that economic evaluation results may eventually be used for advocacy but that, first and foremost, this is a science

Economic Evaluation Experts Want to Take Over Decision Making

- Tears for Fears sang “Everybody Wants to Rule the World”
 - Do economic evaluation experts?
- Isaac Asimov wrote a story in which computers were able to predict so well that by choosing one US citizen to survey a computer could predict all winners in all elections in November
 - Do economic evaluation experts seek this level of policy determination based on results of a computer program?

Economic Evaluation and Decision Making

- Occasionally someone will suggest a “larger than life” role for economic evaluation
- A few economic evaluation limitations
 - Not able to quantify decision makers’ or public’s feelings regarding equity and distribution of benefits
 - Not able to capture any sense of family quality of life
 - Focused on health-related quality of life when QOL is driven by a lot more than health
- Economic evaluation provides structured information but is not intended to be the only information used in decision making

Types of Economic Evaluations

- Cost
- Cost minimization
- Cost consequence
- Cost effectiveness
- Cost utility
- Cost benefit

Concreteness of constructs being measured



Immediate impact on decision making

Aspects of Economic Evaluation

- Concrete constructs
 - Makes process and results easy to understand
- Impact on decision making
 - Some analyses directly imply a decision while others leave decision maker to individually and subjectively weigh outcomes

Cost Analysis

- Basic assessment of resources being used
- Concreteness of constructs
 - Resources valuation is a concrete construct (except for individuals' time)
- Decision making
 - Unless only criterion is fitting within a budget constraint it does not help

Cost Minimization

- Choose least costly outcome
 - Among options with similar outcomes
- Concreteness of constructs
 - Similar to simple cost analysis
 - Outcomes do not need to be very concrete since (however they have been defined) they are similar
- Decision making
 - Immediate impact for a decision among a limited set of alternatives
 - No basis for comparison outside that set

Cost Consequence

- Describe costs and consequences
- Concreteness of constructs
 - Resources similar to all previous
 - Outcomes left in natural units
- Decision making
 - If there are multiple outcomes of interest this method provides no summary of the results and the decision making must apply subjective weights

Cost Effectiveness

- Compare extra costs with extra outcome
- Concreteness of constructs
 - Have one critical outcome of interest
 - Can leave it in natural units
- Decision making
 - More focused
 - Compare costs to a single outcome
 - Still no capacity to compare interventions or treatments with different outcomes without subjective weighting

Cost Utility

- Compare dollars and quality adjusted life years
- Concreteness of construct
 - Quality of life is not concrete
 - Health utility is one step less concrete
 - Health utility over time with need to compare sequence of values is very abstract
- Decision making
 - In theory can compare any interventions
 - However, must still decide what a QALY is worth

Cost Benefit

- Place a dollar value not only on resources but also on benefits
- Concreteness of constructs
 - Placing a dollar value on health and life requires a lot of abstraction
- Decision making
 - Leads directly to an indication of the most and least favorable comparisons of costs and benefits