Economics Concepts Overview

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Section A

Course Overview
Course Objectives

To pick up and read any cost-effectiveness paper that is not a strictly methodological study

To critically interpret the relative quality of studies in the literature

To indicate where new research fits into the larger literature and what additional studies would be necessary in order to use to make a difference in policy
How We Will Achieve the Objectives

These objectives can be achieved even with no economics background

We will need to . . .

- Provide the economics background
- Discuss recommendations on doing economic analyses
- Discuss the process of performing economic analyses
- And read through and discuss examples in the literature
Limitations of the Objectives

At the end of this course . . .

★ Students should be in a position to discuss and contribute to a new economic analysis, but you will want to consult with a cost-effectiveness specialist before trying to do your own study.

Generally, one wouldn’t expect to lead a study in an area after taking a single two-credit course.
Overview of economic concepts

Recommendations for doing a standardized cost-effectiveness analysis

Decision rules

Quality adjusted life years
Course Outline

One-year cost calculations

Multiple-year cost calculations

Putting it all together with examples and discussion
Economic Evaluations Done by the Instructor

- Surgery for dysfunctional uterine bleeding
- Acupuncture for osteoarthritis of the knee
- Temporomandibular joint disorder treatment
- Screening for visual acuity problems in nursing homes
- Screening for glaucoma
- Screening for amblyopia or pediatric eye conditions

Continued
Economic Evaluations Done by the Instructor

Treatment of trachoma in developing countries

Community-based programs to avoid very low birth weight births, to encourage breastfeeding of longer duration, and to encourage older adults to volunteer
Section B

What Economics Does and Doesn’t Provide
Theoretical Underpinnings

Basic Microeconomics

- Individuals’ value of time
- Employers’ value of time
- Tradeoffs individuals are willing to make

Continued
Guidelines Come from Various Sources

- Social welfare
- Justice
- Sometimes convention
- Sometimes pragmatism
What Economics Does Provide?

Paradigm

Explicit method of calculating costs and value of benefits of different health related research, policy, or provision alternatives

Explicit method of comparing the calculations in the previous step
What Economics Doesn’t Provide?

Means of determining in all cases whether or not the new alternatives are preferred to the older alternatives

Indication of what should or should not be valued and what things should be valued more than others

Answers for resource allocation process without political and other considerations
Externalities

Costs borne directly by employers, coworkers, other family members, and others in society

More Broadly . . .

- An intervention can affect the environment, the criminal justice system, the education system, etc.
Count what happens to everyone and not just intended recipient of a program

Their existence provides a fundamental economic reason for government intervention
Examples of Externalities

- Smoking
- Loud music
- Public transit
- Pfisteria
- Litter
- Infectious disease exposure
Five Steps in a Larger Policy Setting

1. Identify problem
2. Brainstorm potential solutions
3. Predict outcomes
4. Value outcomes
5. Choose policy

Economics has particular value for steps four and five.
Types of Economic Evaluation

- Cost of illness
- Cost minimization
- Cost-effectiveness
- Cost-utility
- Cost-benefit
Cost of Illness

- Medical care for prevention
- Medical care for treatment
- Social services for rehabilitation
Productivity loss

- Prevention
- Treatment
- During rehabilitation
- From decreased workplace productivity as a result of the disease and death
Examples of Cost of Illness

What does cancer cost the United States?

What does heart disease cost the United States?

What does blindness cost the world?
Examples of Cost of Illness

Just because something has the highest cost of illness does not imply that it necessarily should have the most resources directed toward research or cure

* Depends on how much it will cost to do something about it
Known and fixed objective

At least two ways of achieving the objective

Calculate the cost of the different methods of achieving the objective

Determine which alternative costs the least
Goal of eliminating incident cases of polio

★ *Is it achievable?*
★ *If so, should we continue mass vaccinations or use targeted vaccination policies?*
These studies are difficult because they don’t focus on partial outcomes

- Need a high degree of certainty that outcome can be obtained or else these studies are not particularly helpful
Cost-Effectiveness

Compare costs of at least two alternatives

Compare effects of at least two alternatives

- Generally best if there is a single primary effect

Compare difference in costs with difference in effects

Continued
Outcomes can remain as clinical or even intermediate outcomes

- Example—dollars per case of blindness averted or dollars per migraine avoided
Suitability of Cost-Effectiveness Studies

There is a single outcome associated with a condition

There is not enough information to assign a value to the outcome

- Difficulty of asking nursing home residents about the quality of their own lives
Cost-effectiveness with a twist

Outcome is quality adjusted life year

Quality adjusted life year combines morbidity and mortality
Suitability of Cost-Utility Studies

There are morbidity and mortality effects

There are multiple types of morbidity effects

Health related quality of life is the primary outcome of interest in the first place
Value everything in terms of dollars

- *Not just costs avoided*

Subtract costs from dollar value of benefits to obtain a measure of net benefit

Unique ability to determine whether or not a program is better than existing alternatives
Value everything in terms of dollars

★ Not just costs avoided

Subtract costs from dollar value of benefits to obtain a measure of net benefit

Unique ability to determine whether or not a program is better than existing alternatives
Section C

Supply and Demand
Maximize utility

Subject to a budget constraint
In general, make tradeoffs between different goods and as one gets more of something each additional unit is worth less

★ *First Orioles game attended brings more enjoyment than 10th*
★ *Obtain each good until the incremental/marginal expense is just equal to the value an individual gets from the good/service*
Health has both aspects of a consumption good and an investment good

- **Consumption**
  - Individuals enjoy having good health

- **Investment**
  - Individuals in better health are better able to learn, work, increase skills, etc.
Policy makers need to decide what to research, what treatments to make available, and how much to spend on health care
Note the decreasing willingness-to-pay with greater consumption of annual preventive visits.
Where Does the Data Come From?

Willingness-to-Pay Data Comes From . . .

Observation of market behavior

- *Time spent*
- *Money spent*
- *Combined value of two types of resources*
  - Dollar value of time related to (potential) compensation (wage, after tax and plus benefits)
Where Does the Data Come From?

Willingness-to-Pay Data Comes From . . .

Contingent market valuation questionnaires

- Ask individuals what they are willing to pay
Examples of Using Market Behaviors

Trichiasis surgery in the Gambia
★ Monetary price paid for transportation
★ Time cost

Trichiasis surgery in Vietnam and Nepal

Time for cancer screenings in Australia

Generally WTP is assumed to be greater than the cost of illness
Examples Using Questionnaires

Willingness to pay for second treatment with Zithromax for trachoma in Tanzania

Willingness to pay for trichiasis surgery in Tanzania

Willingness to pay to decrease the waiting time for cataract surgery

Willingness to pay for more specific glaucoma screening test
Willingness-to-Pay and Demand Curves

(Approximation)
Add up willingness-to-pay “horizontally”

★ Answer the question—how many people will be willing to pay a certain price?

Adding up to a population level helps to answer the following question:

★ How much more value will a population of individuals assign to the goods in question than the price that is paid by all consumers for all purchased?
Producers

Assumed to maximize profits

Produce at a point at which the cost of the next unit produced will be at least as large as the cost of the last unit produced

Health policy does not always consider the fact that changes in policy will affect both consumers and producers
Societal Supply and Demand

Price

Quantity

S

D
Perspectives

Whose costs and whose benefits matter

- *Societal*
- *Government*
- *Patient*
- *Insurer*
Marginal

- Increase the size of a program but do not change the program itself
  - Measure costs and effects

Incremental

- Difference in costs and effects among two programs
- Key is the comparison of multiple programs
CEA in Policy Making

CEA provides useful information but does not provide all the information that is needed

- **Broad tradeoffs**
- **Does not capture some elements of fairness, justice, and feasibility**
- **Each decision maker can formulate his or her own decisions based on his or her own values**
Why Has CEA Not Been Used?

Lack of standardization

- Perception of being driven by assumptions

Lack of centralized decision making

Some decisions in the U.S. made at least citing evidence

Is information presented in useful way?

Should we focus on policy or individual patient?