



Economic Evaluation of Health Programs

Presented by:

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Learning Objectives

1. Identify the six major types of cost-outcome analysis.
2. Distinguish among different evaluation approaches, including cost-effectiveness analysis, cost-utility analysis, and cost-benefit analysis.

Types of Evaluation Approaches

- Cost description
- Cost analysis
- Outcome description
- Efficacy or effectiveness evaluation
- Cost-outcome description
- Cost minimization analysis
- Full economic evaluation

Cost Description

- Only costs of a single health program are examined.
 - Not comparative
 - No examination of outcomes

Cost Analysis

- Only costs of two or more health programs are compared to each other.
 - Comparative
 - No examination of outcomes

Outcome Description

- Only outcomes of a single health program are examined.
 - Not comparative
 - No examination of costs

Efficacy or Effectiveness Evaluation

- Only outcomes of two or more health programs are compared to each other.
 - Comparative
 - No examination of outcomes

Cost-Outcome Description

- Costs and outcomes of a single health program are examined.
 - Not comparative
 - Both costs and outcomes are examined

Cost-Minimization Analysis

- Alternatives under consideration are assumed to have equivalent impact and only costs are compared.
 - Comparative
 - Only costs are examined, with effectiveness assumed to be equivalent.

Full Economic Evaluation

- Costs **and** outcomes of two or more health programs are compared to each other.
 - Comparative
 - Both costs and outcomes are examined
- Three major types
 - Cost-effectiveness
 - Cost-utility
 - Cost-benefit

Cost-Benefit Analysis

- Outcomes: measured in monetary units.
 - Allows for comparison of programs leading to very different outcomes since all outcomes are measured in same units (i.e., dollars).

Cost-Benefit Analysis: Example

- Research question
 - Is a hospital post-discharge care transition program for Medicare beneficiaries financially viable compared to regular discharge processes?
- Methodology
 - Randomized control trial following elders assigned to a five-part post-discharge care transition program or usual discharge.
 - Hospital readmission and associated costs were the primary outcome.
- Finding
 - For every \$1.00 spent on the post-discharge care transition program , \$1.09 was saved in readmission costs.

Source: Saleh et. al. (2012).

Cost-Effectiveness Analysis

- Outcomes: a single, common effect that differs only in magnitude between program under consideration.
- Examples:
 - Health state: blood pressure, # cancer diagnoses, # cases of tuberculosis.
 - Other measures of health: years of life gained, gain in life expectancy.

Cost-Effectiveness Analysis: Example

- Research question
 - What combination of age and frequency of mammography yields the highest cost-effectiveness?
- Methodology
 - The outcome was years of life saved, based on assumed mortality reduction and portion of cancers detected between mammograms, by age group and frequency of mammography.
 - Cost of saving years of life was calculated for seven groups based on age and mammography frequency.
- Finding
 - Biennial screening for women ages 50-79 was the most cost-effective screening strategy. Source: Lindfors and Rosenquist (1995)

Cost-Utility Analysis

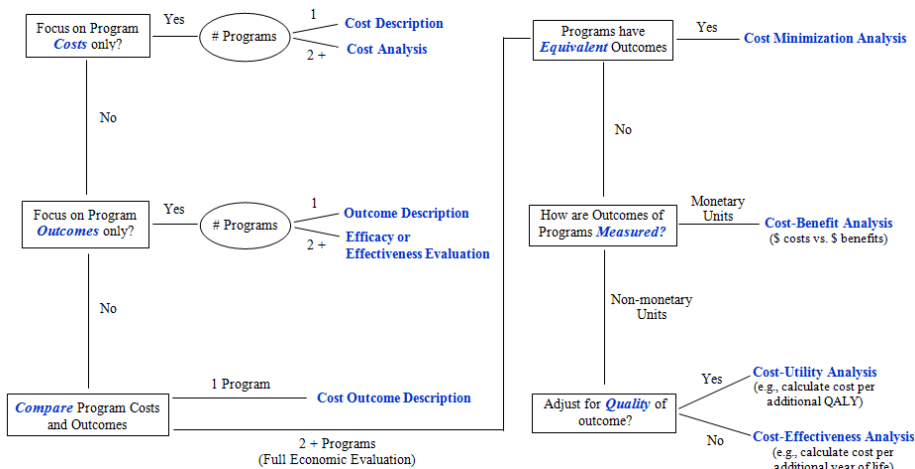
- Outcomes: based on individual and/or societal preferences for a particular health outcome.
 - Allows for both length and quality of life gains to be synthesized in a single measure.
 - That is, outcome measures defined as increased life expectancy consider both the number of additional years of life and quality of those additional years.
 - Common measures: quality adjusted life years (QALYs), disability adjusted life years (DALYs), and healthy-year equivalents (HYE).

Cost-Utility Analysis: Example

- Research question
 - What are costs and outcomes of providing amniocentesis or chronic villus sampling for all pregnant women regardless of age or risk?
- Methodology
 - Utility values assigned to potential outcomes for three screening options – amniocentesis, chronic villus sampling, and no screening.
 - Probabilities for each outcome and costs for each screening program were also calculated.
- Finding
 - Amniocentesis costs less than \$15,000 per quality-adjusted life year gained for women of all ages and risk profiles.

Source: Harris et. al. (2004)

Flowchart of Different Approaches to Economic Evaluation



References

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