

How Can Cost Effectiveness Analysis Be Made More Relevant to U.S. Health Care?



Paul G. Barnett, PhD

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Talk Overview

- Review of Cost Effectiveness Analysis (CEA)
 - The role of CEA in the U.S. and other countries
 - The barriers to implementing CEA
 - Overcoming the barriers to CEA
 - CEA & comparative effectiveness
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Cost-effectiveness analysis (CEA)

- Compare treatments, one of which is standard care
 - Measure all costs (from societal perspective)
 - Identify all outcomes
 - Express outcomes in Quality Adjusted Life Years
 - Adopt long-term (life-time) horizon
 - Discount cost and outcomes to reflect lower value associated with delay
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Review CEA (cont.)

- Test for dominance
 - The more effective, less costly treatment *dominates*
 - or if they are equal cost, the more effective
 - or if they are equally effective, the less costly
 - In the absence of dominance, find the Incremental Cost-Effectiveness Ratio (ICER)
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Incremental Cost-Effectiveness Ratio (ICER)

$$\frac{\text{Cost}_{\text{EXP}} - \text{Cost}_{\text{CONTROL}}}{\text{QALY}_{\text{EXP}} - \text{QALY}_{\text{CONTROL}}}$$

- Decision maker compares ICER to “critical threshold” of what is considered cost-effective (\$ per QALY)
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Where can CEA be applied?

- Individual decisions of physician and patient
 - System decisions
 - Coverage decision
 - Practice guidelines
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Use of cost-effectiveness in other countries

■ Canada

- Canadian Agency for Drugs and Technologies in Health
- Established 1989 to evaluate health technologies
- Provincial organizations also study cost-effectiveness

■ United Kingdom

- National Institute of Clinical Effectiveness
 - Established 1999 to provide advice to National Health Service
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Use of CEA in other countries (cont.)

- Sweden, Australia, Netherlands
 - Requires manufacturer to submit evidence of cost-effectiveness to add new drugs to health system formulary
 - Germany
 - Institute for Quality and Efficiency in the Health Care Sector (IQWiG)
 - France
 - Unique periodic reviews of previously approved pharmaceuticals
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Use of CEA in other countries (cont.)

- Health plans of most developed countries consider cost-effectiveness
 - Used for coverage decisions
 - Especially for new drugs and technologies
 - Cost-effectiveness findings not always followed
 - Few cases of outright rejection based on cost
 - No formal evaluations of use of technology assessment, however
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Use of cost-effectiveness in U. S.

- Medicare proposed use of cost effectiveness criteria in 1989
 - Proposed regulation was withdrawn after decade of contentious debate
 - Medicare Coverage Advisory Commission (MCAC) has no mechanism to consider cost or value in its decision
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Use of cost-effectiveness in U.S.

- U.S. Preventive Services Task Force does not consider cost-effectiveness in making recommendations

CEA and U. S. health care reform

- Patient Protection & Affordable Care Act 2010
- Prohibited use of dollars per QALY thresholds
 - For Patient-Centered Outcomes Research Institute (PCORI) recommendations
 - For HHS coverage decisions

Use of cost-effectiveness in U. S.

- Oregon Medicaid
 - Attempted to restrict expensive treatments of low benefit
 - Negative political consequence
 - May not have been a real test of acceptance of CEA
 - Oregon continues to prioritize Medicaid services (Saha, 2010)
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Surveys of coverage decision makers

- Survey of 228 managed care plans (Garber et al, 2004)
 - 90% consider cost
 - 40% consider formal CEA
 - Workshops with California health care organizations (Bryan, 2009)
 - 90% would apply CEA to Medicare
 - 75% would apply CEA to private insurance
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**Question for discussion:
What are the potential
objections to using CEA?**

Response options

- Represents rationing of health care
 - Health of the very ill is not sufficiently considered
 - Methods are not trustworthy
 - Does not consider budget impact
 - May not be objective because of sponsorship bias
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Research on barriers to use of CEA

- At least 16 different surveys of decision makers' attitudes to health economic studies
 - Identified decisions makers concerns
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Decision maker concerns about CEA

- Lack of understanding of CEA
 - Lack of trust in CEA methods
 - Lack of confidence in QALYs
 - Lack of confidence in extrapolation (modeling)
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Decision maker concerns about CEA (cont.)

- Not relevant to decision maker's setting or perspective
 - Decision maker has short-term horizon
 - Wants payer perspective, not societal perspective
 - Lack of information on budgetary impact
 - Concern about sponsorship bias
 - See: (Drummond, 2003)
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Other concerns about CEA

- American attitudes
 - Distrust of government and corporations
 - Unwilling to concede that resources are really limited
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**What is the most important
way to improve acceptance of
CEA?**

Response options

- Use recommended methods
- Provide details of cost and benefits
- Provide budget impact
- Study an important innovation

ISPOR recommendations to improve acceptance of CEA

- Describe relevant population and its size
 - Budget impact, including which budgets will be affected
 - Provide disaggregated cost and outcomes
 - Provide cost and outcome by sub-groups
 - Provide key assumption, data sources, sensitivity analysis– which parameters have biggest impact?
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Other ways to improve acceptance

- Make sure CEA is relevant to decision maker
 - Support coverage decisions about expensive interventions
 - In other countries CEA analyses are *commissioned* by decision makers
 - Decision makers are anxious for results
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Other ways to improve acceptance (cont.)

- Provide findings that are timely
 - Easier to prevent adoption than to withdraw widely-used technology
 - Conduct preliminary studies
 - These represent pre-positioning of resources
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Implicit use of CEA in U.S.

- Examples of behind the scenes role:
 - Decision makers require large effect if the treatment is expensive
 - American Managed Care Pharmacy “formulary guidelines”
 - See (Neumann, 2004)
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Implicit use of cost-effectiveness analysis

- Medicare considered CEA in coverage decisions for preventive services (Chambers, 2015)
- Medicare coverage less likely when cost-effectiveness estimate not available (Chambers, 2012)

CEA and comparative effectiveness

- Comparative effectiveness research
 - Alternative to CEA (which is seen as too controversial)
 - Study alternative treatments to find the most effective
 - The more effective treatment should be used
 - Placebo often not the appropriate comparator
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Limits of comparative effectiveness

- What if most effective treatment has more side effects or higher risk?
 - How to estimate long-term benefit of short-term effectiveness, e.g., what is the value of successful identification of a disease?
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Use of CEA methods in comparative effectiveness

- Balance benefits with risks
 - Convert to QALYs to find net benefit and which treatment is “most effective”
 - Extrapolating beyond short-term effectiveness
 - Use of Decision Models can estimate long-term benefits
 - See: (Russell, 2001)
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Exceptions to CEA

- Even when treatment is not cost-effective, physicians and patients give priority to certain groups:
 - Life threatening conditions
 - Children
 - Disabled
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Exceptions to CEA

- VHA can add to this list
 - Treatment for a service-connected injury or illness
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Public involvement in application of CEA

- NICE citizen council
 - Experiment with individuals recruited from New York state juror pool
 - Provision of cost-effectiveness information influenced coverage decisions
 - See: (Gold, 2007)
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Unique role for VA

- Global budget
 - Potential collaboration between decision makers and researchers
 - Identified constituency of health system users who can be (must be) involved
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Implementation of CEA

- Many health interventions yield little or no value
 - Up to one-third of U.S. health expenditures are for unneeded care
- Unneeded care is care that is not cost cost-effective

De-implementation of low-value interventions

- The implementation of CEA findings
- First focus on harmful (dominated) interventions
- Choosing Wisely and other lists
 - See www.HERC.va.gov CEA analysis → Identifying Services that are not Cost-Effective

What should the analyst do?

Choose important topics for CEA

- Involve decision maker at the outset
 - Consider if CEA finding will be relevant to policy
 - Is treatment likely to be expensive?
 - Is treatment targeted for one of the exceptional groups?
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Prepare a useful CEA

- Transparency in reporting
 - Provide disaggregated cost and outcomes
 - Describe sub-groups
 - Budget Impact Analysis may be an essential adjunct to CEA
 - Describe size of population affected
 - Consider short-term horizon, payer perspective
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Conduct de-implementation studies

- Low-value services are a target for de-implementation projects

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