Program Planning and Evaluation

PHC 6102
Principles of Health Policy and Management
Objectives

• Describe program planning and evaluation
• Describe evaluation methods and tools
• Describe the evaluation process
• Discuss the role of measurement in the evaluation process
Public Health Planning

• Efforts undertaken on the behalf of the public well-being to achieve intended social change (Issel, 2009; p.5)
  – E.g., development and use of the *Healthy People* goals

• Models Developed for Public Health Planning
  – MAPP (Mobilizing for Action through Planning and Partnership):
  – PACE-EH (Protocol for Assessing Community Excellence in Environmental Health)
Public Health Evaluation

• **Purposeful, systematic, and objective** collection and analysis of information used for the purpose of documenting the effectiveness and impact of planned programs, establishing accountability, and identifying areas needing change and improvement.

• **A focused evaluation does the following:**
  – Demonstrate accountability to diverse stakeholders
  – Generate a shared understanding of program and the intended outcomes
  – Document program processes
  – Determine progress toward short, mid-term, and long-term outcomes.
Types of Evaluation

• Traditional: Assess the impact of specific program activities on defined outcomes
  – Do laws requiring complete immunization prior to school entry reduce vaccine-preventable diseases?

• Economic: combine program effectiveness info with economic resources (i.e. costs & benefits) quantitatively
  – Which program is most effective in terms of costs per child immunized?

• Process: document kinds and amounts of services provided, characteristics of program and participants
  – Does the change in enrollment procedures increase the number of children enrolled in the registry?
Types of Evaluation Cont.

• Formative: identify the best uses of available resources, prior to a traditional program evaluation
  – Rely on combination of quantitative and qualitative methods to understand a process or system and identify barriers and opportunities for improvement

• Empowerment
  – Programs assess existing strengths and weaknesses, focus on key goals and program improvements and develop strategies to achieve and document goals
Efficacy/Effectiveness Assessment

• Efficacy refer to program’s ability to do more good than harm when delivered under optimal conditions

• Effectiveness refers to a program’s ability to get results in less than optimal situations (i.e., real-world conditions)
  – E.g., Smoking cessation program developed for university students may not be as effective when applied to employees of large auto manufacturer
Designs used to evaluate program performance

Experimental Designs
• Randomized control trials

Quasi-experimental Designs
• Analyses using computer databases
• Case-control observational studies
• Series based on historical controls

Non-experimental Designs
• Anecdotal case reports
• Case series without controls
• Series with literature controls
The Planning-Evaluation Cycle
Steps

Engage Stakeholders

Ensure use and share lessons learned

Justify conclusions

Gather credible evidence

Standards
Utility
Feasibility
Propriety
Accuracy

Describe the program

Focus the evaluation design

CDC Framework for Program Evaluation in Public Health
CDC Framework for Program Evaluation in Public Health
IOM Framework for Building Community Health
Logic Model

Figure 1. Elements of the Logic Model

<table>
<thead>
<tr>
<th>SITUATION</th>
<th>INPUTS</th>
<th>OUTPUTS</th>
<th>OUTCOMES</th>
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</thead>
<tbody>
<tr>
<td>What we Invest!</td>
<td>What we Do!</td>
<td>Who we Reach!</td>
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<td>• awareness</td>
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External Influences, Environmental, Related Programs

Situations and changes:
- Short-term: Change in:• knowledge, • skills, • attitude, • motivation, • awareness
- Medium-term: Change in: • behaviors, • practices, • policies, • procedures
- Long-term: Change in situation: • environment, • social conditions, • economic conditions, • political conditions
Application of Logic Model to A Smoking Cessation Program
Economic Evaluations

• Identifying, measuring, valuing, the inputs (costs) and the consequences (benefits, effectiveness) of two or more programs or interventions
  – Applied to public health programs: amount of resources used by a program/intervention, and health outcomes

• Four forms predominately used in public health
  – Cost Analysis (CA), Cost-Effectiveness Analysis (CEA), Cost-Utility Analysis (CUA), Cost-Benefit Analysis (CBA)
  – Distinct from each other and are used to address different efficiency questions
Cost Analysis

• Economic evaluation that involves the systematic collection, categorization, and analysis of the net costs of a program
  – Net Cost = Cost of program implementation minus cost-of-illness
  – CA can stand alone but is often nested within other economic evaluations

• CA excludes outcome measures because they are either unavailable, or equally effective between the chosen alternatives
Cost-Effectiveness Analysis

• Compare the costs of alternative intervention strategies that produce a common health effect

• Effect measures expressed in physical or natural health units and can include final outcomes
  – e.g., life years gained or number of cases prevented

• CEA derives a ratio of cost per unit of health outcome as a summary measure
  – E.g., CEA could be used to compare a newly developed vaccine treatment with an existing one in terms of cost per case of smallpox prevented in the target population.
Cost-Utility Analysis

- *Economic evaluation* that combines life years saved with the quality of life during those years
- Captures timing & duration of disease or disability by comparing utility associated with different health outcomes
  - Utility: person's preference for a preferred outcome
  - *CUA* measures outcomes in quality-adjusted life years (QALYs) and disability-adjusted life years (DALYs)
- *CUA* measured by the cost-utility ratio and expressed as the dollar value per QALY or DALY saved
Cost-Benefit Analysis

- *Economic evaluation* that standardizes costs and benefits in dollars and provides a list of all costs and benefits accrued during a period
- Incongruent cost and benefit timelines are adjusted, and *summary measures* for a *CBA* are typically presented as a single value (i.e., net present value [NPV])
  - For example, *CBA* could be used to compare the net benefits of a smallpox vaccination program targeting population subgroups at risk with the net benefits of a program targeting the entire population.
How do We Decide Which Form of Economic Evaluation to Use?

1. Decision based on the alternatives to be compared and whether outcomes are to be examined

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<th>Yes</th>
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<td>Descriptive analysis</td>
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<tr>
<td>CA</td>
<td>CBA, CUA, CEA</td>
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2. Decision-making level
Measurement Issues Pertinent to Economic Evaluations

• The question addressed by the study
  – Is the type of analysis used appropriate to the question?
  – What is the perspective of the analysis?

• The estimation of resource use and costs
  – Are the main areas of resource use identified?
  – Are the appropriate costs measured?

• The estimation of benefits
  – How are they measured & valued (life years gained, health years)?

• Discounting
  – Adjusts for costs (and benefits) occurring at different points in time.

• Sensitivity analysis
Questions

• What is program evaluation?
• Describe the process of program evaluation.
• Why should evaluations be conducted?
• What are the factors that influence credibility of an evaluation?
• How do types of economic evaluations differ?
Sources


• http://www.cdc.gov/owcd/EET/SeriesIntroduction/1.html

• http://www.nap.edu/openbook.php?record_id=5298&page=77