Introduction to Prevention Effectiveness

Instructor name
Title
Organization

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Course Topics

Introduction to Prevention Effectiveness

1. A Public Health Approach
2. What Is Prevention Effectiveness?
3. Prevention Effectiveness Study Design
4. Economic Costs
5. Types of Economic Evaluations
After completing this course, you will be able to

• define prevention effectiveness

• describe the key components of prevention effectiveness studies

• identify basic economic evaluation methods used in prevention effectiveness studies

• identify data used in the most common types of economic evaluation methods
Topic 1
A Public Health Approach
A Public Health Approach

Surveillance

Risk Factor Identification

Intervention Evaluation

Implementation

What is the problem?

What is the cause?

What works?

How do you do it?

Problem

Response
Public Health Core Sciences

- Surveillance
- Prevention Effectiveness
- Epidemiology
- Informatics
- Laboratory
Topic 2
What Is Prevention Effectiveness?
Prevention Effectiveness Defined

Prevention effectiveness is the systematic assessment of the impact of public health policies, programs, and practices on health outcomes by determining their effectiveness, safety, and costs.

What Prevention Effectiveness Does

- Assesses the impact of prevention policies, programs, and practices
- Evaluates the allocation of health care resources
- Provides decision makers with information for action

Prevention Effectiveness in Developing and Implementing Prevention Strategies

Basic Research
- Is prevention plausible?

Applied Research
- Can prevention work (efficacy)?

Community Demonstrations
- Does prevention work (effectiveness)?

Implementation
- Is it continuing to work?

Prevention Effectiveness

Prevention effectiveness includes which of the following? (Select all that apply.)

A. Examining costs and benefits

B. Providing funding for an intervention

C. Evaluating allocation of health care resources

D. Assessing the impact of different policies, programs, and practices
Topic 3
Prevention Effectiveness Study Design

- Problem Identification
- Audience Identification
- Perspective Identification
Prevention Effectiveness Design Approaches

- Problem Identification
- Audience Identification
- Perspective Identification
Problem Identification

Any health-related situation in which a policy solution or management decision can be applied


Audience Identification

- Policy and program decision makers
- Health care organizations
- Researchers
- Clinical workers
- The general public
- The media


## Perspective Identification

<table>
<thead>
<tr>
<th>Cost item</th>
<th>Patient</th>
<th>Physician</th>
<th>Payer (e.g., insurance, Medicaid)</th>
<th>Society</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physician time</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
</tr>
<tr>
<td>Medication</td>
<td>✔️</td>
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<td>✔️</td>
<td>✔️</td>
</tr>
<tr>
<td>Administration</td>
<td></td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
</tr>
<tr>
<td>Patient travel</td>
<td>✔️</td>
<td></td>
<td></td>
<td>✔️</td>
</tr>
<tr>
<td>Time off from work</td>
<td>✔️</td>
<td></td>
<td></td>
<td>✔️</td>
</tr>
</tbody>
</table>
Knowledge Check

Fill in the blanks with the correct answers.

What are the three prevention effectiveness study design approaches?

1. **Problem identification**
2. **Audience identification**
3. **Perspective identification**
Topic 4
Economic Costs
Prevention Effectiveness Costs

- Direct
- Indirect
- Intangible
- Opportunity
Direct Costs

- Medications
- Medical devices
- Computer software and equipment
- Research and development
- Inpatient care

Indirect Costs

- Change in productivity
- Costs of absenteeism
- Foregone leisure time
- Time spent caring for the patient

Intangible Costs

- Physical pain and suffering
- Emotional anxiety
- Social stigmatization
Opportunity Costs

- Monetary and nonmonetary
- Costs and charges
Prevention effectiveness costs are important to a study because they are often the main quantitative variable for use in

A. prevention

B. analysis

C. identification

D. effectiveness
Topic 5
Types of Economic Evaluations
The choice of economic evaluations used is dependent on

- audience
- study question
- data
# Comparison of Economic Evaluation Methods

<table>
<thead>
<tr>
<th>Method</th>
<th>Data inputs used</th>
<th>Outcome value desired</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cost analysis</td>
<td>Costs</td>
<td>Total program or intervention cost (typically reported as cost per patient or cost per service rendered)</td>
</tr>
<tr>
<td>Cost-effectiveness</td>
<td>Net cost of intervention versus intervention effectiveness</td>
<td>Dollars per life saved because of an intervention</td>
</tr>
<tr>
<td>Cost-utility</td>
<td>Quality-adjusted life years (QALYs)</td>
<td>Number of life years saved, adjusted to account for loss of quality</td>
</tr>
<tr>
<td>Cost-benefit</td>
<td>Money</td>
<td>Net costs or savings of an intervention</td>
</tr>
</tbody>
</table>
Cost Analysis

- Considers program or intervention costs and cost of illness
- Achieves cost minimization for the program under consideration
Cost-Effectiveness Analysis

Compares interventions for the same disease or condition among a common population
Cost-Utility Analysis

• Considers quality-adjusted life years

• Compares interventions for same disease or injury
Cost-Benefit Analysis

- Evaluates multiple options
- Compares different options among sectors
Knowledge Check

Choose the correct answer from the choices below.

Selecting the best economic evaluation method is dependent on the audience, the study question, and the _____________.

A. data

B. cost

C. policy

D. application
<table>
<thead>
<tr>
<th>Method of Analysis</th>
<th>Data Used</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. Cost-utility analysis</td>
<td>1. Quality-adjusted life years</td>
</tr>
<tr>
<td>B. Cost-effectiveness analysis</td>
<td>2. Cost</td>
</tr>
<tr>
<td>C. Cost-benefit analysis</td>
<td>3. Money</td>
</tr>
<tr>
<td>D. Cost analysis</td>
<td>4. Net cost of intervention versus intervention’s effectiveness</td>
</tr>
</tbody>
</table>
Course Summary

During this course, you learned to

• define prevention effectiveness

• describe the key components of prevention effectiveness studies

• identify basic economic evaluation methods used in prevention effectiveness studies

• identify data used in the most common types of economic evaluation methods
QUESTIONS?
Acknowledgments

- Ricardo Basurto-Davila, PhD, MSc, Los Angeles County Department of Public Health, California

- Paul Farnham, PhD, National Center for HIV/AIDS, Viral Hepatitis, STD, and TB Prevention, Centers for Disease Control and Prevention, Atlanta, Georgia

- Martin Meltzer, PhD, MS, National Center for Emerging and Zoonotic Infectious Diseases
Resources and Additional Reading

Resources and Additional Reading

- O’Bien BJ, Helyland D, Richardson WS, Levine M, Drummond MF. Users’ guides to the medical literature. XIII. How to use an article on economic analysis of clinical practice. B. What are the results and will they help me in caring for my patients? JAMA 1997;277:1802–6.
- Stewart KJ. The challenge of cost-effective decision making. Fam Pract Manage 1996;July/August:16–7.
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