9-30-2013

Cost Estimation Methods and Foundational Public Health Capabilities

Glen P. Mays

University of Kentucky, glen.mays@cuanschutz.edu

Right click to open a feedback form in a new tab to let us know how this document benefits you.

Follow this and additional works at: https://uknowledge.uky.edu/hsm_present

Part of the Health Economics Commons, and the Health Services Research Commons

Repository Citation
https://uknowledge.uky.edu/hsm_present/7

This Presentation is brought to you for free and open access by the Health Management and Policy at UKnowledge. It has been accepted for inclusion in Health Management and Policy Presentations by an authorized administrator of UKnowledge. For more information, please contact UKnowledge@lsv.uky.edu.
Cost Estimation Methods and Foundational Public Health Capabilities

Glen Mays, PhD, MPH
University of Kentucky
First Principles

Estimating total economic costs of an activity

Costs = value of resources used to produce activity

Resources = people, facilities, equipment, supplies

...Key concept: opportunity costs
First Principles

Estimating economic costs of a capability

- **Capability** = resources required to produce an activity or set of activities
- Having a capability vs. using a capability
Developing a cost classification system

- Perspective: who incurs cost
- Timeframe: over what period
- Type of resource
  - Labor, equipment, supplies, facilities, etc
- Activity domains/areas
  - Training, surveillance, outreach & recruitment, screening, implementation, administration
  - Pre-implementation vs. post-implementation
- “Direct” vs. “indirect” activities
- Capital vs. operating costs (& depreciation)
Developing a cost classification system

Don’t overlook...

- Resources that are hard to measure or value
- Resources used in small amounts
- Resources procured without money
  - Volunteer time
  - Parent/caregiver time
  - Intervention recipient time
  - In-kind contributions/donated materials
  - Existing resources
Developing a cost classification system

- Include measures of units of activity
  - Unit costs

- Fixed vs. variable costs
  - Variable costs vary with activity level
  - Fixed costs are constant despite volume of activity
  - Long term, all costs are variable
Developing a cost classification system

- Handling resources that are shared by multiple programs, activities, or organizations
  - Joint costs

- Cost allocation methods
  - Time
  - Intensity of use
Conducting a cost study

- Define Purpose/Scope
- Literature Scan
- Solicitation of experts
- Development of Cost Categories
- Instrument Pilot Test/Validation
- Data Collection
- Cost Analysis
Cost data collection methods

- **Prospective “expected cost” methods**
  - Vignettes
  - Surveys with staff and/or administrators
  - Delphi group processes

- **Concurrent “actual cost” methods (micro-costing)**
  - Time studies with staff
  - Activity logs with staff
  - Direct observation

- **Retrospective “cost accounting” methods**
  - Modeling and decomposition using administrative records
  - Surveys with staff and/or administrators
Examples: Survey methods

Four dimensions of work:
- Time
- Cognitive effort
- Physical effort
- Stress

Additional cost components:
- Practice expense
- Malpractice expense
### Table 4

**Summary of Estimated Cost of Data Collection**

(in 1991 dollars)

<table>
<thead>
<tr>
<th>Collection Method</th>
<th>Total Cost(^a)</th>
<th>No. of Completes</th>
<th>Cost per Complete(^b)</th>
<th>Cost per Rated Service(^c)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Telephone</td>
<td>$105,000</td>
<td>1200</td>
<td>$87.50</td>
<td>$175.00</td>
</tr>
<tr>
<td>1-Round Mail</td>
<td>$65,500</td>
<td>1200</td>
<td>$54.58</td>
<td>$109.17</td>
</tr>
<tr>
<td>2-Round Mail</td>
<td>$80,000</td>
<td>1267(^d)</td>
<td>$63.14</td>
<td>$133.33</td>
</tr>
<tr>
<td>Panel</td>
<td>$88,000</td>
<td>n/a</td>
<td>n/a</td>
<td>$146.67</td>
</tr>
</tbody>
</table>

\(^a\)Total cost of data collection includes all field activities (e.g., interviewing, survey distribution, data reduction), supervision, management, and instrument/materials development.

\(^b\)Cost per complete is derived by dividing the total cost of data collection by the number of completed cases. (This calculation is not applicable to the panel-rating methodology.)

\(^c\)Cost per service is derived by dividing the total cost of data collection by the 600 rated services.

\(^d\)667 completes for the first round and 600 completes for the second round.
Examples: Survey methods

- Surveys program managers
- Refers to expenditure records (not budgets)
- Explicit allocation of resources across multiple programs
- Available at:


Examples: Survey methods

**SASCAP™**
Substance Abuse Services Cost Analysis Program

---

### Time Allocation Table for Non-Medical Direct Care Staff

<table>
<thead>
<tr>
<th>Job Type</th>
<th># of People</th>
<th>Hours Spent in Average Week Providing Specified Patient Services</th>
<th>Hours Spent in Average Week Doing Administrative and Other Support Activities</th>
</tr>
</thead>
<tbody>
<tr>
<td>EXAMPLE: Social Worker (MSW/DSW)</td>
<td>2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Non-Medical Direct Care Staff</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Case Manager (certified)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Case Manager (non-certified)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Degreed Counselor (licensed or certified)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Druged Counselor (non-licensed)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Examples: Medicaid administrative claiming

- Public health agencies that claim Medicaid reimbursement for outreach and enrollment activities
- Requires periodic time studies to document agency time and effort devoted to reimbursable activities
Key issues: cost of capabilities

- Delineating state vs. local roles and division of effort
- Identifying scale and scope effects
  - By population served
  - By range of programs supported (portfolio effect)
- Identifying input factors that affect costs
  - Resource prices
  - Case mix
- Identifying key output differences across settings
  - Quality
Public Health Delivery and Cost Studies (DACS)

- Set of 11 new studies conducted by PBRNs
- Focus on 1 or more public health services
- Estimate costs and cost variation across multiple settings
- Identify factors that drive variation in costs
- Use standardized approaches to cost measurement and cost analysis