Cost of Services

N9205
October 3, 2000
What are the questions?
How much does X cost?

- over time?
- in different places?
- as done by different individuals?
- as compared with the cost of Y?
How is X paid for?

- by whom?
- with what associated incentives/disincentives?
Key concepts

- **price elasticity**
  - Does the demand for a produce change with a change in price?
- **supply and demand curves**
  - How does supply of a produce affect demand and vice versa?
Key concepts, cont.

- **average cost** = cost of each item, calculated by dividing total cost by number produced
- **total cost** = all costs of production
- **marginal cost** = the average cost of the next item produced
Key concepts, cont.

- **costs**
  - materials, time, profit
- **charges**
  - the price tag
- **cost shifting**
  - charging one customer high enough to cover unpaid costs of another
Key concepts, cont.

- hidden costs/lost opportunity costs often ignored
  - time
  - capital investment
  - foregone earnings
Key concepts, cont.

- Monopoly: only one seller of a service
- Monopsony: only one buyer of a service
- Oligopoly: small number of sellers control market
- Oligopsony: small number of buyers control market
Data sources:

- billing information
- budgets
- annual reports
- patient/individual surveys
- employer surveys
# VA cost estimation methods

<table>
<thead>
<tr>
<th>METHOD</th>
<th>DESCRIPTION</th>
<th>BENEFITS &amp; LIMITATIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Micro-cost</td>
<td>Pseudo-bill, cost-function or direct measure</td>
<td>Precise but expensive</td>
</tr>
<tr>
<td>Average cost</td>
<td>Combines cost &amp; utilization data with non-VA relative value unit</td>
<td>Data easily obtained but may not be sensitive to all factors</td>
</tr>
<tr>
<td>Decision support</td>
<td>Detailed VA product cost-allocation system</td>
<td>Very detailed, but must be validated; difficult to assess</td>
</tr>
</tbody>
</table>
HCFA decision tree

- Question 1: is there enough evidence to show that the service is medically beneficial for a population? If Y, →
- Q2: Does Medicare already cover a medically beneficial service for the same condition that’s in the same modality? If Y, →
Q3: Is the new service substantially more beneficial, substantially less beneficial or just about as beneficial as the same modality service already covered? If same

Q4: Does the new service ‘result in equivalent or lower total costs for the Medicare population than the Medicare-covered alternative?
Illustrative of level of analytic sophistication often needed

Should increase potential for discussion of analysis with statistician

Should suggest that carefully doing the wrong methodology only leads you astray!
Objective: examine costs and benefits of 2 schedules of HIB vaccine in Israel

Finding: the costs of the program exceed the benefits when limited to the health service costs; when all social costs are included the program becomes beneficial
Ginsberg cont

- Cost of program
  - vaccine
  - labor to give
  - transportation for vaccine and nurses
  - cold chain costs
  - costs of adverse reactions
Ginsberg cont

- Benefits of program (cost of disease minus cost of program)
  - ambulatory care
  - ER care
  - hospitalization
  - prophylaxis for contacts
  - special ed/long term care for those with sequelae
Ginsberg cont

- Requires knowing attack rate, secondary infection rate, long term care issues
McGovern et al

- Descriptive study of long-term costs
- Workers Comp sample, 1992
- Medical costs from insurers
- Lost wages, etc from state
- Insurance expense estimated
- Lost fringe/household time imputed
McGovern et al

- human capital -- individual produces a stream of output over time
- cost in a base year = total lifetime cost of all cases injured that year
- direct cost = actual $$ spent
- indirect cost = value of what wasn’t done
Health care worker assault rate: 76/100,000
- Total cost: $1.9 million
- Cost $31,643/RN; $11,417/aide

Social services rate: 127/100,000
- Total cost: $1.5 million
- Cost $30.68/employee; $24,210/case
- Health aide 457/100k; $91.24/case
Lanz et al

- Randomized trial
- Single medical practice
- Cost carefully tracked research costs and several possible levels of application
Critique the conclusion:

- Appropriate for and acceptable to low income, managed care populations with full benefit coverage for cancer screening tests
Eilbert et al

- Effort to build toward a national data base
- Theoretical framework not fully tested/accepted
- Comparability severely compromised
Two useful readings:

- Ferrill MJ 1999 p values and confidence intervals *Drug Facts and Comparisons NEWS* March (20-23)
- Schwartz S, Carpenter KM 1999 The right answer for the wrong question: consequences of type III error for public health research 89:8 (1175-80)