Synthesis of CEA and CO

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Public Health Impact of Vaccines?

A. Public Health measures at population level ≠ individual patient level

B. Public Health Benefit: how to improve health of a population?

C. Health benefit/gain after new intervention can be expressed in mortality/morbidity reduction and/or QALY-gain in a population

D. Implicit link between Public Health Benefit and Budget Impact Analysis
   • Health gain with new intervention impacts budget
   • Payers are most interested in quantifying the link
   • Unfortunately no much research in that area but should be explicit with the introduction of new vaccines
   • No budgetary threshold defined that accept/reject new public health interventions
CEA ‘and/or’ CO?

• CEA and CO answer different questions in different context

• CEA is about Monetary Value Assessment of a new product compared with....

• CO is not about comparison but defining/combining different options to maximize the output under constraints

CEA first or CO first?

• Wrong question
• Technical foundation of CEA, CO is the basis*
• The question shouldn’t matter so much, however:
  – CEA is most attractive under direct comparison between two products, situations, context
  – With CO:
    • no threshold needed
    • multiple constraints with CO
    • allow answering different economic questions: which vaccine first?
    • sharper in defining price setting

‘More’ cost-effective?

Sharper price setting
Comparison: CEA versus CO (1)?

1. Perspective can be different
2. Model structure: similarities and diversion
3. Comparator is different
4. Data requirement: similarities and diversion
5. Outcome Measures: similarities and diversion
6. Data analysis and interpretation: different
7. Discount rates: uniform but can be different
8. Uncertainty analysis: common but also different

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<thead>
<tr>
<th>Key attributes of CEA and CO</th>
<th>CEA</th>
<th>CO</th>
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<tr>
<td>Method to achieve the policy objective</td>
<td>Optimize an outcome (net benefit or ICER) within a fixed budget by selecting the cost-effective interventions</td>
<td>Optimize one or more outcomes by selecting an optimal combination of interventions that fall within desired constraints</td>
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<td>Decision makers targeted</td>
<td>Health technology assessment agencies, ministers of health, donor agencies, and insurance companies</td>
<td>Budget holders</td>
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<td>Underlying economic principles</td>
<td>Inherent tradeoffs between resources needed to achieve societal objectives</td>
<td>Mathematical expression of a decision about alternative programs as a CO problem</td>
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| Relationship among methods | • The same input—epidemiology, resource use and costs, and impact of vaccination and comparator interventions.  
• Budget constraints are specified in CO but implied in CEA analysis. Comparator interventions are included in CO  
• A broader set of benefits and costs can be included in CEA or CO analyses if data are available. |