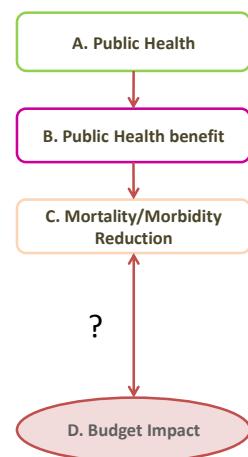


# Synthesis of CEA and CO

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ISPOR AP 2018

## 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?

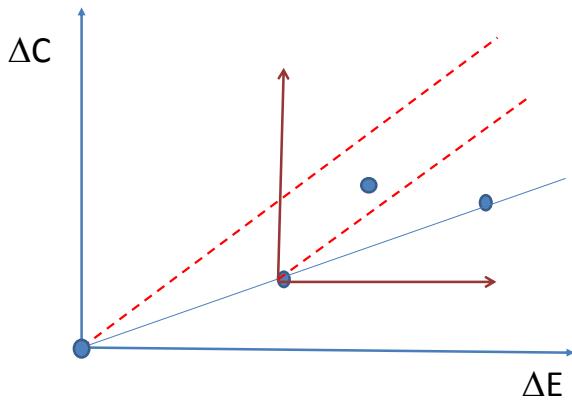
- CEA and CO answer different questions in different context
- CEA is about Monetary Value Assessment of a new product compared with....
- CO is not about comparison but defining/combining different options to maximize the output under constraints

## CEA first or CO first?

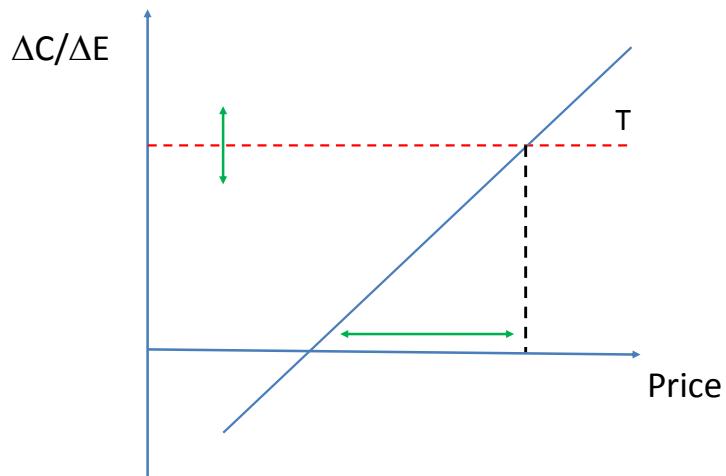
- Wrong question
- Technical foundation of CEA, CO is the basis\*
- The question shouldn't matter so much, however:
  - CEA is most attractive under direct comparison between two products, situations, context
  - With CO:
    - no threshold needed
    - multiple constraints with CO
    - allow answering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

\* Cost-effectiveness in health & medicine, Scnd edition, 2017, P Neumann et al.

‘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

## Key attributes of CEA and CO

	CEA	CO
Method to achieve the policy objective	Optimize an outcome (net benefit or ICER) within a fixed budget by selecting the cost-effective interventions	Optimize one or more outcomes by selecting an optimal combination of interventions that fall within desired constraints
Decision makers targeted	Health technology assessment agencies, ministers of health, donor agencies, and insurance companies	Budget holders
Underlying economic principles	Inherent tradeoffs between resources needed to achieve societal objectives	Mathematical expression of a decision about alternative programs as a CO problem
Relationship among methods	<ul style="list-style-type: none"><li>• The same input—epidemiology, resource use and costs, and impact of vaccination and comparator interventions.</li><li>• Budget constraints are specified in CO but implied in CEA analysis. Comparator interventions are included in CO</li><li>• A broader set of benefits and costs can be included in CEA or CO analyses if data are available.</li></ul>	