Session 1: Review of Economic Evaluation and Tobacco Control

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A scarcity of resources

Committing resources to X means sacrificing the benefits of Y

= <u>Opportunity Cost</u>

One criterion for choice is **<u>EFFICIENCY =</u>** maximising the benefit from available resources

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Economic Evaluation (EE)

"The comparative analysis of alternative courses of action in terms of both their costs and their consequences"

Requires:

- a comparison of two or more alternatives
- examination of both costs and consequences

The incremental approach: *"what is the difference in costs and difference in health outcome of Option A compared with Option B?"*

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Main types of EE

Type of analysis	Valuing resources	Valuing health outcomes	Application
Cost minimisation	£	-	Comparison of interventions with similar clinical effects
Cost-consequence	£	Listing of separate consequences with no common valuation	Comparison of health and non health, but without explicit decision rule
Cost effectiveness	£	Single indicator of morbidity or mortality	Comparison of interventions which differ on one, and only one, measure of effect
Cost utility	£	Index of morbidity and mortality (QALY)	Comparison of any health care interventions: may trade off health effects
Cost benefit	£	£	Comparison of any health or non-health interventions

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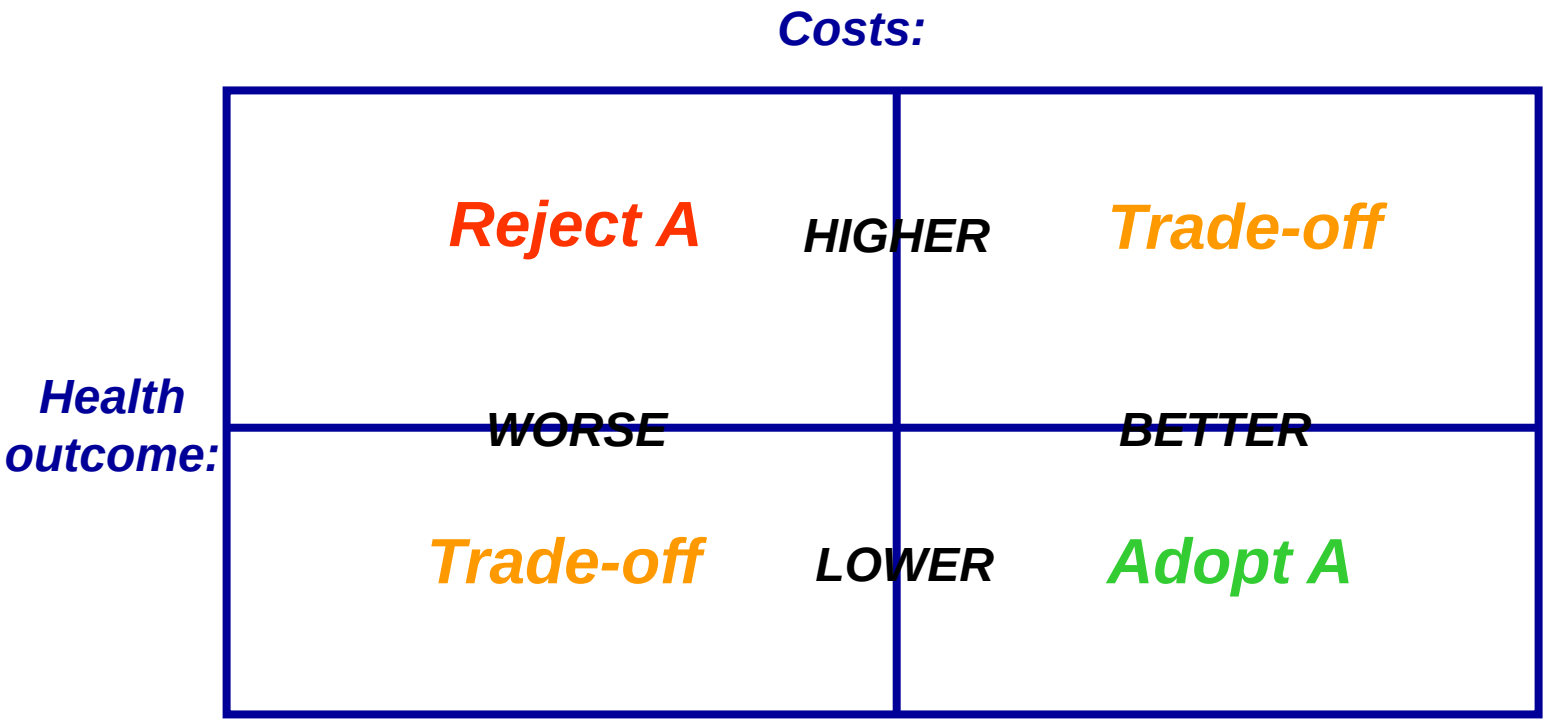
Simple Evaluation Matrix



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Best practice/ critical appraisal

"Drummond" checklist

1. Was a well-defined question posed in answerable form?

2. Was a comprehensive description of alternatives given?

3. Was there evidence that effectiveness had been established?

4. Were all the important and relevant costs and consequences for each alternative identified?

5. Were costs and consequences measured accurately/appropriately?

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Best practice/ critical appraisal

"Drummond" checklist

6. Were costs and consequences valued credibly?

7. Were costs and consequences adjusted for differential timing?

8. Was an incremental analysis performed?

9. Was allowance made for uncertainty?

10. Did presentation/discussion of results include all issues of concern?

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Challenges in public health EE I

- Drummond et al. (2009); Weatherly et al. (2009):
  - Attribution of effects (↑ good quality evidence)
  - beyond QALYs and valuation of outcomes
  - inter-sectoral costs and consequences
  - distributional effect (equity implications)

Challenges in public health EE II

- Kelly et al. (2005):
  - multiple interventions' effect
  - behaviour change necessary to ensure uptake
  - social variation (practice) < biological (RCTs)
  - dynamic nature of implementation

- Payne et al. (2013)
  - objective > maximising health gain in the inter-sectoral context of public health practice

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The NICE reference case I

Element of assessment	Reference case
Comparator	Interventions routinely used in the public sector
Perspective on costs	Public sector, including the NHS and PSS, or local government. Societal perspective (where appropriate)
Perspective on outcomes	All health effects on individuals. For local government guidance, non-health benefits may also be included
Type of economic evaluation	CCA, CBA, CUA
Synthesis on evidence on outcomes	Systematic review

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The NICE reference case II

Element of assessment	Reference case
Measure of health effects	QALYs
Measure of non-health benefits	Case-by-case basis
Source of data for measurement of health-related quality of life (HRQL)	Reported directly by patients or carers
Source of preference data for evaluation of changes in HRQL	Representative sample of the public
Discount rate	1.5% on both costs and health effects
Equity weighting	An additional QALY has the same weight

N.B Also Gates reference case – developed by NICE International, York University and HITAP (Thailand)

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Tobacco Control and EE

Population

Multiple considerations:

- age
- socioeconomic status
- comorbidity status
- pregnant/ post-partum

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Tobacco Control and EE

Objectives

Cessation – ↓Current smokers

Prevention – ↑Never smokers

Policy will likely constitute a mix of both

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Tobacco Control and EE

Intervention level & type

Individual vs population

Individual (cessation) = behavioural, pharmacological, non-conventional

Population (prevention/ cessation) = behavioural (children/ schools), mass media, law enforcement, taxation policy

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Tobacco Control and EE

Health and wider consequences of tobacco use

Impact	Examples
Loss of life	Number of life lost, years of life lost, QALYs lost
Health and social care costs	Costs to NHS (hospitalisation, primary care), costs to social services
Business costs	Productivity losses, employment losses
Household costs	Expenditure on tobacco products
Public services costs	Fires, litter, sickness and incapacity benefits, budgetary impact (tobacco taxes and revenue)
Indirect impact	Second hand smoke (both health and non-health)

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Summary

- Economic Evaluation provides a framework for assisting decision making based on efficiency
- Public health poses challenges beyond traditional EE methods
- NICE provide guidance and a “reference case”. Other reference cases exist e.g Gates Foundation
- Synthesis of range of evidence and modelling ever more important
- Tobacco control requires many of identified difficulties being addressed simultaneously

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