Assessing the Challenges of Applying Standard Methods of Economic Evaluation to Public Health Interventions

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Components of the Project

- Review of the literature.
- Focus on four methodological challenges.
- Options for dealing with the challenges.
- Case studies.
- Recommendations and conclusions.
Analytical Challenges Posed by the Evaluation of Public Health Interventions

• Inter-sectoral effects.
• Estimates of relative treatment (programme) effects.
• Measurement and valuation of outcomes.
• Equity.
Literature Review Methods

• Searched NHS EED database
  – extensive coverage
  – easy access to abstracts
  – easy access to papers.

• Choosing Health, DH Public Health White Paper
  – Topics, n=11
Public Health Areas

- Accidents
- HIV/AIDS
- Smoking
- Antenatal
- Alcohol
- Drug abuse
- Low birth weight
- Teenage pregnancy
- Youth suicide prevention

Proportion of economic evaluations

Public health area
Economic Evaluation Type by Public Health Area
Estimate of Programme Effectiveness

SOURCES OF DATA
- Experimental studies, 27%
- Observational studies, 27%
- Reviews, 46%

INCORPORATION OF MODEL
- Of the experimental studies above 13% included a model
- Observational studies, 22%
- Review, 89%
Inter-Sectoral Effects

- Current literature does not cast the net very broadly.
- Evaluations of PH interventions need to consider both public and private costs.
- Need to explore the ‘ripple effects’ (e.g. bicycle helmets).
Estimates of Relative Treatment (Programme) Effects

• Primary studies (e.g. potential for some RCTs).

• Data synthesis
  - modelling short to long-term
  - combination of effects from different designs
  - econometric modelling.
Measurement and Valuation of Outcomes

• Each method has its pros and cons.
• The options include:
  - money valuation
  - superQALY
  - cross-sectoral compensation test.
Equity Considerations

• Growing literature, although not generally applied in the context of economic evaluations.

• Methods for incorporating equity concerns:
  - discussion
  - distributional analysis (who gains/loses?)
  - opportunity cost analysis of equity
  - equity weighting analysis.
Recommendations

• Attribution of outcomes.
• Measuring and valuing outcomes.
• Equity considerations.
• Intersectoral costs and consequences.
Attribution of Outcomes

- Where possible, conduct RCTs.
- Try to match the outcomes in trials with those available in long-term observational studies.
- Where RCTs cannot be undertaken, fill gaps in the evidence base through natural experiments and non-experimental data.
Attribution of Outcomes (contd.)

• In economic evaluations synthesise all data, experimental and non-experimental. Conduct research into these methods (R).

• Make more use of techniques to analyse non-experimental data (e.g. propensity scores, time series analyses, more sophisticated econometric modelling).
Measuring and Valuing Outcomes

• Needs to be more debate about the theoretical and value propositions underlying the various forms of economic evaluation.

• Always perform a cost-consequences analysis, prior to proceeding to a valuation of outcomes.
Measuring and Valuing Outcomes (contd.)

• Explore the practicalities of applying the intersectoral compensation test approach (R).

• Continue research on developing a more general measure of well-being (R).
Equity Considerations

- Conduct pilot studies of health inequality impact assessment for selected public health interventions.
- Where the most cost-effective option is judged inequitable, calculate the opportunity cost of not selecting that option.
- Undertake primary research on the effectiveness of interventions designed to tackle health inequality (R).
Equity Considerations (contd.)

- Undertake further research on equity weighting, focussing on contexts relevant to public health (R).
Intersectoral Costs and Consequences

- Intersectoral impacts of interventions should be quantified (in a cost-consequences analysis). (Could assess the need for budgetary transfers.)
- Should be more consideration of the impacts of public health interventions on the voluntary sector and private individuals (re: impacts on the effectiveness of programmes, need for incentives).
Intersectoral Costs and Consequences (contd.)

• An analysis should be conducted of costs and consequences by beneficiary group (i.e. defined by health status, SES, etc).

• Should assess whether a general equilibrium approach would be more suitable for the evaluation of broad public health interventions (R).
Conclusions

• In principle the general methods of economic evaluation can be applied to public health interventions.
• The current literature is disappointing and represents many missed opportunities.
• Efforts need to be made in improving the effectiveness evidence base, through RCTs and observational studies.
• Economic evaluations in this area need to pay a lot more attention to intersectoral effects and equity considerations.