Valuing Nonfatal Health Risk Reductions in Global Benefit-Cost Analysis

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Concepts and Context

• Same conceptual framework as mortality risks.
  – Value per statistical case.
  – WTP for own risk reductions.
  – Revealed and stated preference methods.
  – Use of benefit transfer.

• Issue:
  – High quality WTP studies not available for many health conditions and countries.
Willingness to Pay

• No recent, criteria-driven review of empirical research available.
• Requires case-by-case decision-making.
• Use benefit transfer framework to determine whether high quality, suitable estimates are available.
• Otherwise, consider application of proxy measures.
Proxy Methods

Imperfect approximations:

• Direct and indirect costs of illness (COI).

• Quality-adjusted life years (QALYs) or disability-adjusted life years (DALYs), typically monetized based on:*
  
  – constant value per statistical life year (VSLY) derived from a VSL estimate; or
  
  – valuation function that adjusts for characteristics such as severity and duration.

*Can add costs incurred by third parties (e.g., insured medical costs) if not counted elsewhere in the analysis.
Averted Costs

• Inconsistent with theory:
  – Incurred costs, not WTP.
  – Certain outcome (ex post), not risk reduction (ex ante).
  – Excludes pain and suffering, quality of life impacts.

• Quality of empirical evidence varies:
  – No established best practices for use in global benefit-cost analysis.
  – Data availability varies across countries and across health effects.
  – Ideally use estimates of marginal opportunity costs per (incident) case.
Monetized QALYs or DALYs

• QALY and DALY estimates are plentiful and widely-used.

• Consistency with theory depends on how monetized.
  – QALYs represent trade-off between alternative health states and longevity, not between health risks and money that can be spent on other things.

• Valuation using a constant VSLY or value per QALY (or DALY) inconsistent with theory.
  – Calculated by dividing the VSL by discounted expected life years or QALYs remaining for average individual.
  – Theory suggests value varies by severity and duration; decreases as gain increases.
Monetized QALYs or DALYs

• Use of a valuation function may better approximate WTP.
  – More work is needed to develop approach to address DALYs as well as QALYs, and to reflect the (diverse) preferences of populations in low- and middle-income countries.

• In the interim, using a constant value provides a rough proxy; the implications of associated uncertainties should be addressed.
Recommendations

• Conduct a criteria-driven review of the WTP literature, applying the benefit transfer framework to determine whether estimates of reasonable quality are available for similar health risks. This review should include four steps.
  – Describe the policy outcome.
  – Search the literature.
  – Review studies for quality and applicability.
  – Transfer the estimate(s).
• Use monetized QALYs or DALYs as a proxy if necessary.
  – Estimate the change in QALYs or DALYs attributable to the policy.
  – Estimate the monetary value.
• Add costs incurred by third parties.
• Address uncertainty.

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Recommendations

Over the long term:

• Conduct additional research on WTP for nonfatal risk reductions.

• Further develop valuation function for QALYs and DALYs.
  – Likely to continue to be needed; developing WTP estimates for diverse effects and populations requires investment of substantial time and resources.

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