

Valuing Health Outcomes

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Basic Framework

Key Assumptions

- Individuals are best judge of their own welfare.
 - “Consumer sovereignty;” respect individual preferences.
 - Some exceptions: e.g., children, cognitive impairments, addiction.
- Values based on individual’s willingness to pay (WTP) for risk reductions or other improvements.
 - Spending on risk reductions reduces money available to purchase other goods and services (opportunity costs).

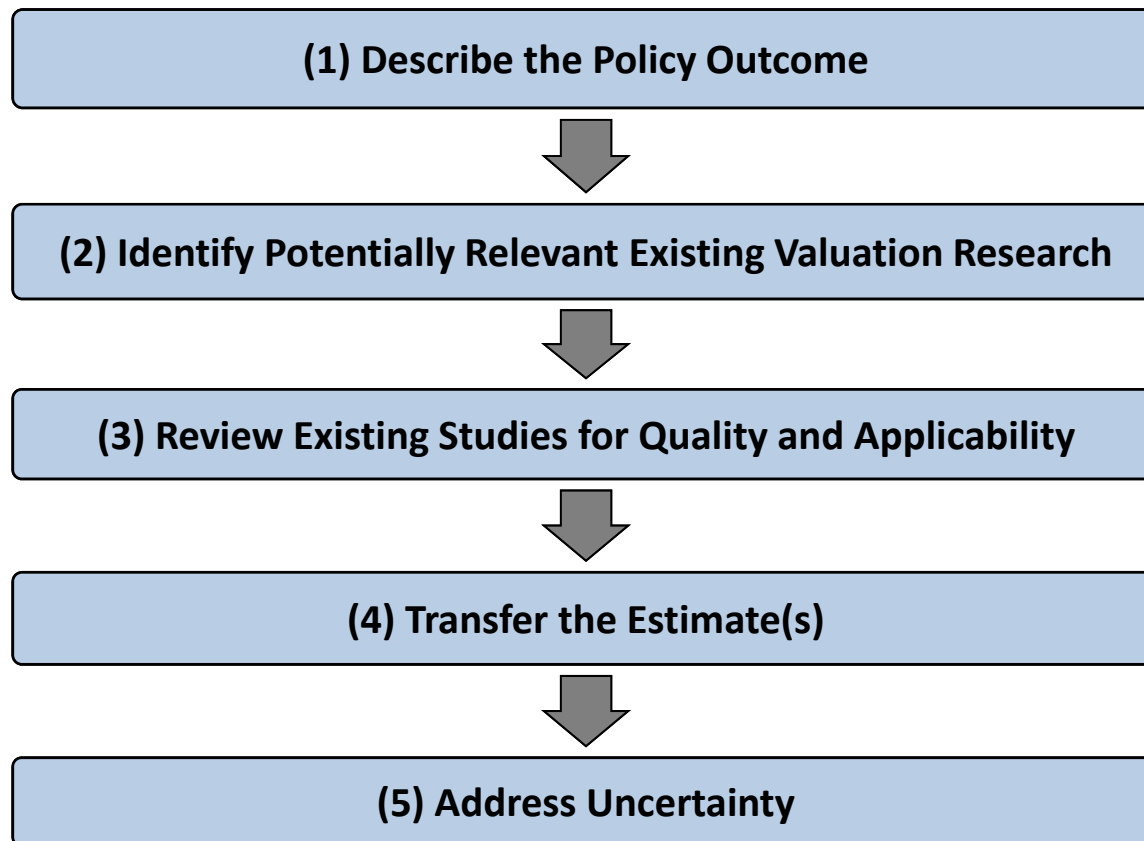
Basic Framework

Nonmarket Valuation

- Many outcomes can not be fully valued based on market prices.
- For nonmarket goods (e.g., health and environmental risks) estimate WTP based on:
 - Revealed preference methods - use market transactions or observed behavior to estimate the value of related goods.
 - Stated preference methods (contingent valuation surveys and choice experiments) - ask respondents to indicate their WTP under hypothetical scenarios.

Basic Framework

Benefit Transfer



Basic Framework

Major Challenges

- For mortality risk reductions, differences between scenarios studied and policy scenarios.
 - Studies often conducted in high income settings.
 - How address differences in income, age, life expectancy, cultural and social factors, etc.?
- For morbidity risk reductions, lack of valuation research for many health conditions.
 - Often requires the use of proxy measures.

Valuing Mortality Risk Reductions

Context and Concepts

Value per Statistical Life (VSL)

- Individual rate of tradeoff between small changes in own mortality risk within a defined time period and spending on other goods and services.
- Not the value of saving an individual's life with certainty.
 - Specific individuals who would die in the absence of the policy typically cannot be identified either ex ante or ex post.

Context and Concepts

- VSL = individual willingness to pay (WTP) for a small annual risk change divided by the risk change.
 - If \$900 = individual WTP for a 1/10,000 annual change in mortality risk,
 - then VSL = \$9 million ($\$900 \div 1/10,000$).
- If aggregated throughout a population:
 - If \$900 = average individual WTP for a 1/10,000 annual change in mortality risk,
 - 10,000 = number of individuals experiencing the risk reduction,
 - then 1 = number of statistical cases averted ($1/10,000 * 10,000$),
 - and value = $\$900 * 10,000 = \9 million.

Context and Concepts

- Substantial confusion over terminology
 - Incorrect: “the VSL is the value that the government places on my life.”
 - Correct: “the VSL reflects the willingness of people like me to pay to reduce their own risk of death by a small amount, rather than using the money for other purchases.”
- Do we need new terminology?
 - Willingness to swap (WTS) [alternative goods and services for a microrisk reduction in the chance of sudden death (or other types of risks to life and health)]
 - The value of risk reduction (VRR)
 - The value of mortality risk (VMR)
 - The value of a standardized mortality unit (VSMU)

Methods

Human capital (productivity gains)

- Not a measure of individual WTP.
- May include both market (paid) work and nonmarket (household and volunteer) work, typically valued using wage data.
- Values are much lower than WTP estimates; exclude:
 - “Nonproductive” (leisure) time.
 - Pain and suffering, joy of living, quality of life.
 - Inconsistent with BCA framework, available guidance.
- May be reported as supplemental information on impacts.

Methods

Revealed Preferences

- Wage-risk studies (a.k.a. hedonic wage, compensating wage differentials)
 - Examine relationship between wages and risks across industries and occupations, controlling for other influencing factors.
- Averting behavior studies
 - Examine trade-off between money and/or time and protective measures (products or behaviors).
 - Can be difficult to tease out value of risk reductions from other attributes that affect price or time costs.

Methods

Stated Preferences

- Use survey techniques to investigate respondent WTP under hypothetical scenarios (contingent valuation).
 - May investigate individual WTP for a particular scenario or outcome, or
 - May present several scenarios involving different amenities or attributes and prices. In this case, WTP is derived from the way in which respondents rank, rate, or construct equivalent sets of alternatives.

Methods

- Choice between methods depends on quality of available studies and applicability to the context of interest.
 - Similarities of populations, risks.
- Revealed preference studies have the advantage of being based on actual transactions, but may address a different context.
- Stated preference studies have the advantage of allowing the researcher to tailor the scenario to the context, but are based on hypothetical transactions.
 - May be more feasible to implement in lower income settings, given the limited data available for revealed preference research.

Valuing Morbidity (Disability) Risk Reductions

Context and Concepts

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

Methods

Willingness to Pay

- No recent, criteria-driven review of empirical research available; limited research even in high income settings.
- Use benefit transfer framework to determine whether high quality, suitable estimates are available.
- Otherwise, consider application of proxy measures.

Methods

Proxies

- Direct and indirect costs of illness (COI).
 - Avoided medical costs and productivity losses.
- QALYs or DALYs monetized based on:
 - constant value per statistical life year (VSLY) or value per QALY derived from a VSL estimate; or
 - valuation function that adjusts for characteristics such as severity and duration.