Advanced Certificate in Economic Evaluation in Public Health Interventions

Measuring and Valuing Health Outcomes

Absolute Risk Reduction (ARR): The difference in event rates between a control group and an intervention group. Related terms: Relative Risk Reduction (RRR), Number Needed to Treat (NNT). ARR quantifies the actual decrease in risk attributable to an intervention, expressed as a proportion. Example: If 10 % of patients in a control arm experience a heart attack versus 6 % in the treatment arm, the ARR is 4 % (0.04). Practical application: ARR is used to translate statistical effects into concrete health benefits for decision-makers, informing resource allocation and patient counseling. Challenges: ARR can appear small even when relative effects are large; it is sensitive to baseline risk, which may vary across populations, complicating generalisation.

Adverse Event (AE): Any undesirable experience associated with the use of a health intervention. Related terms: Serious Adverse Event (SAE), Adverse Drug Reaction (ADR). AEs are measured through surveillance systems, clinical trials, or post-marketing registries. Example: A vaccine trial records mild fever as an AE, while anaphylaxis would be classified as an SAE. Practical application: Incorporating AE costs and disutility into economic evaluations ensures that harms are weighed against benefits. Challenges: Under-reporting, varying severity grading, and assigning appropriate utility decrements can bias cost-effectiveness results.

Aggregate Preference: The summed preferences of a population for different health states, often derived from utility elicitation techniques. Related terms: Individual Preference, Social Welfare Function. Aggregate preference is used to produce population-level utility weights for measures such as QALYs. Example: A national health agency conducts a population-based EQ-5D survey, aggregating individual utilities to obtain average values for each health state. Practical application: Provides a common metric for comparing interventions across disease areas. Challenges: Heterogeneity in values, cultural differences, and the ethical debate over whether individual utilities should be summed without weighting.

Benefit–Cost Ratio (BCR): The ratio of the monetary value of benefits to the monetary cost of an intervention. Related terms: Cost-Benefit Analysis (CBA), Net Benefit. BCR > 1 indicates that benefits exceed costs. Example: A smoking-cessation program yields $2.5 million in health savings for a $1 million investment, giving a BCR of 2.5. Practical application: Policymakers use BCR to prioritise projects when budgets are constrained. Challenges: Valuing health benefits in monetary terms often relies on willingness-to-pay estimates, which can be controversial and sensitive to income distribution.

Cost-Effectiveness Analysis (CEA): An economic evaluation that compares the relative costs and outcomes (often expressed in natural units) of two or more interventions. Related terms: Cost-Utility Analysis (CUA), Incremental Cost-Effectiveness Ratio (ICER). CEA calculates the additional cost per additional unit of effect, such as cost per life-year saved. Example: Comparing a new antihypertensive drug to standard therapy yields an ICER of $15 000 per life-year gained. Practical application: CEA informs reimbursement decisions and guideline development. Challenges: Selecting appropriate outcome measures, handling uncertainty, and choosing a willingness-to-pay threshold that reflects societal preferences.

Cost-Utility Analysis (CUA): A form of CEA that uses utility-based outcomes, typically QALYs or DALYs, to capture both quantity and quality of life. Related terms: Quality-Adjusted Life Year (QALY), Disability-Adjusted Life Year (DALY). CUA expresses results as cost per QALY gained. Example: An oral vaccine costs $200 per dose and yields 0.03 QALYs per child, producing an ICER of $6 667 per QALY. Practical application: CUA is the preferred method for health technology assessment agencies in many countries. Challenges: Utility measurement methods vary, and societal willingness-to-pay thresholds differ across jurisdictions.

Cost-Benefit Analysis (CBA): An evaluation that translates both costs and health outcomes into monetary terms, allowing direct comparison. Related terms: Benefit–Cost Ratio (BCR), Willingness-to-Pay (WTP). CBA often uses contingent valuation or revealed preference methods to estimate the monetary value of health gains. Example: A community water fluoridation program is assigned a monetary benefit of $5 million from reduced dental disease, against a cost of $1 million, yielding a net benefit of $4 million. Practical application: CBA can be integrated into broader public-policy appraisals that include non-health sectors. Challenges: Monetisation of health outcomes can be ethically contentious and may undervalue benefits for low-income groups.

Cost-Effectiveness Threshold (CET): The maximum amount a decision-maker is willing to pay for a unit of health gain (e.g., per QALY). Related terms: Willingness-to-Pay (WTP), Incremental Cost-Effectiveness Ratio (ICER). CETs guide interpretation of ICERs; an ICER below the CET is considered cost-effective. Example: In the United Kingdom, the National Institute for Health and Care Excellence commonly uses £20 000–£30 000 per QALY as the CET. Practical application: Provides a benchmark for health technology assessment bodies. Challenges: CETs may not reflect opportunity costs, can be politically driven, and differ between regions, leading to inconsistent decisions.

Cost-Effectiveness Plane: A graphical representation that plots incremental costs on the vertical axis and incremental effectiveness on the horizontal axis. Related terms: Incremental Cost-Effectiveness Ratio (ICER), Dominance. The plane divides outcomes into four quadrants, indicating whether an intervention is more effective, less costly, or both. Example: An intervention located in the north-east quadrant is more effective but also more costly; its ICER determines acceptability. Practical application: Visualises uncertainty through cost-effectiveness acceptability curves. Challenges: Interpretation requires statistical expertise, and the plane does not capture multi-dimensional outcomes such as equity.

Cost-Effectiveness Acceptability Curve (CEAC): A plot that shows the probability an intervention is cost-effective across a range of willingness-to-pay thresholds. Related terms: Probabilistic Sensitivity Analysis (PSA), Cost-Effectiveness Plane. CEACs are derived from Monte Carlo simulations of uncertain parameters. Example: A CEAC indicates a 75 % probability of cost-effectiveness at $30 000 per QALY. Practical application: Helps decision-makers assess robustness of results under uncertainty. Challenges: CEACs can be misinterpreted as providing definitive thresholds; they depend on the chosen distribution of parameters.

Cost-Effectiveness Frontier: The set of non-dominated interventions that provide the greatest health benefit for each level of cost. Related terms: Dominance, Incremental Cost-Effectiveness Ratio (ICER). The frontier is identified by ordering interventions by increasing cost and eliminating those that are less effective and more costly than another option. Example: In a vaccination programme, three vaccines are compared; the frontier includes the cheapest vaccine with acceptable efficacy and the most effective vaccine despite higher cost. Practical application: Guides resource allocation by highlighting efficient choices. Challenges: Data quality, heterogeneity in study populations, and changes in technology can shift the frontier over time.

Cost-Effectiveness Threshold (CET) – Country-Specific: Specific monetary values established by national health authorities. Related terms: Willingness-to-Pay (WTP), Opportunity Cost. For instance, Canada commonly references CAD 50 000 per QALY, while Brazil may use three times the gross domestic product per capita. Example: An intervention with an ICER of CAD 45 000 per QALY would be deemed cost-effective in Canada. Practical application: Aligns economic evaluation with local fiscal constraints. Challenges: Thresholds may become outdated as health systems evolve, and they may not reflect true opportunity costs or equity considerations.

Cost-Effectiveness Threshold – Incremental: A dynamic threshold that reflects the marginal productivity of the health system rather than a fixed monetary value. Related terms: Opportunity Cost, Marginal Cost-Effectiveness Ratio. This approach estimates the health gain forgone by allocating resources to a new intervention. Example: If the average cost per QALY in current programmes is $12 000, the incremental threshold would be set around this figure. Practical application: Provides a more realistic benchmark for new technologies. Challenges: Requires robust data on existing programme efficiency, which may be unavailable in many settings.

Cost-Effectiveness Threshold – Willingness-to-Pay (WTP): The amount an individual or society is prepared to exchange for a health gain. Related terms: Contingent Valuation, Discrete Choice Experiment (DCE). WTP is elicited through surveys that ask respondents how much they would pay for a specified health improvement. Example: A DCE finds an average WTP of $25 000 for a one-year gain in perfect health. Practical application: Informs the setting of CETs where no official threshold exists. Challenges: Responses can be biased by income, framing effects, and hypothetical bias.

Cost-Effectiveness Threshold – Opportunity Cost: The health outcomes forgone when resources are diverted from existing services to a new intervention. Related terms: Marginal Productivity, Budget Impact Analysis. Estimating opportunity cost requires knowledge of the health system's current efficiency. Example: If the health system can produce 0.5 QALYs per $10 000 spent, the opportunity cost of a new drug costing $20 000 per QALY is 0.25 QALYs. Practical application: Aligns decisions with the principle of maximizing health gain from limited resources. Challenges: Data scarcity, variation across regions, and the difficulty of quantifying non-health benefits.

Cost-Effectiveness Threshold – Societal Perspective: A threshold that incorporates both health sector costs and broader societal costs (e.g., productivity losses). Related terms: Societal Willingness-to-Pay, Full Economic Evaluation. When a societal perspective is adopted, the threshold may be higher because it captures additional benefits. Example: A mental-health intervention that reduces absenteeism may be deemed cost-effective at a higher threshold due to productivity gains. Practical application: Encourages inclusion of cross-sectoral impacts in decision-making. Challenges: Valuing non-health outcomes consistently and avoiding double-counting.

Cost-Utility Ratio (CUR): The ratio of cost to utility-based outcomes, such as cost per QALY or cost per DALY averted. Related terms: Incremental Cost-Effectiveness Ratio (ICER), Cost-Effectiveness Analysis (CEA). CUR provides a single figure summarising the efficiency of an intervention. Example: A surgical procedure costs $30 000 and yields 2 QALYs, giving a CUR of $15 000 per QALY. Practical application: Facilitates comparison across interventions with different clinical endpoints. Challenges: Sensitivity to utility measurement, discounting, and the choice of time horizon.

Cost-Utility Analysis (CUA) – Markov Model: The use of a Markov modelling framework to estimate costs and QALYs over time, accounting for transitions between health states. Related terms: Markov Process, Transition Probabilities. Markov models are especially useful for chronic diseases with recurring events. Example: A CUA of a hepatitis-C therapy models yearly transitions among "chronic infection," "cirrhosis," "liver cancer," and "death." Practical application: Captures long-term costs and health outcomes beyond trial follow-up. Challenges: Requires reliable transition data, can become complex with many health states, and may suffer from the "memoryless" assumption.

Cost-Utility Analysis – Time Horizon: The period over which costs and health outcomes are measured in a CUA. Related terms: Discount Rate, Lifetime Horizon. A longer horizon captures more downstream benefits but increases uncertainty. Example: A vaccine's benefits may accrue over a lifetime, so a lifetime horizon is appropriate. Practical application: Ensures that interventions with delayed benefits are not undervalued. Challenges: Selecting an appropriate horizon, handling extrapolation, and applying consistent discount rates.

Cost-Utility Analysis – Discount Rate: The annual rate used to convert future costs and health outcomes into present values. Related terms: Time Preference, Present Value. Standard practice often applies a 3 % discount rate to both costs and QALYs, though some guidelines recommend differential rates. Example: Discounting a QALY gained ten years from now at 3 % reduces its present value to about 74 % of its nominal value. Practical application: Reflects societal preference for immediate benefits over future ones. Challenges: Choice of rate influences results; higher rates penalise interventions with long-term benefits, potentially biasing against preventive measures.

Cost-Utility Analysis – Sensitivity Analysis: Examination of how results change when key parameters vary. Related terms: Deterministic Sensitivity Analysis, Probabilistic Sensitivity Analysis (PSA). Sensitivity analysis identifies drivers of uncertainty and tests robustness. Example: Varying the utility weight for a health state from 0.7 to 0.9 alters the ICER by 15 %. Practical application: Provides decision-makers with a range of plausible outcomes. Challenges: Requires transparent reporting, selection of appropriate distributions, and may be computationally intensive for complex models.

Cost-Utility Analysis – Willingness-to-Pay (WTP) Threshold: The monetary amount a society is prepared to pay for one additional QALY. Related terms: Cost-Effectiveness Threshold (CET), Incremental Cost-Effectiveness Ratio (ICER). The WTP threshold determines whether an ICER is acceptable. Example: An ICER of $45 000 per QALY is deemed cost-effective in a country with a $50 000 WTP threshold. Practical application: Aligns economic evaluation with policy criteria. Challenges: Determining an appropriate threshold that reflects budget constraints and societal values.

Cost-Utility Analysis – Willingness-to-Pay (WTP) Elicitation: Methods used to estimate how much individuals value health gains. Related terms: Contingent Valuation, Discrete Choice Experiment (DCE). Common techniques include surveys that ask respondents to state a maximum price they would pay for a health improvement. Example: A DCE finds an average WTP of $30 000 for a 0.5 QALY gain. Practical application: Supplies empirical data for setting CETs in the absence of official benchmarks. Challenges: Respondent bias, income effects, and the hypothetical nature of stated preferences.

Cost-Utility Analysis – Willingness-to-Pay (WTP) for Risk Reduction: The monetary value individuals assign to a reduction in the probability of adverse health outcomes. Related terms: Value of a Statistical Life (VSL), Risk Premium. WTP for risk reduction can be derived by dividing the monetary amount by the risk reduction magnitude. Example: If a person would pay $100 to lower their 1 % chance of disease, the implied value per statistical life is $10 000. Practical application: Used in environmental health, occupational safety, and public-health policy to monetize risk reductions. Challenges: Small risk changes may be difficult for respondents to comprehend, leading to inconsistent valuations.

Cost-Utility Analysis – Willingness-to-Pay (WTP) for Quality-Adjusted Life Years: The amount a society is ready to exchange for a QALY. Related terms: Cost-Effectiveness Threshold (CET), Value of a Statistical Life Year (VSLY). WTP per QALY can be derived by dividing the VSL by the average remaining life expectancy. Example: If VSL is $5 million and average remaining life expectancy is 30 years, the implied WTP per QALY is about $166 667. Practical application: Provides a theoretical basis for setting CETs. Challenges: VSL estimates vary widely across studies, and translating VSL to QALY values may oversimplify complex preferences.

Cost-Utility Analysis – Willingness-to-Pay (WTP) for Preventive Interventions: The amount individuals would pay for a health programme that reduces future disease risk. Related terms: Preventive Value, Discounted WTP. Preventive WTP often exceeds the cost of the intervention, justifying investment. Example: A community receives a survey indicating a $200 WTP for a daily vitamin D supplement that reduces osteoporosis risk. Practical application: Supports funding for vaccination, screening, and health-promotion programmes. Challenges: Anticipated benefits may be uncertain, and respondents may overstate willingness due to social desirability bias.

Cost-Utility Analysis – Willingness-to-Pay (WTP) for Treatment: The monetary amount individuals would allocate to obtain a therapeutic benefit. Related terms: Treatment Value, Health State Valuation. WTP for treatment can be elicited directly or inferred from market prices. Example: Patients with chronic pain indicate a $500 monthly WTP for a new analgesic that offers a 0.2 QALY gain per year. Practical application: Helps gauge patient-centred value and informs price negotiations. Challenges: Heterogeneity in ability to pay, ethical concerns about equity, and potential for preference reversal.

Cost-Utility Analysis – Willingness-to-Pay (WTP) for Treatment Adherence: The monetary value individuals assign to interventions that improve medication adherence. Related terms: Adherence Incentives, Behavioural Economics. WTP can be used to design incentive schemes. Example: A study finds patients are willing to pay $30 per month for a reminder app that improves adherence by 15 %. Practical application: Guides design of cost-effective adherence programmes. Challenges: Measuring actual adherence improvements, accounting for long-term benefits, and ensuring incentives do not create unintended consequences.

Cost-Utility Analysis – Willingness-to-Pay (WTP) for Telehealth: The amount patients or societies would pay for remote health services. Related terms: Digital Health Valuation, Access to Care. WTP studies often compare telehealth to in-person visits. Example: Rural patients indicate a $40 WTP per virtual consultation, reflecting saved travel time and costs. Practical application: Supports reimbursement policies for telemedicine. Challenges: Variation in technology acceptance, quality perception, and the need to adjust for internet access disparities.

Cost-Utility Analysis – Willingness-to-Pay (WTP) for Vaccination: The monetary amount individuals would allocate to receive a vaccine. Related terms: Vaccine Acceptance, Risk Perception. WTP can be influenced by disease severity, vaccine efficacy, and trust in health authorities. Example: During an influenza season, surveys reveal a $25 WTP per vaccine dose among adults aged 65+. Practical application: Informs pricing strategies and subsidy levels. Challenges: Seasonal variability, misinformation, and differing health literacy levels.

Cost-Utility Analysis – Willingness-to-Pay (WTP) for Wellness Programs: The amount participants would pay for programmes that promote health and prevent disease. Related terms: Health Promotion, Preventive Valuation. WTP may be measured through contingent valuation or revealed preference approaches. Example: Employees report a $150 WTP for a corporate wellness package that includes fitness classes and nutrition counseling. Practical application: Helps employers decide on investment levels for employee health initiatives. Challenges: Attribution of health benefits to specific components, potential selection bias, and variability in perceived value.

Cost-Utility Analysis – Willingness-to-Pay (WTP) for Whole-Population Interventions: The aggregate monetary value society places on interventions that affect entire populations, such as water fluoridation or air-quality regulations. Related terms: Public Goods Valuation, Collective Benefit. WTP can be estimated using travel cost methods, hedonic pricing, or contingent valuation. Example: Residents of a city express a $10 million WTP for a new public park that improves air quality and recreation. Practical application: Justifies public-sector investment in infrastructure that yields health benefits. Challenges: Capturing non-market benefits, dealing with free-rider problems, and ensuring representativeness of survey samples.

Cost-Utility Analysis – Willingness-to-Pay (WTP) for Health-Related Quality of Life (HRQoL): The monetary amount individuals would exchange for improvements in their perceived health status. Related terms: HRQoL Instruments, Utility Weights. WTP for HRQoL can be elicited alongside utility measurement tools such as EQ-5D. Example: A survey finds that patients with chronic obstructive pulmonary disease would pay $200 per month for a treatment that raises their EQ-5D index from 0.6 to 0.8. Practical application: Provides a direct link between HRQoL gains and monetary valuation. Challenges: Separating the effect of health from other life domains, potential income bias, and ensuring respondents understand the abstract nature of HRQoL improvements.

Cost-Utility Analysis – Willingness-to-Pay (WTP) for Life-Extending Treatments: The monetary value assigned to additional years of life, regardless of health quality. Related terms: Value of a Statistical Life (VSL), Life-Year Valuation. WTP can be derived from labour market data or survey methods. Example: A study estimates that individuals would pay $50 000 for a therapy that extends life expectancy by one year in a terminal illness. Practical application: Informs pricing of high-cost oncology drugs. Challenges: Ethical concerns about placing a price on life, heterogeneity in preferences, and the influence of cultural attitudes toward death.

Cost-Utility Analysis – Willingness-to-Pay (WTP) for Quality-Adjusted Life Years (QALYs): The monetary amount society is prepared to spend for a QALY. Related terms: Cost-Effectiveness Threshold (CET), Value of a Statistical Life Year (VSLY). WTP per QALY can be estimated by dividing VSL by average remaining life expectancy. Example: If VSL is $6 million and average remaining life expectancy is 40 years, the implied WTP per QALY is $150 000. Practical application: Provides empirical grounding for CET setting. Challenges: VSL estimates vary across studies, may not reflect health-specific preferences, and can be sensitive to income distribution.

Cost-Utility Analysis – Willingness-to-Pay (WTP) for Quality-Adjusted Life Years (QALYs) in Low-Income Settings: The monetary value placed on QALYs in resource-constrained environments. Related terms: Equity-Weighted WTP, Threshold Adjustments. Empirical studies often find lower WTP per QALY compared with high-income nations. Example: A study in a low-income country reports a WTP of $500 per QALY, reflecting limited disposable income. Practical application: Guides appropriate threshold selection for health technology assessment in low-resource settings. Challenges: Ensuring that low WTP values do not perpetuate inequities, accounting for purchasing power parity, and integrating societal preferences beyond income.

Cost-Utility Analysis – Willingness-to-Pay (WTP) for Quality-Adjusted Life Years (QALYs) with Equity Considerations: Adjusted WTP values that give higher weight to health gains among disadvantaged groups. Related terms: Equity-Weighted Cost-Effectiveness, Social Value Judgment. Equity weights can be applied to QALYs to reflect societal preferences for reducing health inequalities. Example: An equity weight of 1.5 is applied to QALYs gained by low-income populations, effectively raising the WTP per QALY for those groups. Practical application: Supports decision-makers who aim to balance efficiency with fairness. Challenges: Determining appropriate equity weights, potential conflict with efficiency goals, and the difficulty of obtaining consensus on societal values.

Cost-Utility Analysis – Willingness-to-Pay (WTP) for Quality-Adjusted Life Years (QALYs) with Discounting: The impact of discount rates on the monetary value of future QALYs. Related terms: Present Value of QALYs, Time Preference. Discounting reduces the present value of QALYs accrued in later years, affecting cost-effectiveness calculations. Example: A QALY gained ten years from now, discounted at 3 %, is valued at 0.74 of its undiscounted value, lowering the implied WTP per QALY for long-term interventions. Practical application: Ensures consistency between cost and outcome discounting. Challenges: Choosing an appropriate discount rate, handling divergent discount rates for costs versus health outcomes, and communicating the effect of discounting to stakeholders.

Cost-Utility Analysis – Willingness-to-Pay (WTP) for Quality-Adjusted Life Years (QALYs) with Sensitivity Analysis: Exploration of how variations in WTP per QALY affect cost-effectiveness conclusions. Related terms: Probabilistic Sensitivity Analysis (PSA), Threshold Analysis. Analysts test a range of WTP values to see at which points an intervention becomes cost-effective. Example: A PSA shows a 60 % probability that a new drug is cost-effective at a WTP of $30 000 per QALY, rising to 85 % at $50 000 per QALY. Practical application: Provides decision-makers with a nuanced view of uncertainty. Challenges: Communicating probabilistic results, selecting a plausible range of WTP values, and avoiding misinterpretation of probability as certainty.

Cost-Utility Analysis – Willingness-to-Pay (WTP) for Quality-Adjusted Life Years (QALYs) with Varying Population Preferences: Accounting for heterogeneity in WTP across demographic groups. Related terms: Subgroup Analysis, Preference Heterogeneity. Different age, gender, or cultural groups may assign distinct monetary values to QALYs. Example: Elderly respondents express a higher WTP per QALY ($60 000) than younger adults ($30 000). Practical application: Enables tailored threshold setting for specific programmes (e.g., geriatric care). Challenges: Data collection burden, risk of inequitable resource allocation, and the need for transparent weighting procedures.

Cost-Utility Analysis – Willingness-to-Pay (WTP) for Quality-Adjusted Life Years (QALYs) with Value of Statistical Life (VSL) Integration: Deriving WTP per QALY from VSL estimates. Related terms: Value of a Statistical Life Year (VSLY), Health Economic Valuation. VSL provides a monetary value for mortality risk reductions; dividing by average life expectancy yields a per-QALY figure. Example: A VSL of $7 million and an average remaining life expectancy of 35 years imply a WTP of $200 000 per QALY. Practical application: Offers a theoretically grounded approach to setting CETs when direct WTP data are unavailable. Challenges: VSL estimates vary widely, may not reflect health-specific preferences, and can be influenced by income and cultural factors.

Cost-Utility Analysis – Willingness-to-Pay (WTP) for Quality-Adjusted Life Years (QALYs) with Willingness-to-Pay (WTP) Elicitation Methods: Different techniques for measuring WTP per QALY. Related terms: Contingent Valuation, Discrete Choice Experiment (DCE), Standard Gamble. Each method has strengths and limitations regarding realism, cognitive burden, and bias. Example: A DCE yields a WTP per QALY of $45 000, while a contingent valuation approach produces $55 000 for the same health state. Practical application: Enables selection of appropriate elicitation technique based on context and resources. Challenges: Methodological consistency, respondent understanding, and translating stated preferences into reliable threshold values.

Cost-Utility Analysis – Willingness-to-Pay (WTP) for Quality-Adjusted Life Years (QALYs) with Zero-Cost Interventions: Valuing health gains from interventions that have no direct financial cost (e.g., lifestyle changes). Related terms: Non-Monetary Benefits, Opportunity Cost. Even zero-cost interventions can have associated resource use (e.g., time). Example: A community walking programme requires volunteer time, which can be valued using a WTP approach to estimate the implicit cost. Practical application: Captures the full economic impact of preventive measures. Challenges: Assigning monetary values to time, dealing with intangible benefits, and ensuring comparability with costed interventions.

Cost-Utility Analysis – Willingness-to-Pay (WTP) for Quality-Adjusted Life Years (QALYs) with Discounted Benefits: Adjusting WTP for the time preference of health gains. Related terms: Present Value of QALYs, Discount Rate. Discounting reduces the present value of future QALYs, thereby affecting the implied WTP per QALY. Example: A QALY gained 15 years from now, discounted at 3 %, is worth 0.64 of its undiscounted value, lowering the effective WTP per QALY for long-term interventions. Practical application: Aligns WTP estimates with standard economic evaluation practice. Challenges: Selecting appropriate discount rates, handling divergent rates for costs versus outcomes, and communicating the impact of discounting to non-technical audiences.

Cost-Utility Analysis – Willingness-to-Pay (WTP) for Quality-Adjusted Life Years (QALYs) with Equity Adjustments: Modifying WTP per QALY to reflect societal preferences for reducing health disparities. Related terms: Equity-Weighted Cost-Effectiveness, Social Value Judgment. Equity weights can be applied to QALYs gained by disadvantaged groups, effectively raising the WTP for those gains. Example: An equity weight of 1.3 is applied to QALYs for low-income populations, increasing the effective WTP from $30 000 to $39 000 per QALY. Practical application: Supports policy decisions that balance efficiency with fairness. Challenges: Determining appropriate equity weights, potential conflict with efficiency goals, and achieving consensus on societal values.

Cost-Utility Analysis – Willingness-to-Pay (WTP) for Quality-Adjusted Life Years (QALYs) with Variable Discount Rates: Exploring the effect of using different discount rates for costs and health outcomes. Related terms: Differential Discounting, Time Preference. Some guidelines recommend a lower discount rate for health benefits than for costs. Example: Applying a 1.5 % discount rate to QALYs and a 3 % rate to costs can increase the cost-effectiveness of preventive interventions. Practical application: Reflects the societal value placed on future health. Challenges: Lack of consensus on appropriate rates, increased complexity in analysis, and potential for inconsistent comparisons across studies.

Cost-Utility Analysis – Willingness-to-Pay (WTP) for Quality-Adjusted Life Years (QALYs) with Willingness-to-Pay (WTP) Threshold Sensitivity: Evaluating how changes in the WTP threshold affect the decision outcome. Related terms: Threshold Analysis, Incremental Cost-Effectiveness Ratio (ICER). Analysts may present results for multiple thresholds to illustrate robustness. Example: An intervention with an ICER of $40 000 per QALY is cost-effective at a $50 000 threshold but not at $30 000. Practical application: Provides policymakers with transparent information on the impact of threshold selection. Challenges: Communicating uncertainty, avoiding arbitrary thresholds, and ensuring thresholds reflect budgetary reality.

Cost-Utility Analysis – Willingness-to-Pay (WTP) for Quality-Adjusted Life Years (QALYs) with Willingness-to-Pay (WTP) for Health Gains: Direct measurement of the monetary value individuals assign to health improvements. Related terms: Contingent Valuation, Discrete Choice Experiment (DCE). WTP for health gains can be expressed per QALY, enabling comparison across interventions. Example: A DCE finds an average WTP of $35 000 for a one-QALY improvement. Practical application: Supplies empirical evidence for setting cost-effectiveness thresholds. Challenges: Potential bias in stated preferences, income effects, and ensuring respondents understand abstract health concepts.

Cost-Utility Analysis –