Professional Certificate in Health Economics and Market Access

Pharmacoeconomics and Outcomes Research

Absolute Risk Reduction (ARR) – a measure of the difference in event rates between control and treatment groups. Related terms: Relative Risk Reduction, Number Needed to Treat. ARR = control event rate – experimental event rate. Example: if 10% of patients on standard care experience a heart attack versus 6% on a new drug, ARR = 4%. Practical use: informs clinicians how many patients benefit per 100 treated. Challenge: small absolute differences can be misleading if baseline risk is low.

Adverse Event (AE) – any undesirable medical occurrence in a patient receiving a pharmaceutical product. Related terms: Serious Adverse Event, Pharmacovigilance. AEs are recorded regardless of causality. Example: mild nausea reported in a trial of an antihistamine. Practical application: AEs feed into safety profiles that affect market access decisions. Challenge: under-reporting and attribution bias can distort true incidence.

Adjusted Incremental Cost-Effectiveness Ratio (ICER) – the ratio of the difference in costs to the difference in outcomes between two interventions after statistical adjustment. Related terms: Unadjusted ICER, Sensitivity Analysis. Adjustments may control for baseline imbalances. Example: after propensity-score matching, the adjusted ICER of a biologic versus standard therapy is $45,000 per QALY. Practical use: provides a more accurate estimate for reimbursement bodies. Challenge: selection of covariates and model specification can influence results.

Aggregate Data – summary information compiled from multiple individuals, such as means, totals, or rates. Related terms: Individual Patient Data, Meta-analysis. Example: a published trial reports mean blood pressure reduction of 8 mmHg. Practical application: often the only data available for health-technology assessments (HTAs) in early stages. Challenge: loss of granularity limits subgroup analyses and may hide heterogeneity.

Allocation Efficiency – the degree to which resources are directed toward interventions that generate the greatest health benefit per unit cost. Related terms: Cost-Effectiveness, Resource Allocation. Example: allocating funds to vaccination programs yields higher health gains than spending on low-impact treatments. Practical use: guides policymakers in budgeting. Challenge: ethical considerations and equity concerns may conflict with pure efficiency.

Budget Impact Analysis (BIA) – an economic evaluation estimating the financial consequences of adopting a new health technology within a specific budget context. Related terms: Cost-Effectiveness Analysis, Affordability. Example: a BIA projects that introducing a new oncology drug will increase a hospital's drug spend by $2 million over five years. Practical application: helps payers decide whether they can absorb the cost. Challenge: requires accurate utilization forecasts and may be sensitive to price changes.

Cost-Benefit Analysis (CBA) – an economic evaluation that compares costs and benefits, both expressed in monetary units. Related terms: Cost-Effectiveness Analysis, Willingness-to-Pay. Example: a CBA of a smoking-cessation program calculates a net benefit of $150 million from reduced healthcare costs and

productivity gains. Practical use: enables comparison across sectors. Challenge: assigning monetary values to health outcomes (e.g., life years) is contentious.

Cost-Effectiveness Analysis (CEA) – compares the relative costs and outcomes (often health effects) of two or more interventions. Related terms: Incremental Cost-Effectiveness Ratio, Quality-Adjusted Life Year. Example: a CEA finds that a new insulin analog costs $30,000 per QALY versus $25,000 for the standard analog. Practical application: informs reimbursement thresholds. Challenge: results depend on perspective (societal vs payer) and chosen outcome measures.

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, ICER. Example: the UK's National Institute for Health and Care Excellence (NICE) commonly uses £20,000–£30,000 per QALY. Practical use: serves as a benchmark for judging ICERs. Challenge: thresholds may not reflect true opportunity costs or societal values.

Cost-Utility Analysis (CUA) – a form of CEA that incorporates patient preferences by using utility-based outcomes such as QALYs. Related terms: Quality-Adjusted Life Year, Health State Utility. Example: a CUA of a migraine prophylactic yields 0.02 QALYs gained per patient at an incremental cost of $500. Practical application: facilitates comparison of interventions across disease areas. Challenge: utility measurement methods (e.g., EQ-5D, SF-6D) can produce divergent results.

Discounting – the process of reducing future costs and outcomes to present values, reflecting time preference. Related terms: Discount Rate, Present Value. Example: applying a 3 % annual discount rate, a cost incurred in five years is multiplied by 0.86. Practical use: standardises analyses over multi-year horizons. Challenge: choice of discount rate can materially affect cost-effectiveness conclusions.

Economic Modeling – the construction of mathematical representations of disease progression, treatment pathways, and associated costs/outcomes. Related terms: Decision Tree, Markov Model, Simulation. Example: a Markov model simulates transitions among health states for patients with chronic kidney disease over a lifetime horizon. Practical application: fills data gaps when trial evidence is limited. Challenge: model validity depends on assumptions and data quality.

Effectiveness – the extent to which an intervention produces the intended health benefit under real-world conditions. Related terms: Efficacy, Real-World Evidence. Example: a vaccine's efficacy in clinical trials is 95 % whereas its effectiveness in the community is 85 %. Practical use: informs payers about expected performance post-launch. Challenge: effectiveness can vary by population, adherence, and health system factors.

EQ-5D – a generic health-related quality-of-life instrument that yields a utility score for health states. Related terms: Health Utility Index, SF-6D. The instrument comprises five dimensions (mobility, self-care, usual activities, pain/discomfort, anxiety/depression) each with five levels. Example: a patient reports a score of 0.78, indicating moderate impairment. Practical application: widely used in CUAs to calculate QALYs. Challenge: ceiling effects and cultural differences may limit sensitivity.

Evidence-Based Medicine (EBM) – the conscientious, explicit, and judicious use of current best evidence in

making decisions about patient care. Related terms: Systematic Review, Clinical Guidelines. Example: clinicians follow EBM by integrating randomized trial data with patient preferences. Practical use: ensures that health-technology assessments rely on robust data. Challenge: rapid emergence of new evidence can outpace guideline updates.

External Validity – the degree to which study findings can be generalised to other settings, populations, or times. Related terms: Generalisability, Real-World Evidence. Example: a trial conducted in tertiary hospitals may have limited external validity for primary-care settings. Practical application: influences the weight given to trial data in HTA dossiers. Challenge: heterogeneity across health systems reduces applicability.

Health-Related Quality of Life (HRQoL) – a multi-dimensional concept that reflects a person's perceived physical and mental health over time. Related terms: Utility, Patient-Reported Outcome. Example: HRQoL is measured using the SF-36 questionnaire in a chronic heart failure study. Practical use: HRQoL data feed into QALY calculations. Challenge: subjective nature and cultural bias can affect comparability.

Health Technology Assessment (HTA) – a systematic evaluation of the properties, effects, and impacts of health technologies, including medical devices, drugs, procedures, and organisational systems. Related terms: Reimbursement Decision, Evidence Synthesis. Example: HTA agencies review clinical and economic evidence before recommending a new immunotherapy for reimbursement. Practical application: guides policy and formulary decisions. Challenge: balancing speed of access with thoroughness of evaluation.

Incremental Cost-Effectiveness Ratio (ICER) – the ratio of the difference in costs to the difference in effectiveness between two interventions. Related terms: Cost-Effectiveness, Net Monetary Benefit. Formula: $(\text{Cost\_A} - \text{Cost\_B}) / (\text{Effect\_A} - \text{Effect\_B})$. Example: an ICER of $40,000 per QALY for a novel anticoagulant versus warfarin. Practical use: benchmarked against CETs to judge value. Challenge: uncertainty around both numerator and denominator requires probabilistic analysis.

Incremental Net Benefit (INB) – a reformulation of the ICER that expresses the monetary value of health gains minus incremental costs. Related terms: Willingness-to-Pay, Cost-Effectiveness Threshold. Formula: $(\lambda \times \Delta\text{Effect}) - \Delta\text{Cost}$, where λ is the CET. Example: with $\lambda = \$50{,}000$ per QALY, $\Delta\text{Effect} = 0.03$ QALY, $\Delta\text{Cost} = \$800$, $\text{INB} = \$50{,}000 \times 0.03 - \$800 = \$700$. Practical application: simplifies statistical testing of cost-effectiveness. Challenge: requires selection of an appropriate λ.

Intention-to-Treat (ITT) Analysis – a principle where participants are analysed in the groups to which they were originally assigned, regardless of adherence. Related terms: Per-Protocol Analysis, Crossover. Example: in a trial of a new antihypertensive, all randomised participants are included in the ITT population. Practical use: preserves randomisation benefits and reflects real-world use. Challenge: non-adherence can dilute treatment effects, leading to conservative estimates.

Markov Model – a type of economic model that represents transitions between mutually exclusive health states over discrete time cycles. Related terms: State Transition Model, Cycle Length. Example: a Markov model for hepatitis C includes states: chronic infection, compensated cirrhosis, decompensated cirrhosis, liver transplant, death. Practical application: captures long-term disease progression and recurrent events. Challenge: requires reliable transition probabilities and may oversimplify complex pathways.

Maximum Acceptable Price (MAP) – the highest price at which a new product is considered cost-effective given a specific CET. Related terms: Price Negotiation, Budget Impact. Example: for a CET of $30,000 per QALY, the MAP of a novel therapy is calculated at $12,000 per patient per year. Practical use: informs payer negotiations and manufacturer pricing strategies. Challenge: MAP varies across countries and payer perspectives.

Net Monetary Benefit (NMB) – an alternative expression of cost-effectiveness that converts health gains into monetary terms and subtracts incremental costs. Related terms: Incremental Net Benefit, Willingness-to-Pay. Formula: $(\lambda \times \Delta\text{Effect}) - \Delta\text{Cost}$. Example: using $\lambda = \$100{,}000$ per QALY, $\Delta\text{Effect} = 0.05$ QALY, $\Delta\text{Cost} = \$3{,}000$, NMB = $2,000. Practical application: facilitates probabilistic sensitivity analysis. Challenge: depends heavily on the chosen λ.

Number Needed to Treat (NNT) – the number of patients that must be treated to prevent one additional adverse event. Related terms: Absolute Risk Reduction, Clinical Impact. Formula: $1 / \text{ARR}$. Example: with an ARR of 0.04, NNT = 25. Practical use: communicates effectiveness in an intuitive manner to clinicians and payers. Challenge: NNT varies with baseline risk and follow-up duration.

Patient-Reported Outcome (PRO) – any report of the status of a patient's health condition that comes directly from the patient, without interpretation by clinicians or others. Related terms: HRQoL, Instrument Validation. Example: a PRO questionnaire captures pain intensity in osteoarthritis patients. Practical application: PROs inform value-based pricing and label claims. Challenge: ensuring reliability, cultural adaptation, and regulatory acceptance.

Pharmacoeconomics – the branch of health economics that evaluates the cost and value of pharmaceuticals. Related terms: Cost-Effectiveness, Market Access. Example: pharmacoeconomic studies assess whether a new biologic provides sufficient health gain relative to its price. Practical use: supports reimbursement dossiers and formulary decisions. Challenge: data scarcity, methodological heterogeneity, and differing payer priorities.

Pharmacovigilance – the science and activities relating to the detection, assessment, understanding, and prevention of adverse effects or any other drug-related problems. Related terms: Safety Reporting, Post-Marketing Surveillance. Example: a national database collects spontaneous AE reports for a newly launched antidiabetic drug. Practical application: informs risk-management plans and label updates. Challenge: under-reporting and causality assessment can limit signal detection.

Population-Based Study – an observational study that includes all individuals in a defined population, often using administrative databases or registries. Related terms: Cohort Study, Real-World Evidence. Example: a national claims database is used to assess the long-term costs of heart failure management. Practical use: provides large-scale effectiveness and cost data. Challenge: confounding and data quality issues may bias results.

Probabilistic Sensitivity Analysis (PSA) – a technique that assesses uncertainty by assigning probability distributions to model parameters and running repeated simulations. Related terms: Monte Carlo Simulation, Cost-Effectiveness Acceptability Curve. Example: a PSA generates 10,000 iterations of a

cost-utility model, producing a distribution of ICERs. Practical application: quantifies the probability that an intervention is cost-effective at various CETs. Challenge: requires robust parameter distributions and computational resources.

Quality-Adjusted Life Year (QALY) – a composite measure that combines length of life with health-related quality of life, where 1 QALY equals one year in perfect health. Related terms: Utility, Cost-Utility Analysis. Example: a patient lives 2 years at a utility of 0.6, yielding 1.2 QALYs. Practical use: standard metric for comparing disparate health interventions. Challenge: ethical concerns about valuing lives differently and methodological issues in utility elicitation.

Real-World Evidence (RWE) – clinical evidence regarding the usage and potential benefits or risks of a medical product derived from analysis of real-world data. Related terms: Real-World Data, Pragmatic Trial. Example: registry data show that a new anticoagulant reduces stroke incidence by 15 % in routine clinical practice. Practical application: complements RCT data in HTA submissions. Challenge: data heterogeneity, missingness, and confounding.

Real-World Data (RWD) – data relating to patient health status and the delivery of health care routinely collected from a variety of sources. Related terms: Electronic Health Record, Claims Database. Example: prescription claims provide information on drug utilization patterns. Practical use: fuels RWE studies, budget impact models, and post-marketing safety surveillance. Challenge: data governance, privacy, and standardisation.

Reference Case – a set of methodological assumptions (perspective, time horizon, discount rate, etc.) used as a benchmark for economic evaluations. Related terms: Base-Case Analysis, Sensitivity Analysis. Example: NICE's reference case adopts a 3.5 % discount rate and a NHS perspective. Practical application: ensures comparability across submissions. Challenge: rigid reference cases may not reflect local health-system nuances.

Relative Risk (RR) – the ratio of the probability of an event occurring in the treatment group versus the control group. Related terms: Odds Ratio, Hazard Ratio. Example: an RR of 0.75 indicates a 25 % risk reduction with the experimental therapy. Practical use: conveys treatment effect magnitude. Challenge: interpretation can be misleading when baseline risk is high.

Resource Utilisation – the quantity of health-care services (e.g., hospital days, physician visits) consumed by patients. Related terms: Cost Data, Utilisation Patterns. Example: a study records average inpatient length of stay of 4.2 days for patients on a new chemotherapy regimen. Practical application: feeds into cost calculations for economic models. Challenge: variability across settings and the need for accurate unit cost attribution.

Scenario Analysis – an exploratory technique that evaluates the impact of alternative assumptions on model outcomes. Related terms: Sensitivity Analysis, Deterministic Analysis. Example: a scenario assumes a 20 % price discount for a drug, resulting in a lower ICER. Practical use: helps decision-makers understand how changes in key drivers affect cost-effectiveness. Challenge: selection of plausible scenarios and communication of results.

Sensitivity Analysis – the systematic variation of model inputs to assess the robustness of results. Related terms: One-Way Sensitivity, Tornado Diagram. Example: varying the utility value for a health state between 0.5 and 0.8 changes the ICER from $35,000 to $55,000 per QALY. Practical application: identifies parameters with greatest influence on outcomes. Challenge: may not capture joint parameter uncertainty.

Standardised Mortality Ratio (SMR) – the ratio of observed deaths in a study population to expected deaths based on a reference population. Related terms: Observed-to-Expected Ratio, Epidemiologic Measure. Example: an SMR of 1.2 indicates 20 % higher mortality than the general population. Practical use: assesses disease burden and informs cost-of-illness studies. Challenge: requires accurate reference rates and adjustment for age-sex distribution.

Survival Analysis – statistical methods for analyzing time-to-event data, often incorporating censoring. Related terms: Kaplan-Meier Curve, Cox Proportional Hazards Model. Example: a Kaplan-Meier plot shows median overall survival of 18 months for patients receiving immunotherapy. Practical application: provides transition probabilities for Markov models. Challenge: handling non-proportional hazards and competing risks.

Systematic Review – a structured, comprehensive synthesis of research evidence that follows a predefined protocol. Related terms: Meta-analysis, Evidence Grading. Example: a systematic review aggregates RCTs comparing two antihypertensive agents. Practical use: forms the evidence base for HTA dossiers. Challenge: publication bias and heterogeneity can limit conclusions.

Time-Trade-Off (TTO) – a utility elicitation technique where respondents trade length of life for quality of life. Related terms: Standard Gamble, Utility Measurement. Example: a respondent is willing to give up 2 years of 10-year life expectancy to avoid a health state considered intolerable, yielding a utility of 0.8. Practical application: generates health state utilities for CUAs. Challenge: respondent understanding and cultural differences affect results.

Utility – a numeric representation of the preference for a given health state, anchored at 0 (dead) and 1 (perfect health). Related terms: QALY, Preference-Based Measure. Example: a utility of 0.65 reflects moderate impairment. Practical use: core input for cost-utility analyses. Challenge: measurement methods (direct vs indirect) can produce divergent values.

Value-Based Pricing (VBP) – a pricing strategy that sets drug prices based on the value they deliver, often expressed as cost per QALY. Related terms: Cost-Effectiveness, Price Negotiation. Example: a health system adopts VBP, linking reimbursement to an ICER below $25,000 per QALY. Practical application: aligns incentives for manufacturers to demonstrate value. Challenge: requires robust evidence and consensus on thresholds.

Willingness-to-Pay (WTP) – the maximum amount an individual or society is prepared to spend to gain a unit of health benefit. Related terms: Cost-Effectiveness Threshold, Contingent Valuation. Example: a WTP of $50,000 per QALY is often cited in US cost-effectiveness studies. Practical use: informs CET selection and NMB calculations. Challenge: WTP varies across populations and may be influenced by income or cultural factors.

Zero-Order Markov Model – a model in which the probability of moving to a future health state depends only on the current state, not on previous history. Related terms: Memoryless Property, State Transition. Example: a disease progression model where each cycle's transition probabilities are fixed regardless of prior cycles. Practical application: simplifies modeling of chronic conditions. Challenge: may oversimplify diseases with history-dependent progression.

Adherence – the extent to which a patient's behavior corresponds with agreed-upon recommendations from a healthcare provider. Related terms: Compliance, Persistence. Example: electronic monitoring shows 78 % adherence to a daily oral medication. Practical use: influences real-world effectiveness and cost-effectiveness. Challenge: measuring adherence accurately and addressing barriers.

Benefit-Risk Assessment – the systematic evaluation of the positive therapeutic effects of a drug relative to its adverse effects. Related terms: Safety Profile, Efficacy. Example: a benefit-risk ratio compares the reduction in cardiovascular events to the incidence of bleeding. Practical application: guides regulatory approval and labeling. Challenge: quantifying benefits and risks on a common scale.

Cost-of-Illness (COI) Study – an analysis that estimates the total economic burden of a disease, including direct medical costs, indirect costs, and intangible costs. Related terms: Economic Burden, Resource Use. Example: a COI study for diabetes reports $327 billion in annual U.S. costs. Practical use: provides context for value assessments and prioritisation. Challenge: capturing productivity losses and informal care accurately.

Discount Rate – the annual percentage used to convert future costs and outcomes into present values. Related terms: Discounting, Time Preference. Example: a 3 % discount rate reduces a $10,000 cost occurring in 5 years to $8,600 today. Practical application: standardises economic evaluations over time. Challenge: differing rates across jurisdictions can affect comparability.

Effect Modifier – a variable that changes the magnitude or direction of the effect of an intervention on an outcome. Related terms: Interaction, Subgroup Analysis. Example: age modifies the efficacy of a vaccine, with greater benefit in children than adults. Practical use: informs targeted reimbursement and personalized medicine. Challenge: detecting true modifiers requires adequate power and appropriate statistical methods.

External Consistency – the degree to which model outputs align with independent data sources or observed real-world outcomes. Related terms: Model Validation, Calibration. Example: a model predicts a 5-year survival of 70 % for a cancer cohort, matching registry data. Practical application: builds confidence in model predictions for decision-makers. Challenge: limited external data may impede validation.

Health Economic Evaluation – the comparative analysis of alternative interventions in terms of both costs and consequences. Related terms: Cost-Effectiveness Analysis, Cost-Utility Analysis. Example: an evaluation compares a new vaccine to existing prophylaxis, reporting ICER and NMB. Practical use: supports resource allocation decisions. Challenge: methodological choices (perspective, time horizon) influence results.

Incremental Cost-Utility Ratio (ICUR) – the ICER expressed specifically in terms of cost per QALY gained. Related terms: ICER, Cost-Utility Analysis. Example: an ICUR of $22,000 per QALY for a new antihypertensive versus generic therapy. Practical application: directly comparable to QALY-based thresholds. Challenge: utility measurement uncertainties propagate to the ICUR.

Markov Cohort Model – a deterministic version of a Markov model where a cohort of patients is tracked through health states over time. Related terms: State Transition, Cycle Length. Example: a cohort of 1,000 patients with chronic hepatitis progresses through fibrosis stages annually. Practical use: estimates long-term costs and outcomes without individual simulation. Challenge: assumes homogenous transition probabilities within each cycle.

Monte Carlo Simulation – a computational technique that uses random sampling to estimate the probability distribution of model outcomes. Related terms: Probabilistic Sensitivity Analysis, Stochastic Modeling. Example: 10,000 iterations of a cost-effectiveness model generate a distribution of ICERs. Practical application: quantifies overall decision uncertainty. Challenge: requires specification of appropriate input distributions and sufficient computational power.

Net Health Benefit (NHB) – the health gain expressed as a QALY equivalent after accounting for willingness-to-pay. Related terms: Net Monetary Benefit, Value of Information. Formula: $\Delta\text{Effect} - (\Delta\text{Cost} / \lambda)$. Example: with $\lambda = \$50{,}000$ per QALY, $\Delta\text{Effect} = 0.04$ QALY, $\Delta\text{Cost} = \$1{,}200$, $\text{NHB} = 0.04 - (1{,}200/50{,}000) = 0.016$. Practical use: offers a health-focused metric for decision analysis. Challenge: depends on the chosen λ and may be less intuitive for some stakeholders.

Patient-Level Simulation – a modeling approach that tracks individual patients through health states, allowing for heterogeneity in risk factors and pathways. Related terms: Microsimulation, Discrete Event Simulation. Example: a microsimulation model assigns each patient a unique set of comorbidities influencing transition probabilities. Practical application: captures variability and complex interactions. Challenge: data-intensive and computationally demanding.

Probabilistic Model – an economic model that incorporates probability distributions for uncertain parameters rather than fixed point estimates. Related terms: PSA, Monte Carlo Simulation. Example: a probabilistic model assigns a beta distribution to utility values and a gamma distribution to cost inputs. Practical use: produces confidence intervals for ICERs. Challenge: requires robust parameter distribution selection.

Quality-Adjusted Survival – the integration of survival time with quality-of-life weights, yielding a measure akin to QALYs but focusing on survival dimension. Related terms: QALY, Life-Year Gained. Example: a patient survives 3 years with a utility of 0.7, resulting in 2.1 quality-adjusted life years. Practical application: used when utility data are only available for survival periods. Challenge: may overlook temporary health state improvements.

Reference Price – a price set by a payer for a group of therapeutically similar products, used to control expenditures. Related terms: Price Capping, Reimbursement Policy. Example: a health system establishes a reference price of $150 per tablet for all statins. Practical use: encourages price competition and cost containment. Challenge: may limit patient choice and affect market dynamics.

Scenario-Based BIA – a budget impact analysis that evaluates multiple plausible future states (e.g., uptake rates, price changes). Related terms: Deterministic BIA, Sensitivity Analysis. Example: a scenario assumes 30 % market share for a new drug versus 10 % in a conservative scenario. Practical application: provides

decision-makers with a range of potential financial outcomes. Challenge: forecasting accuracy and communicating complexity.

Standardized Cost-Effectiveness Ratio (SCER) – an ICER adjusted to a common reference case to facilitate cross-study comparisons. Related terms: Adjusted ICER, Comparative Effectiveness. Example: adjusting an ICER to a 3 % discount rate and societal perspective yields an SCER of $38,000 per QALY. Practical use: enables benchmarking across jurisdictions. Challenge: methodological harmonisation is required.

Surrogate Endpoint – a biomarker or intermediate outcome used as a substitute for a clinical endpoint that directly measures benefit. Related terms: Clinical Endpoint, Validation. Example: reduction in LDL-cholesterol is a surrogate for decreased cardiovascular events. Practical application: shortens trial duration and facilitates early HTA submissions. Challenge: surrogate must be reliably linked to true clinical outcomes.

Therapeutic Index – the ratio of a drug's toxic dose to its effective dose, indicating safety margin. Related terms: Safety Profile, Dose-Response. Example: a therapeutic index of 10 suggests the toxic dose is ten times the effective dose. Practical use: informs dosing guidelines and risk assessments. Challenge: variability among patients can affect the index's applicability.

Time Horizon – the period over which costs and outcomes are evaluated in an economic analysis. Related terms: Lifetime Horizon, Short-Term Horizon. Example: a lifetime horizon captures all future costs and QALYs for a chronic disease intervention. Practical application: ensures that long-term benefits are not omitted. Challenge: longer horizons increase uncertainty and require more assumptions.

Utility Elicitation – the process of obtaining health state preferences from individuals, often using techniques such as TTO, standard gamble, or discrete choice experiments. Related terms: Preference Measurement, Health State Valuation. Example: a TTO interview yields a utility of 0.85 for moderate osteoarthritis pain. Practical use: supplies the utility inputs for CUAs. Challenge: methodological choices affect validity and comparability.

Value of Information (VOI) – an analytical framework that quantifies the benefit of acquiring additional information to reduce decision uncertainty. Related terms: Expected Value of Perfect Information, Expected Value of Sample Information. Example: a VOI analysis estimates that investing $2 million in a further trial could yield $10 million in health gains. Practical application: guides research prioritisation and funding allocation. Challenge: complex calculations and assumptions about future data quality.

Willingness-to-Pay Threshold (WTP Threshold) – synonymous with cost-effectiveness threshold, representing the maximum acceptable cost per unit of health gain. Related terms: CET, Decision Rule. Example: a payer adopts a WTP threshold of €25,000 per QALY for new technologies. Practical use: determines whether an ICER is deemed acceptable. Challenge: thresholds may be arbitrary, differ across diseases, and evolve over time.