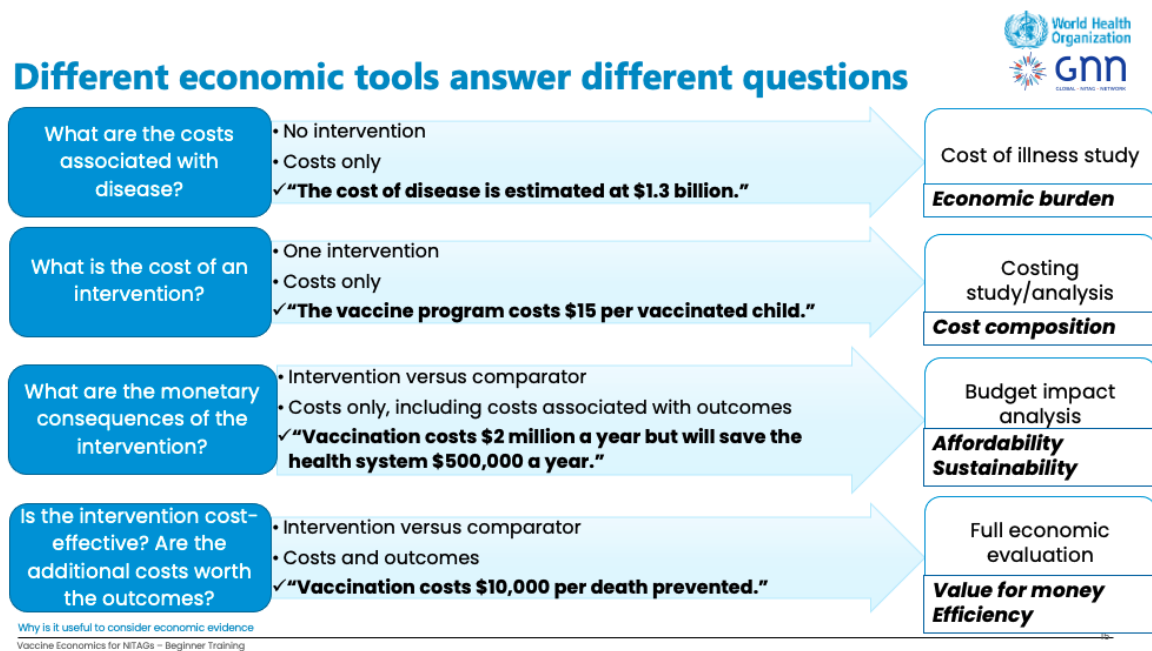


# Vaccine Economics for NITAGs – Beginner training

Handout: Key definitions

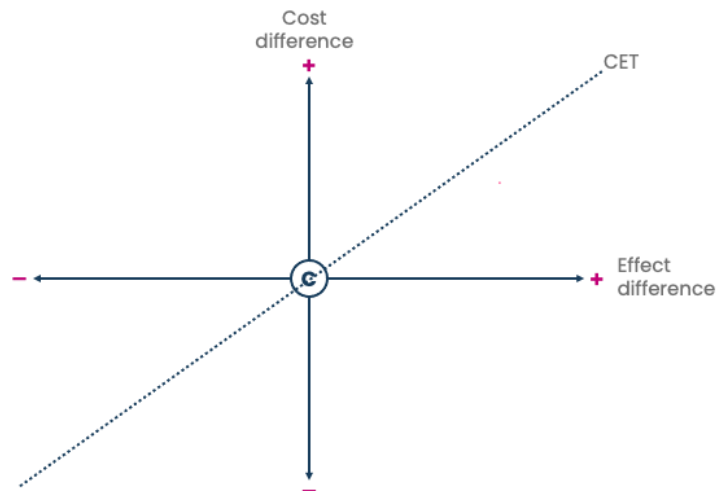
## Overview of economic evaluation tools



## Key Definitions

- **Budget Impact Analysis** – An economic assessment that estimates the financial consequences (expected changes in expenditure) of adopting a new intervention. This analysis can answer the question of what is the impact of adding a new vaccine on the budget of a stakeholder (such as the Ministry of Health).
- **Cost Benefit Analysis (CBA)** – A type of economic evaluation that values the outcomes of the intervention and comparator in monetary terms, to determine the net social benefit of an intervention.
- **Cost Effectiveness Analysis (CEA)** – A type of economic evaluation that considers outcomes of the intervention and comparator in *natural units*, such as number of infections averted or life-years gained. This answers the policy question of whether an intervention is economically justifiable considering the opportunity costs of healthcare spending.

- **Cost-effectiveness plane** – A plane that visually considers both costs (y-axis) and effectiveness (x-axis) of an intervention, compared to a comparator (at the origin). Effectiveness could be measured in many ways, such as cases averted, QALYs gained, or DALYs averted.



- **Cost-Effectiveness Threshold (CET)** – Also known as willingness to pay (WTP) threshold, a value used to represent an estimate of what a healthcare purchaser, provider, or budget holder might be willing to pay for the health benefit (e.g., per QALY gained).
- **Cost Minimisation Analysis (CMA)** – A type of economic analysis that is only used when the comparators have equal effectiveness. Typically, the least expensive intervention is chosen.
- **Cost of Illness (Col) study** – A study that measures and compares the economic burden of a disease to society, or to a health system.
- **Costing study or Cost of Intervention study** – A study that measures the financial value of the resources required to develop and/or introduce a new intervention.
- **Cost Utility Analysis (CUA)** – A type of economic evaluation that considers outcomes of the intervention and comparator as QALYs or DALYs.
- **Disability-adjusted life-years (DALYs)** – A unit of measurement used for valuing ill-health. This metric is the sum of years of life lost from premature mortality and years of life lived with disability (see disability weight). One DALY represents the loss of the equivalent of one year of full health.
- **Disability weight** – A value developed by the Global Burden of Disease Group, which measures ill health on a scale from 0 to 1, where 0 equals a state of full health, and 1 equals death. Disability weights are often not specific to a particular country or population.
- **Economic cost** – value of all resources utilized regardless of the source of financing. Includes opportunity costs for use of existing resources and any donated goods or services from any source. These are based on the value of the resource's next-best alternative use that has been forgone.
- **Economic Evaluation** – A general term for the economic appraisal of healthcare options. These studies generate evidence-based information to assist and improve decision-making in allocating health care resources, most commonly through cost-effectiveness or cost-utility analysis.

- **Financial cost** – the total monetary expenses needed to achieve an objective. Does not include opportunity costs.
- **Incremental Cost Effectiveness Ratio (ICER)** – The primary outcome of a CEA and CUA; the ratio of the difference between the costs and the difference between the effectiveness of an intervention and a comparator. The ICER is compared with a CET, to determine whether an intervention is cost-effective. The formula for an ICER is:

$$ICER = \frac{Cost(intervention) - Cost(comparator)}{Outcomes(intervention) - Outcomes(comparator)}$$

- **Opportunity cost** – the benefit forgone of the next best alternative use when one intervention is chosen.
- **Perspective** – the way of considering the costs within an economic evaluation, broadly grouped into payer, provider or societal.
  - **provider perspective** – only costs incurred by health service providers included.
  - **payer perspective** – costs to the payer(s), such as government or an external partner, included.
  - **Societal perspective** – All costs incurred by providers as well as clients included, such as health sector, out-of-pocket and productivity losses.
- **PICO** – Population, Intervention, Comparison, Outcomes – components used to define research questions.
- **Quality Adjusted Life Years (QALYs)** – a unit of measurement used for valuing the quality and quantity of an individual's life. The metric multiplies a health state utility score by the time spent within that health state.
- **Return of Investment (RoI) analysis** – An economic analysis that measures the efficiency or profitability of an intervention. This analysis may take the perspective of the vaccine manufacturer, funder, or immunization program manager and can be used to advocate for investment in vaccine development and introduction.
- **Utility weights** – A quantifiable index of health captured on a scale ranging from 0 (death) to 1 (full health) (although states worse than death also exist with utility weight < 0) to inform a health-adjusted life-year metric such as a QALY gained, or DALY averted.
- **Willingness to Pay (WTP) Threshold** – Also known as cost-effectiveness threshold (CET), this value represents an estimate of what a healthcare purchaser might be willing to pay for the health benefit.