Appraisal Manual Glossary

(from http://htaglossary.net/ unless otherwise stated)

Appraisal Panel (AP)

The Appraisal Panel (AP) is the decision-making body of HTW that generates evidence-based guidance on non-medicine health and social care technologies. This guidance is used to inform decisions about implementation and adoption in NHS Wales. Current membership of AP, along with terms of reference is published on the HTW website.

Assessment Group (AG)

The Assessment Group (AG) oversees the production of HTW appraisal outputs, ensures methodological and scientific rigour in the work of HTW and adherence to agreed HTW processes. AG also advises HTW on what technologies should be selected for appraisal, and agrees the research question(s) and methods for an evidence appraisal report. Current membership of AG, along with terms of reference, is published on the HTW website**.**

Bias

A systematic error that may distort the results of a study because of weaknesses in its design, analysis, or reporting.

Budget impact

The financial impact of the introduction of a technology or service on the capital and operating budgets of a government or agency.

Budget impact analysis

An evaluation of the financial impact of the introduction of a technology or service on the capital and operating budgets of a government or agency.

Budget impact models present the likely cost impact of an intervention over a short term (usually 3 or 5 year) time horizon. The analysis takes into consideration prevalence and incidence of disease, as well as projected market shares for the new intervention.

Burden of disease

The nature of the condition involved, and the size of the population that would be affected by the technology.

Clinical effectiveness

The benefit of using a technology, programme or intervention to address a specific problem under general or routine conditions, rather than under controlled conditions, for example, by a physician in a hospital or by a patient at home.

Clinical impact

The impact on patient-related health outcomes (benefits and harms).

Comparator

The standard (for example, another intervention or usual care) against which an intervention is compared in a study. The comparator can be no intervention (for example, best supportive care).

Cost-benefit analysis (CBA)

An economic evaluation consisting of comparing various options, in which costs and outcomes are quantified in common monetary units.

These are not commonly used due to the difficulty in evaluating benefits in monetary terms.

Cost-consequence analysis (CCA)

An economic evaluation consisting of comparing various options, in which the cost components and the various outcomes of a disease or intervention are calculated and presented separately.

This type of analysis allows decision makers to see areas which are most relevant to them and is useful where costs of a new intervention are expected to be lower, and outcomes are expected to be similar or better than the comparator.

Cost-effectiveness

Value for money: how well a technology works in relation to how much it costs.

Cost-effectiveness acceptability curve (CEAC)

A curve illustrating the probability that a given option is efficient on the basis of the value assigned to an additional quality-adjusted life year (QALY).

Cost-effectiveness analysis (CEA)

An economic evaluation consisting of comparing various options, in which costs are measured in monetary units, then aggregated, and outcomes are expressed in natural (non-monetary) units.

Cost-minimisation analysis (CMA)

An economic evaluation consisting of comparing the costs of various options presumed to produce equivalent outcomes and determining the least costly of those options.

Cost-utility analysis (CUA)

An economic evaluation consisting of comparing various options, in which costs are measured in monetary units and outcomes are measured in utility units, usually in terms of utility to the patient (using quality-adjusted life years [QALYs], for example).

Note: This is a form of cost-effectiveness analysis (CEA) in which the effectiveness of an option is adjusted on the basis of quality of life.

This type of analysis is useful where new interventions are expected to either provide more benefit to patient, but at an increased cost, or provide less benefit to patient at a reduced cost. It is the most common type of analysis conducted at HTW.

Decision analysis

A quantitative approach to facilitate decision making under conditions of uncertainty that consists of modelling the pathways and outcomes for each possible option to determine which is optimal.

Note: This approach is based on the available estimates (from scientific literature or experts) of the probabilities that certain events and outcomes will occur and on the value of the outcomes that would result from each strategy. A decision tree represents the possible pathways graphically.

Decision tree

A graphical representation of the possible options and outcomes, used in decision analysis.

Deterministic sensitivity analysis (DSA)

Within a deterministic sensitivity analysis (DSA), each parameter within the model is independently changed to an extreme lower and upper value to assess the impact that particular parameter changes will have on modelled results. The extent to which values can be changed can be determined using 95% confidence intervals, or, if preferred, using 20% above and below the mean value.

Discrete event simulation

A method that can be used to model the course of a disease (for example, to predict disease progression for the purposes of cost-effectiveness analysis).

Economic evaluation

The comparative analysis of the costs and consequences of two or more possible options.

Note: Depending on whether the consequences are expressed as monetary, physical or qualitative variables, the analysis may be a cost-benefit, cost-effectiveness or cost-utility analysis.

Economic model

In the health field, a mathematical model of the clinical pathway that represents the key choices and the consequences of the options studied.

Note: An economic model can be used to extrapolate, from intermediate outcomes, the long-term outcomes of importance to patients.

Efficacy

The benefit of using a technology, programme or intervention to treat a particular problem under ideal conditions, for example, in the context of research in a laboratory or a rigorous protocol for a randomised clinical trial.

Equity

The fair allocation of resources or treatments among different individuals or groups, such that they each get what they are owed or what they are entitled to.

Evidence Appraisal Report (EAR)

Evidence Appraisal Reports aim to identify and summarise evidence that addresses a specific research question for a topic submitted for consideration by HTW. They are based on rapid systematic literature searches, with the aim of published evidence identifying the best clinical and economic evidence on health technologies. Researchers critically evaluate this evidence. The draft Evidence Appraisal Report is reviewed by experts and by HTW multidisciplinary advisory groups before publication.

Health economics

A scientific discipline that seeks to apply the principles and rules of economics in the health care field.

Note 1: Health economics includes evaluation of the health system and of health policies from an economic perspective, of the demand for and supply of health care, and of medical technologies and interventions; it also includes health system resources planning and organisation, consideration and evaluation of the determinants of health, and analysis of health system performance in terms of equity and allocative efficiency.

Health status

The level of health of a person, group or population, as assessed by the person himself/herself or through objective measures.

Health technology

An intervention developed to prevent, diagnose or treat medical conditions; promote health; provide rehabilitation; or organise healthcare delivery.

Note 1: The intervention can be a test, device, medicine, vaccine, procedure, program or system.

Note 2: HTW's remit covers the evaluation of non-medicine health and social care technologies.

Health Technology Assessment (HTA)

A multidisciplinary process that uses explicit methods to determine the value of a health technology at different points in its lifecycle. The purpose is to inform decision-making in order to promote an equitable, efficient, and high-quality health system.

Note 1: Definition of health technology.

Note 2: The process is formal, systematic and transparent, and uses state-of-the-art methods to consider the best available evidence.

Note 3: The dimensions of value for a health technology may be assessed by examining the intended and unintended consequences of using a health technology compared to existing alternatives. These dimensions often include clinical effectiveness, safety, costs and economic implications, ethical, social, cultural and legal issues, organisational and environmental aspects, as well as wider implications for the patient, relatives, caregivers, and the population. The overall value may vary depending on the perspective taken, the stakeholders involved, and the decision context.

Note 4: HTA can be applied at different points in the lifecycle of a health technology, i.e., pre-market, during market approval, post-market, through to the disinvestment of a health technology.

Incremental cost-effectiveness ratio (ICER)

The additional cost of the more expensive intervention compared with the less expensive intervention, divided by the difference between the effects of the interventions on the patients (the additional cost per quality-adjusted life year [QALY], for example).

Industry User Group

The Industry User Group is a collaboration between industry representatives and Health Technology Wales, set up to raise awareness of HTW's work and improving access to technology for NHS Wales.

Members of the group include small and medium sized enterprises and multi-national companies, all of which have links to Wales and are involved in the development and manufacture of innovations for the health and social care sector. Industry members represent their sector in general and not specific companies.

Markov model

A type of quantitative modelling that involves a specified set of mutually exclusive and exhaustive health states for which there are transitional probabilities of moving from one state to another, including the probability of remaining in the same state.

Note: Typically, states have a uniform time period, and transitional probabilities remain constant over time.

Meta-analysis

Statistical combination of results from multiple studies to obtain a single estimate of effect of a particular intervention or variable.

Note 1: The meta-analysis appropriately weights each included study according to its precision and, when randomised controlled trials are included, it maintains the randomisation of the individual included studies.

Model of care

A model of care is used to guide the delivery of health and social care services, to ensure the right care is delivered, at the right time, in the right place, from the right people.

Non-medicine health and social care technologies

HTW's remit covers the evaluation of non-medicine health and social care technologies. For health, this could include medical devices, diagnostics, procedures, and psychological therapies. For social care, this could include equipment and environmental design, or different models for supporting families, children, adults and the workforce. HTW does not appraise medicines.

Non-randomised controlled/comparative trial

A study comparing interventions in which the allocation of participants to the control and intervention groups is not based on chance.

Note 1: Examples include allocation based on alternating groups, the investigator's practical constraints, or the participant's choice.

Note 2: A non-randomised controlled trial is different from an observational study and a non-experimental study.

Outcome

A measurable component observed after an intervention has been applied.

Note: The health outcome differs from the clinical outcome in that the former has to do with the effect on health (public health, for example), while the latter has to do with the effect on the disease.

Patient and Public Involvement (PPI)

HTW's PPI can include any or all of individual patients, carers, service users along with organisations representing them, as well as public communities and patient groups. With the support of the PPI Standing Group (PPISG), HTW has developed PPI processes, mechanisms, documents and tools to facilitate effective PPI.

Patient and Public Involvement Standing Group (PPISG)

HTW's Patient and Public Involvement Standing Group (PPISG) advises HTW on all aspects of our patient and public involvement (PPI) work. PPISG comprises of eight members with diverse experience and knowledge of patient involvement in research, PPI in health technology assessment (HTA), patient networks and organisations across the UK and internationally, patient consultancy and PPI processes across a range of different organisations.

PICO

A PICO (population, intervention, comparator and outcome) is a structured approach for developing review questions. It divides each question into 4 components: the population (the population being studied); the interventions (what is being done); the comparators (other main treatment options); and the outcomes (measures of how effective the interventions have been).

PICOT

A PICOT (population, intervention, comparator, outcome and time horizon) is a structured approach considered in the planned analysis. In most cases, this will closely match the PICO defined within the protocol for the clinical evidence review.

Primary research/study/evidence

An investigation in which the data are collected for the first time directly from patients (randomised controlled trial, observational study, case series, etc.).

Note: The term "primary research" is often used to distinguish this type of research from "secondary research," which is synthesis research (re-analysis of previously collected data), meta-analyses and other ways of combining studies (such as economic analysis and decision analysis).

Probabilistic sensitivity analysis (PSA)

Probability distributions are assigned to the uncertain parameters and are incorporated into evaluation models based on decision analytical techniques (for example, Monte Carlo simulation).

Qualitative research/sources

Qualitative research/sources explores people's beliefs, experiences, attitudes, behaviour and interactions. It asks questions about how and why. For example, why people want to stop smoking, rather than asking how many people have tried to stop. It generates non-numerical data, such as a person's description of their pain rather than a measure of pain.

Quantitative research/sources

Quantitative research/sources involve data that can be quantified, with a numerical value that can be analysed mathematically.

Quality-adjusted life year (QALY)

A unit of outcome of an intervention where gains (or losses) of years of life subsequent to this intervention are adjusted on the basis of the quality of life during those years.

Note: This parameter can provide a common unit for comparing cost-utility across different interventions and health problems.

Randomised controlled trial (RCT)

A study comparing at least two interventions, in which the eligible participants are allocated randomly to the intervention group, or groups, and the control group.

Note 1: The control may be a standard practice, a placebo, other active intervention, or no intervention.

Note 2: Participants may be individuals or groups (e.g. unit of randomisation in a cluster RCT).

Rapid review

A report that usually includes a review of the highest level of evidence or of recent evidence and that may restrict the literature to one or two databases.

Note 1: The report always describes the characteristics and current use of the technology, and evaluates safety and effectiveness issues

Note 2: The report does not always critically appraise the quality of the evidence base or provide information on costs and financial impact.

Note 3: A rapid review is typically not as rigorous as a mini-HTA or a HTA report but is quicker to produce.

Note 4: For topics selected for HTW's appraisal work programme, our appraisal approach is based on a rapid review model and follows a defined protocol agreed at the outset. This means that we follow a faster and more pragmatic approach to literature searching and evidence reviews than that adopted when undertaking full systematic reviews. Our aim is to focus on the key outcomes that are considered most important and relevant for decision making in Wales. This may mean that there is a focus on secondary evidence (such as existing evidence reviews or health technology assessments) and evidence that is more recent, of higher certainty, or more generalisable to the Welsh setting

Secondary research/study/evidence

A type of research that does not produce original data, but that involves the qualitative or quantitative synthesis of information from multiple original studies.

Note 1: Literature reviews, meta-analyses, decision analyses and consensus reports are examples of synthesis research.

Note 2: HTA is secondary research, and HTW's Topic Exploration Reports (TERs) and Evidence Appraisal Reports (EARs) both fall within this category.

Sensitivity analysis

A means for evaluating the robustness of a mathematical model by testing a plausible range of estimates of key independent variables to determine whether such variations result in meaningful changes in the model's results.

Note: Sensitivity analysis can also be used for other study types, such as clinical trials analysis, to determine whether inclusion or exclusion of certain data changes the results, and meta-analysis, to determine whether inclusion or exclusion of certain studies changes the results.

Signposting Group

The Signposting Group (SG) is a sub-group of HTW that brings together key partners in the Welsh health and social care innovation landscape to establish a streamlined route for health technology developers to obtain advice to inform development, adoption and optimisation of use of health technologies.

Single-arm trial/study

An analysis or evaluation of a study with only one branch, i.e. a trial in which there was no parallel comparison group and all the subjects received the same intervention.

Stakeholder Forum

The aim of Stakeholder Forum is to ensure that HTW understands the views of stakeholders and enable them to influence its work in identifying, evaluating and adopting care technologies that could improve the lives of patients in Wales. As well as supporting HTW's programme of work, the forum provides guidance on priorities for care services in Wales.

The membership of the Stakeholder Forum is drawn from key care sector stakeholders and ensures involvement from a range of bodies. Each member organisation is invited to send a representative who will fairly articulate the views and interests of their stakeholder community.

Stakeholder interest

The level of known or anticipated demand for the technology, and/or the likelihood that advice will be adopted.

Standard of care (SoC)

Technologies / interventions / ways of working routinely used in the NHS, including those regarded as best practice.

Systematic review / systematic literature search

A synthesis that collates all empirical evidence fitting pre-specified eligibility criteria in order to answer a specific research question.

Note 1: Systematic reviews are conducted according to a pre-specified protocol. The methods used are selected with a view to minimising bias, thus providing more reliable findings from which conclusions can be drawn and decisions made.

Note 2: Many systematic reviews contain a meta-analysis.

Time horizon

The time period over which the main differences between interventions in effects and the use of resources in health and social care are expected to be experienced, taking into account the limitations of the supporting evidence.

Topic Exploration Report (TER)

Topic exploration reports are designed to provide high-level briefings on new topics submitted for consideration by HTW. The main objectives of this report are to:

- Determine the quantity of evidence available for a technology of interest.
- Identify any gaps in the evidence.
- Inform decisions on topics that warrant fuller assessment by HTW.

Topic proposer

The topic proposer is the person who originally suggested the topic for the HTW work programme. Anyone can suggest a topic that they think we could appraise, and we receive suggestions from people with a wide range of backgrounds, including clinicians or other health and care practitioners, commissioners, third sector organisations, industry, academia and the general public. Topics are normally submitted via a form on our website. We also use the NHS Innovation Service to identify health innovations. In this case, the person who submitted the topic to the Innovation Service would act as the topic proposer.

Willingness-to-pay (WTP)

The maximum amount that a person is willing to pay: (a) to achieve a good health state or particular outcome, or to increase its probability of occurrence; or (b) to avoid a bad health state or outcome, or to decrease its probability of occurrence.