CIAP eLearning Module 4 – Integrating Evidence into Practice
Glossary

ARR or Absolute Risk Reduction The absolute amount by which the intervention reduces the risk (of death for example).

Allocation Concealment Occurs when the person enrolling a participant into a clinical trial is unaware whether the next participant will be enrolled into the intervention or control group.

Applicability Related to whether a particular treatment or form of care that demonstrated an overall effect in a study can be expected to provide the same effect for an individual or group in a specific clinical or population setting.

Bias Deviation of a measurement from the 'true' value leading to either an over or under-estimation of the treatment effect. Bias may originate from different sources: allocation of patients, measurement, interpretation, publication and review of data.

Blinding Technique to reduce bias as far as possible. May be either single or double blinding. Single Blinding: prevents patients in a clinical study from knowing which treatment group they have been assigned to. Double blinding: neither the patient nor the investigator knows which treatment is planned.

Case-Control study A study which involves identifying patients who have the outcome of interest (cases) and control patients who do not, and looking back to see if they had the same exposure of interest.

Case reports/case series A report on a series of patients with an outcome of interest. No control group is involved.

Chance The absence of any cause of events that can be predicted, understood or controlled. The unknown and unpredictable element in happenings that seem to have no assignable cause.

Cohort Study Involves two matched groups (cohorts) of patients, one that received the exposure of interest and one that did not, and following these patients forward for the outcome of interest. Alternatively, the cohorts are defined at a point of time in the past and information is collected on subsequent outcomes.

Comparator Treatment, prognostic indicator or test that is compared with the treatment, indicator or test of interest in a clinical trial.

CI or Confidence Interval An interval within which the population parameter (the 'true' value) is expected to lie with a given degree of certainty (eg 95%). If the confidence interval crosses zero there is we cannot be confident that this range of values includes the true value and there is likely to be no statistically significant effect.

Confounding The distortion of the true effect of treatment (or a risk factor) by other factors that vary between the study and control groups (eg baseline differences in age, sex or lifestyle).

Cost-benefit Analysis Assesses whether the cost of an intervention is worth the benefit by measuring both in the same units; usually monetary units.

Cross-sectional study The observation of a defined population at a single point in time or time interval. Exposure and outcome are determined simultaneously.

Evidence Summaries Provide a critical appraisal synthesis for a specific research article or evidence on a specific topic, so that practitioners can easily determine validity and reliability.

External Validity The degree to which the results of a clinical study can be applied to clinical practice in a specific setting.

Experimental studies Studies in which subjects are allocated to two or more groups to receive an intervention, exposure or test and then followed up under carefully controlled conditions.

Generalisability The ability to reliably apply the results of a study to other populations, based on the characteristics of the subjects, size of the sample, the setting and trustworthiness of the study.

Grey Literature A comprehensive search (especially if preparing a systematic review, or where little is known about a topic) should also include the unpublished or 'grey' literature that exists on the search question. Sources include conference proceedings, reports, and unpublished theses.

Hypothesis Study question phrased in a way that allows it to be tested or refuted.

Incidence The proportion of new cases of the target disorder in the population at risk during a specific time interval.

Intention-to-Treat Analysis A method of analysis for randomised controlled trials in which all patients randomly assigned to one of the treatments are analysed together, regardless of whether or not they completed or received that treatment, in order to preserve randomisation.

Internal validity R elates to the quality of the study design in terms of the methods of a study: where bias is reduced as far as possible, where instruments are reliable and safeguards have been put in place to ensure trustworthiness.

Intervention An action introduced in an attempt to change patient, community or organisational outcomes. This may involve a therapeutic procedure, a pharmaceutical agent, a dietary supplement, a model of care, a screening tool or the use of patient educational materials.

Level of Evidence A hierarchy of study designs according to their internal validity, or degree to which they are not susceptible to bias.

Meta-analysis **T**he results from several studies, identified in a systematic review, are combined and summarised quantitatively.

Meta-synthesis Integrates results from a number of different but inter-related qualitative studies. The intention is interpretation rather than aggregation.

NNT or Number Needed to Treat The number of patients with a particular condition who must receive a treatment in order to prevent the occurrence of one adverse outcome.

NNH or Number Needed to Harm The number of patients with a particular condition who, if they received the experimental treatment, would result in the occurrence of one adverse outcome.

Observational studies These studies investigate and record 'exposures' to specific factors and observe outcomes. Observational studies may be more appropriate when experimental studies are not ethical.

OR or Odds Ratio Ratio of the odds (those with the outcome divided by those without it) in the treatment group to the corresponding odds in the control group.

p-value The probability that any particular outcome would have arisen by chance.

Power The sample size used in a study is partly determined on the need to have sufficient statistical power (strength) to make inferences about a population from the sample.

Pre appraised evidence Resources that have undergone a filtering process to include only research of higher quality and that are regularly updated so that the evidence is current.

Qualitative Studies Qualitative studies do not have 'measurable' outcomes in the same way that scientific or quantitative studies do. They usually explore the 'quality' of an experience – for example a

patient's experience of a hospital stay, or a new model of care. They can provide a valuable additional dimension to a research project, stand alone as 'evidence' of the patient perspective, or used to generate a hypothesis .

Randomisation A method similar to that of 'tossing a coin' to assign patients to treatment groups; for example to the treatment group or control (placebo) group.

RCT or Randomised Controlled Trial Studies that introduce a treatment (such as a drug) or exposure (such as a form of care) to examine the effect on real patients. The patients are then followed up under carefully controlled conditions. These studies are often known as Experimental (or Intervention) studies. RCTs use specific methods to reduce the likelihood of bias in order to produce evidence of cause and effect such as *randomisation* and *blinding.*

Reference Test A method, procedure or measurement that is widely regarded or accepted as being the best available (also known as the gold standard).

RRR or Relative Risk Reduction The proportional reduction in rates of bad outcomes between experimental and control participants in a trial.

RR or Relative Risk/Risk Ratio The risk of the outcome in the treatment group relative to that in the control group.

Reliability Relates to the trustworthiness of the results.

Secondary Research An academic review of primary research studies to gain new insights on a specific topic.

Selection Bias Error due to systematic differences in characteristics between those who are selected for study and those who are not. Bias invalidates conclusions and generalisations that might otherwise be drawn from such studies.

Sensitivity Proportion of people with the target disorder who have a positive test result. Often used to describe the effectiveness of a diagnostic or screening test.

Specificity Proportion of people without the target disorder who have a negative test result. Often used to describe the effectiveness of a diagnostic or screening test.

Synopses Pre-appraised evidence resources that have undergone a filtering process to include only those of high quality, and updated regularly so that they are current. Synopses provide succinct

descriptions of selected individual studies or systematic reviews in the form of value-added abstracts by clinical experts.

Synopses of Studies Synopses of a study provides a succinct description of a selected high quality study that can inform clinical practice. Brief commentary by clinical experts is provided in the form of methodological critique and comment on the clinical applicability of the study findings.

Synopses of Synthesis Synopses of synthesis provides a succinct description of selected systematic reviews in the form of value-added "abstracts" and methodological commentary by clinical experts. Such information may provide sufficient information to support change in clinical practice. Examples can be found in the Database of Abstracts of Reviews of Effects (DARE) in the Cochrane Library.

Summaries Integrate the best available evidence from the lower layers of the evidence hierarchy pyramid to develop practice guidelines or clinical pathways based on a full range of evidence (for example, those in BMJ Clinical Evidence).

Syntheses *See systematic review.*

Systems A process by which the individual patient's characteristics are automatically linked to the current best evidence that matches his or her specific circumstances and the clinician is provided with key aspects of management (sometimes known as Clinical Decision Support systems).

Systematic review A summary of scientific studies that uses explicit methods to perform a comprehensive literature search and critical appraisal, and that uses appropriate statistical techniques to obtain a reliable overview.

Validity Of a study: the degree to which the conclusions drawn from a study are reasonable in terms of the method, the sample and the study population.