Evidence Appraisal Worksheet

Research Interpretation and Evidence Application

Formulate the question

• Use PICO: patient/population, intervention or index test, comparator and outcomes. Select outcomes important to patients.

• Identify appropriate evidence: systematic reviews and randomized trials for interventions; cohort designs for prognosis; cross-sectional diagnostic accuracy studies with suitable reference standards.

• Assess applicability to the actual patient, including comorbidity and preferences.

Understand effect measures

• Relative risk = event risk in treated group / event risk in control group. Absolute risk reduction = control event risk minus treated event risk.

• Number needed to treat = 1 / absolute risk reduction (proportions), over a stated follow-up period; do not extrapolate across time horizons.

• Sensitivity and specificity are conditional on disease status; PPV/NPV depend heavily on prevalence. Likelihood ratios help update clinical probability.

Bias, confidence and limitations

• Randomization and allocation concealment limit selection bias; blinding may reduce performance or assessment bias.

• Confounding, spectrum bias, verification bias, missing data and selective reporting affect interpretation.

• Confidence intervals communicate precision; statistical significance is not equivalent to clinical importance.

Shared evidence-informed decisions

• Compare benefits, harms, burden, cost, alternatives and baseline risk.

• Use current guidelines as aids, but check quality, currency, local requirements and individual circumstances.

• Document uncertainty, patient choice and a plan for monitoring outcomes; reassess new evidence as appropriate.

Case exercise: Case: A trial reduces 5-year event risk from 10% to 8%. Absolute risk reduction is 2 percentage points and NNT is 50 over five years; the relative risk reduction is 20%.

PICO

Population: _____ Intervention / Test: _____ Comparator: _____ Patient-important outcomes: _____

Appraisal

Design: _____ Selection bias: _____ Confounding: _____ Missing data: _____

Effect sizes

Baseline risk: _____ Treated risk: _____ ARR: _____ RR: _____ NNT and follow-up: _____

Application

Applicability: _____ Benefits / harms: _____ Preferences: _____ Decision and follow-up: _____

Educational material only. Use current authoritative guidelines and local standards for clinical decisions; numerical laboratory intervals vary by laboratory.