



Methods for literature searching and critical appraisal

Beth Cullen,
Epidemiologist

Infection Control Team

HAI & IC Section

- Background to the project work
- Scientific approach to literature reviews
 - Purpose and key elements of a review
 - Setting and applying criteria
 - The Search
 - Synthesis of findings
 - Presentation of findings

Background to the Project Work

- 'A model policy is an example plan for action, written to a high standard, to guide those wishing to develop, refine, or compare their own policies with a view to encouraging standardisation of policy across Scotland'
- Standard Infection Control Precautions: 9 + 1 elements
- Guidance produced by other organisations
 - WHO
 - NICE
 - EPIC
 - HTA Programme
 - RCN
 - Previous working group



Key Elements of Any Review



Defining the topic:

This limits search to key area, facilitates decisions and saves time

Setting the objectives:

These should be clearly defined as they will shape the review

Defining the search:

This needs to be sufficiently extensive to draw together all relevant papers. Sensitive yet specific.

Setting Inclusion/ Selection Criteria

- **Study design:** which designs will be considered? RCTs? CBAs?
- **Sample:** who is your target group? males? females?
healthcare workers?
- **Outcome measure:** what is being measured/assessed?
- **Other inclusion criteria**
- **Language limitations:** specify language of papers to be
included

Example Hand Hygiene Search Keywords

- hand\$
- hygiene
- decontamination
- infection\$
- nosocomial
- health
- care
- hospital
- acquired
- associated
- measure
- precaution
- control
- bacteri\$
- microbial
- spread

Other keywords added for specific elements (e.g. nail\$, jewellery)

Search Methods



- Search published and unpublished (grey) literature obtainable from electronic databases
- Search other unpublished literature (e.g. personal libraries, conference proceedings)
- Scan citations of included articles
- Handsearch journals (check register of trials)
- Contact experts in the field

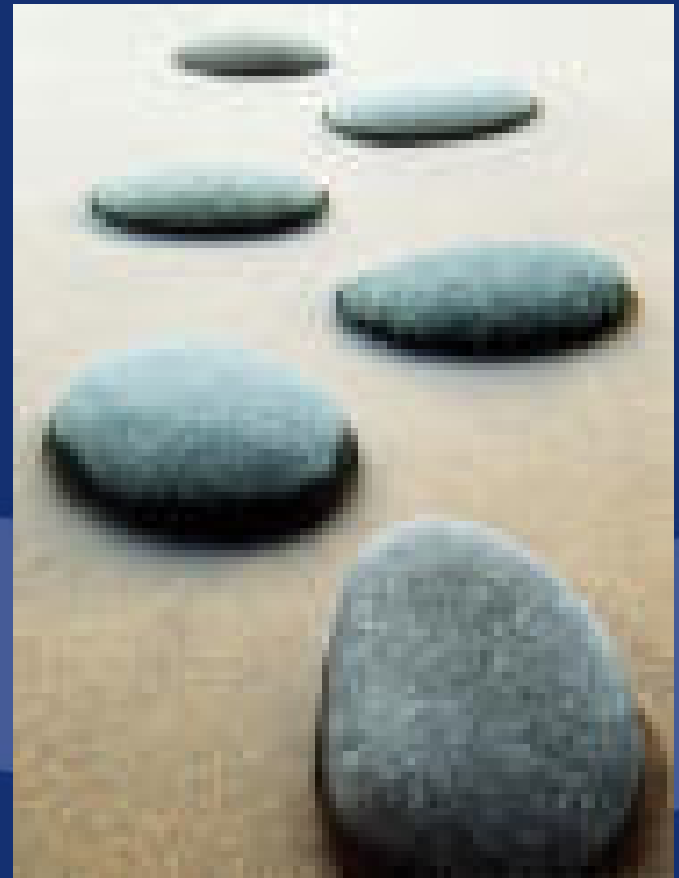
Current Awareness Searches ... The Steps

Step 1: Enter key search terms identified into relevant databases (e.g. Medline, CINAHL, Embase)

Step 2: Save search strategy and set up Auto Alert

What is an Auto Alert?

Mechanism for flagging up any new publications which meet your criteria



Applying the Criteria

- **Study evaluation:** scanning abstracts allows quick assessment of their relevance
- **Quality assessment:** critical appraisal of studies considering their strengths/weaknesses
- **Data evaluation:** consider validity, replicability, analyses performed etc.

Critical Appraisal of Studies

Key criteria, for research studies and other literature

- e.g. clarification of sampling strategy
- recruitment
- allocation to treatment
- validation of measures
- precision of analysis

Final Stage of Review Process

Synthesis of findings:

- summarise and discuss results, in light of critical appraisal
- produce considered, balanced review of evidence
- for systematic reviews, apply meta-analysis
of statistical results if applicable

Completion of Template

- Conclusions
- Recommendations
- Practical Application
- Resource Implications
- Review Status

Thank you for your
attention



Any questions?

