Conducting a Systematic Review:
Searching & Screening the Literature

February 25, 2009

Lorie Kloda, MLIS, PhD candidate
McGill Life Sciences Library
Overview

1. What makes a review systematic?
2. Steps in conducting a SR
3. Finding existing SRs
4. The search for literature
5. Managing the references
6. Record keeping
7. Finding resources in the Life Sciences Library
<table>
<thead>
<tr>
<th></th>
<th><strong>Systematic Review</strong></th>
<th><strong>Nonsystematic Review</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Question</strong></td>
<td>• Usually narrow question</td>
<td>• Usually broad question</td>
</tr>
<tr>
<td><strong>Search Strategy</strong></td>
<td>• Explicitly stated</td>
<td>• Not stated</td>
</tr>
<tr>
<td></td>
<td>• May be performed in duplicate</td>
<td></td>
</tr>
<tr>
<td><strong>Study Identification</strong></td>
<td>• Criteria explicitly stated</td>
<td>• Not stated</td>
</tr>
<tr>
<td></td>
<td>• May be performed in duplicate</td>
<td></td>
</tr>
<tr>
<td><strong>Methods</strong></td>
<td>• Methods &amp; outcomes of interest explicitly stated</td>
<td>• Not stated</td>
</tr>
<tr>
<td></td>
<td>• May include study quality assessment, sensitivity analyses</td>
<td></td>
</tr>
<tr>
<td><strong>Presentation of Results</strong></td>
<td>• Typically by study characteristics so that equivalent components are compared</td>
<td>• Typically by study</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Conclusions</strong></td>
<td>• Typically confined to what the data could infer</td>
<td>• May include personal approaches, opinions not supported by data</td>
</tr>
</tbody>
</table>

Steps in a systematic review

1. Define the clinical question (PICO)
2. Identify all relevant literature (published and unpublished)
3. Select studies for inclusion
4. Assess the quality of each study
5. Synthesize the findings (meta-analysis or meta-synthesis, if possible)
6. Interpret the findings and present an unbiased summary
Sources for finding systematic reviews

- **Cochrane Library**
  - Cochrane Database of Systematic Reviews (includes Methodology Reviews)
  - Database of Abstracts of Reviews of Effects (DARE)
  - Other databases of original studies (clinical trials, methods, economic evaluations, health technology assessments)

- **MEDLINE**

- **Other health databases**
  - CINAHL
  - EMBASE
  - PsycINFO
Comprehensive Lit Search

(1) Define research question
   Inclusion/exclusion criteria for eligibility
   • Methodology/methods
   • Limitations by age group, language of publication, date of publication, etc.
Comprehensive Lit Search

(2) Selection of sources

- Databases (to search)
- Journals, conference proceedings (“hand-search”) & grey literature
- Identify known papers (citation searching, snowball searching)
- Identify known researchers (to contact)
(3) Develop Search Strategies

- **Hedges** (validated search strategies for increased retrieval and accuracy)
- Subject headings (e.g., MeSH)
- Subheadings
- Keyword or textword
- Limits (Children, infants, adolescents)
- Subsets (e.g., Cancer)
Managing References

Citation Software
(Reference Manager or EndNote)
• Exporting from databases (filters)
• Removes duplicates
• Search for full-text articles online
• Annotations
• Citation in manuscript

Systematic Review Software
(EPPI-Reviewer)
PRISMA Statement for Reporting SRs:

• Databases with dates of coverage, date last searched, platform/provider
• Who developed and conducted the search
• Supplementary methods: hand searches, citation searches, snowball searches, contacting known researchers
• Full electronic search strategy for at least one database, such that it can be repeated
• Use of hedges or any peer reviewed search strategies
• Additional limitations