Systematic approaches to identifying the literature

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Outline of session

What is a systematic review?

What’s out there?

Systematic tools to finding information
Are you experienced?

3 Top Tips for Searching
What is a systematic review?

“Systematic reviews seek to collate all evidence that fits pre-specified eligibility criteria in order to address a specific research question.” (Green, S. and Higgins, J. eds., 2011)

“being systematic is a way to tie down the results as much as possible without conducting primary research.” Bettany-Saltikov, J. (2010)
Stages of a systematic review

1. Determine the question
2. Define terms/ concepts
3. Set inclusion/ exclusion criteria
4. Search for and collect studies which seem to be relevant to the question
5. Assess quality, apply eligibility criteria and justify any exclusions
6. Synthesize the evidence
7. Compare analysis with other reviewers
8. Prepare a critical summary and make recommendations

(Moule and Goodman, 2014)
Why be systematic?

• Good quality research underpins evidence-based practice and safer care because it is:

  Exhaustive

  Representative and

  Covers pivotal works.
The evidence hierarchy

Greatest confidence

Qualitative
- Systematic Reviews
  - Meta-synthesis
  - Integrative Reviews
- Generalizable Studies
- Conceptual Studies
- Descriptive Studies
- Single Case Studies

Secondary Research

Quantitative
- Systematic Reviews
  - Meta-analysis
  - Integrative Reviews
- Randomized Controlled Trials
- Cohort Studies
- Case Control Studies
- Case Series
- Case Reports

Least confidence

Primary Research

Anecdote
Opinion
Comment
What does a systematic review look like?
Map the topic

- Population
- Intervention/Comparison
- Physical
- Psychological
- Cultural
- Social

Outcomes
P.I.C.O.D.

**Population** – Who is it you are interested in?

**Intervention** – What is it you are interested in?

**Counter Intervention / Comparison** – Compared to what?

**Outcome** – What are you hoping for?

**Design** – Quantitative or Qualitative

A PICO will help you construct a question and identify keywords.
P.E.O. — for qualitative studies

Population – Who is it you are interested in?

Exposure – What is it you are interested in?

Outcome – What are you hoping for?
Activity

Search terms for: Laxatives for the management of constipation in palliative care patients (Review)

a. Constipation /Laxative Studies

b. Laxatives

c. Patient Group
<table>
<thead>
<tr>
<th>MeSH subject headings:</th>
<th>MeSH headings:</th>
<th>MeSH subject headings:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constipation</td>
<td>Cathartics</td>
<td>Palliative care</td>
</tr>
<tr>
<td>Defaecation</td>
<td>Dietary fibre</td>
<td>Terminal care</td>
</tr>
<tr>
<td>Diarrhoea</td>
<td>Enema</td>
<td></td>
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<tr>
<td>Faecal incontinence</td>
<td>Fruit</td>
<td>Textword terms/synonyms:</td>
</tr>
<tr>
<td>Faeces, impacted</td>
<td>Glycerin</td>
<td>Care of the dying</td>
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<td></td>
<td>Magnesium compounds</td>
<td>End-of-life-care</td>
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<tr>
<td></td>
<td>Phenolphthaleins</td>
<td></td>
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<tr>
<td></td>
<td>Phosphates</td>
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<tr>
<td></td>
<td>Polyethylene glycols</td>
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</tr>
<tr>
<td></td>
<td>Sorbitol</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Plus BNF laxative terms and brand names</td>
<td></td>
</tr>
<tr>
<td><strong>Textword terms/synonyms</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>bowel function$</td>
<td>names of drugs</td>
<td></td>
</tr>
<tr>
<td>bowel habit$</td>
<td>synonyms/related words (bulk, casantranol, cellulose, glucitol, glycerol, laxative$, purgative$, faecal adj. softener$, liquid paraffin, roughage, stool adj. Softener$, suppositories)</td>
<td></td>
</tr>
<tr>
<td>bowel movement$</td>
<td>names of particular foods including: bran, fruit adj. juice, prune$, rhubarb</td>
<td></td>
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<tr>
<td>bowel symptom$</td>
<td></td>
<td></td>
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<tr>
<td>colon adj. transit</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Evacuation</td>
<td></td>
<td></td>
</tr>
<tr>
<td>faecal adj. incontinence</td>
<td></td>
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</tr>
<tr>
<td>impaction</td>
<td></td>
<td></td>
</tr>
<tr>
<td>impacted adj. faeces</td>
<td></td>
<td></td>
</tr>
<tr>
<td>intestinal adj. motility</td>
<td></td>
<td></td>
</tr>
<tr>
<td>irritable adj. bowel adj. syndrome</td>
<td></td>
<td></td>
</tr>
<tr>
<td>stool$</td>
<td></td>
<td></td>
</tr>
<tr>
<td>stool with (hard or impacted)</td>
<td></td>
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</tbody>
</table>
Keywords: advanced strategies

Entering keywords in a search

Subject Terms are supported by a thesaurus and therefore will link synonyms, alternative terms and spellings. A truly systematic approach on CINAHL and Medline needs to include Keywords to ensure that all relevant studies are found.

Truncation

Where there is a variation in a term use a symbol – usually * or $ - to account for all variations. For example:

\textit{alcohol}* will find \textit{alcohol > alcohols > alcoholic > alcoholism}
\textit{nurs}* will find \textit{nurse > nurses > nursed > nursing > nursery}

NB: EbscoHost (CINAHL, Medline, PsycINFO), Cochrane Library (Wiley) and Science Direct use *
Ovid (Maternity and Infant Care) uses $. 
Wildcards

Wildcards help address the issue of variations in spelling.

For a variation in spelling of only one letter: anaestheti?e will find anaesthetise or anaesthetize.

For a variation in spelling of more than one letter: an#esthetise will find anaesthetise or anesthetise.
Proximity

Google uses natural language so two or more words in a search produce results where the words are next to each other at the start of the results but drift apart the further down the list.

EbscoHost suggests the use of the search phrase: socially n3 disadvantaged. “n” is near. “3” is within 3 words.
In Ovid databases “adj” (adjacent to) is used instead of n.

Exact phrase searching

Some databases, including Google, do not use proximity operators but do offer exact phrase searching. Simply put speech marks around the phrase to be searched, e.g. “clinical governance”
Sticking it all together: combining

Boolean Searching

Boolean Operators are **AND, OR** and **NOT**.

In a search these give the ability to connect Subject Terms / Keywords demonstrating the relationships between them and helping to refine a search.

**AND** = First term and second term **must** appear in the same paper. AND helps to provide a focus.

**OR** = Either the first term or the second term have to appear in the papers. OR is used to combine searches for synonyms or concepts where it is not important which term appears as long as one of them is in a paper.

**NOT** = To exclude terms from a search.
## Sticking it all together: combining

### Boolean Searching 2

<table>
<thead>
<tr>
<th>Expression</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vitamin D \textbf{AND} Bone Loss</td>
<td>To find Vitamin D and Bone Loss in the same papers</td>
</tr>
<tr>
<td>Vitamin D2 \textbf{OR} Vitamin D3</td>
<td>To search for either Vitamin D2 or D3 in any papers</td>
</tr>
<tr>
<td>Vitamin D2 \textbf{NOT} Vitamin D3</td>
<td>To exclude any papers from a search on Vitamin D2 that also include mention of Vitamin D3</td>
</tr>
</tbody>
</table>
Database subject coverage

Cochrane Library
CINAHL
Medline
PsycARTICLES/PsycINFO
Maternity and Infant Care
NHS Evidence
British Nursing Index
Embase
PILOTS
ETC.....

Systematic reviews and clinical trials
Nursing and allied health journals
Medicine, Psychiatry, Health Services
Psychology, Mental Health
Midwifery
Clinical guidelines, knowledge summaries
Nursing and Midwifery
Biomedical
Post Traumatic Stress Disorder
Being thorough

You will also need to check sources that are not included in databases. These include:

- Hand searching recent editions of journals not yet indexed or not on databases but relevant to your subject area
- Grey literature
- Check the reference lists of relevant publications to find related material
- Contact authors of key articles
What are your top tips?
Suggested reading


