Effective Literature Searching for Clinical Practice

Andrea Ryce, Clinical Information Specialist (Librarian)
New Knowledge & Innovation, C&W Knowledge & Library Services
14 May 2019
Access the workshop PPT slides:

Go to C&W Library & Knowledge Services website:
→ https://cw-bc.libguides.com/home

→ Subject Guides

→ Knowledge Translation
Learning objectives

• To understand how database searching fits into the bigger picture of integrating evidence into practice

• To identify key steps in forming a clinical question (PICO question)

• To understand how to choose the right resources and databases for your clinical question

• To identify where and how to get help with searches and finding full-text articles
Agenda

<table>
<thead>
<tr>
<th>Introduction</th>
</tr>
</thead>
<tbody>
<tr>
<td>Database searching, connecting to the bigger picture</td>
</tr>
<tr>
<td>Developing a PICO question</td>
</tr>
<tr>
<td>➔ Activity: PICO</td>
</tr>
<tr>
<td>Selecting the best resource for your question</td>
</tr>
<tr>
<td>➔ Activity: Explore synthesized evidence tools</td>
</tr>
<tr>
<td>Translating your PICO question into a database search</td>
</tr>
<tr>
<td>➔ Activity: Searching CINAHL</td>
</tr>
<tr>
<td>Search Tips: Full-text; PubMed; Google Scholar</td>
</tr>
<tr>
<td>Wrap up &amp; Evaluation</td>
</tr>
</tbody>
</table>
Evidence Based Practice... about improving patient outcomes

Knowledge Translation (KT) is the dynamic and iterative process that includes synthesis, dissemination, exchange and application of knowledge to improve health and patient care.
6 Steps to EBP

1. Start with the patient -- a clinical problem or question arises from the care of the patient

2. Construct a well built clinical question derived from the case

3. Select the appropriate resource(s) and conduct a search

4. Appraise that evidence for its validity (closeness to the truth) and applicability (usefulness in clinical practice)

5. Return to the patient -- integrate that evidence with clinical expertise, patient preferences and apply it to prac

6. Evaluate your performance with this patient
Elements of a Good Search

• Use PICO format to guide clinical questions.
• Select the resources that can best answer your question.
• Search concepts one at a time to be combined later.
• Uses a combination of keywords and subject headings selected for key PICO elements.
• Truncation/proximity operators used appropriately.
• Applying limits at the very end of the search.
• Verify results are relevant to your research question.
PICO – 1\textsuperscript{st} step in search strategy

PICO can help break down your question into distinct concepts that you can then build into a search strategy

**P** Patient / population / problem (who or what eg. ailment, population)

**I** Intervention / exposure (treatment, test, procedure, medication, or illness or injury if studying the effects of an illness on a population)

**C** Comparison (there aren’t always multiple alternatives, or you might be looking at something VS nothing)

**O** Outcome (the outcome you’re looking at might be to relieve or eliminate symptoms, prevent recurrence, lower mortality, find a correct diagnosis)
PICO Example

What is the clinical effectiveness of CIMT in children with hemiplegia?

<table>
<thead>
<tr>
<th>P</th>
<th>Patient / population / problem</th>
<th>Children with hemiplegia</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>Intervention / exposure</td>
<td>Constraint-induced movement therapy (CIMT)</td>
</tr>
<tr>
<td>C</td>
<td>Comparison</td>
<td>Null, no therapy, usual therapy</td>
</tr>
<tr>
<td>O</td>
<td>Outcome</td>
<td>Improvement in function (Clinical effectiveness)</td>
</tr>
</tbody>
</table>

Among P does I (versus C) affect O?
PICO Example

What is the clinical effectiveness of CIMT in children with hemiplegia?

<table>
<thead>
<tr>
<th>P</th>
<th>Patient / population / problem</th>
<th>Children with hemiplegia</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>Intervention / exposure</td>
<td>Constraint-induced movement therapy (CIMT)</td>
</tr>
<tr>
<td>C</td>
<td>Comparison</td>
<td>Null, no therapy, usual therapy</td>
</tr>
<tr>
<td>O</td>
<td>Outcome</td>
<td>Improvement in function (Clinical effectiveness)</td>
</tr>
</tbody>
</table>

Among P does I (versus C) affect O?
Translating your PICO Question into a Search

P: Children with hemiplegia
I: CIMT
O: Improvement in function/clinical effectiveness

Add limits?
Eg. Publication Type; Ages
Translating your PICO Question into a Search

**P:** Children with hemiplegia

**I:** CIMT

**O:** Improvement in function/clinical effectiveness

Add limits?

Eg. Publication Type; Ages
Activity

1. Record your research question using the Clinical Question worksheet to define concepts that you can more easily search

2. Refine your question if needed (Among P does I versus C affect O?)

3. Start to identify search terms for each concept, and limits or filters you might use
Selecting the Best Resource

The resource you select will depend on:

- How much time you have
- The purpose of your question
- Your Context
- Resource availability
# Selecting the Best Resource

The resource you select will depend on:

- How much time you have
- The purpose of your question
- Your Context
- Resource availability

**WHAT you are looking for:**

**Synthesized/filtered information**

- Evidence syntheses
- Rapid Reviews
- Systematic Reviews
- Practice Guidelines
- Clinical Pathways

**Where you might find it:**

- UpToDate
- Trip Database
- JBI EBP Database
- Cochrane Database
Selecting the Best Resource

The resource you select will depend on:

- How much time you have
- The purpose of your question
- Your Context
- Resource availability

WHAT you are looking for:

- Synthesized/filtered information
  - Evidence syntheses
  - Rapid Reviews
  - Systematic Reviews
  - Practice Guidelines
  - Clinical Pathways

- Primary sources/Unfiltered
  - Journal articles:
    Single studies (eg. RCTs; cohort studies; qualitative studies; case series; etc.)
    - Clinical Trials

Where you might find it:

- UpToDate
- Trip Database
- JBI EBP Database
- Cochrane Database

Databases

- CINAHL
- PubMed MEDLINE
- OVID MEDLINE
- PsycINFO
- Google Scholar
Synthesized/Filtered Information Sources

Tools to find synthesized/filtered info

- Contains syntheses of appraised evidence for diagnosis, tests, therapies, etc.
- Searches key words, no subject headings
- Good place to start your search
- Quick
Activity: Trip Database or JBI EBP Database

• Go to JBI EBP Database (on C&W Library website)
  – Search for a topic and review synthesis types

• Go to www.tripdatabase.com
  – Search for a topic and limit by Evidence Type (on right side of screen)
Database Searching

We search the database fields (metadata), not the actual full text article.
Keywords

• Searches author’s words in title and abstract and find exact matches

• Helps to retrieve new literature

• Helps search topics which don’t have an appropriate subject heading or have a new subject heading
e.g. Zika Virus subject heading added to Medline in 2016
Subject Headings

- Select terms added to article records to help us find them based on what the article is about.
- Efficiently and quickly connects you to the research about your topic.
- Articles are indexed to the most specific subject heading, e.g., Infant, Premature.
- Controls for synonyms, e.g., author writes “UTI” CINAHL Heading = “urinary tract infections”
CINAHL

• Coverage of nursing and allied health literature from 1982 to present.

• Includes over 1,250,000 records.

• Indexes 2700+ journals, as well selected books, pamphlets, dissertations, audiovisuals in nursing, allied health, consumer health, biomedicine, alternative therapy, health sciences librarianship.
Find Subject Headings

Use “Create Alert” to receive new content on your topic as it is published

Create account to save articles to folders, save searches, and create alerts

Add search lines in “Search History” and by using +
### CINAHL – Structured Search Example

<table>
<thead>
<tr>
<th>Search ID#</th>
<th>Search Terms</th>
<th>Search Options</th>
<th>Actions</th>
</tr>
</thead>
<tbody>
<tr>
<td>S13</td>
<td>S6 AND S10</td>
<td>Limiters: Published Date: 2009/10/1-2017/12/31</td>
<td>View Results (541)</td>
</tr>
<tr>
<td>S12</td>
<td>S6 AND S10</td>
<td>Narrow by SubjectGeographic: canada, Narrow by SubjectGeographic: usa, Limiters: Published Date: 2009/10/1-2017/12/31</td>
<td>View Results (681)</td>
</tr>
<tr>
<td>S11</td>
<td>S6 AND S10</td>
<td>Limiters: Published Date: 2009/10/1-2017/12/31</td>
<td>View Results (934)</td>
</tr>
<tr>
<td>S10</td>
<td>S7 OR S8 OR S9</td>
<td>Limiters: Published Date: 2009/10/1-2017/12/31</td>
<td>View Results (10,417)</td>
</tr>
<tr>
<td>S9</td>
<td>NICU OR (baby OR neonatal OR newborn OR infant OR premature) AND (intensive care OR critical care)</td>
<td>Limiters: Published Date: 2009/10/1-2017/12/31</td>
<td>View Results (10,417)</td>
</tr>
<tr>
<td>S8</td>
<td>(MH “Neonatal Intensive Care Nursing”)</td>
<td>Limiters: Published Date: 2009/10/1-2017/12/31</td>
<td>View Results (2,615)</td>
</tr>
<tr>
<td>S7</td>
<td>(MH “Intensive Care Units, Neonatal”)</td>
<td>Limiters: Published Date: 2009/10/1-2017/12/31</td>
<td>View Results (8,670)</td>
</tr>
<tr>
<td>S6</td>
<td>S1 OR S2 OR S3 OR S4 OR S5</td>
<td>Limiters: Published Date: 2009/10/1-2017/12/31</td>
<td>View Results (24,267)</td>
</tr>
<tr>
<td>S5</td>
<td>(breast* OR breastfed*) OR (breast* n3 OR milk OR fed OR milk)</td>
<td>Limiters: Published Date: 2009/10/1-2017/12/31</td>
<td>View Results (13,931)</td>
</tr>
<tr>
<td>S4</td>
<td>(MH “Milk Banks”)</td>
<td>Limiters: Published Date: 2009/10/1-2017/12/31</td>
<td>View Results (382)</td>
</tr>
<tr>
<td>S3</td>
<td>(MH “Milk, Human”) OR (MH “Donor Milk”)</td>
<td>Limiters: Published Date: 2009/10/1-2017/12/31</td>
<td>View Results (4,657)</td>
</tr>
<tr>
<td>S2</td>
<td>(MH “Lactation”)</td>
<td>Limiters: Published Date: 2009/10/1-2017/12/31</td>
<td>View Results (2,639)</td>
</tr>
<tr>
<td>S1</td>
<td>(MH “Breast Feeding”) OR (MH “Breast Feeding Positions”) OR (MH “Latching, Breastfeeding”) OR (MH “Milk Expression”)</td>
<td>Limiters: Published Date: 2009/10/1-2017/12/31</td>
<td>View Results (17,139)</td>
</tr>
</tbody>
</table>
Activity: Search CINAHL

1. Using CINAHL, record possible keywords and subject headings for your concepts. Consider whether you will want to use a limit.

2. Search in CINAHL (or other relevant database)
   Create an account (optional)
   Search using your PICO concepts, building a structured search
   Save a search or add articles to a folder
PubMed Search Tips

• To access full-text articles from PubMed search using this link: https://www.ncbi.nlm.nih.gov/pubmed?holding=icarephsalib
• Explore using Limits (eg. Article Types; Ages)
• Change Format to “Abstract” view to quickly scan through citation abstracts
• Try “Clinical Queries” for quick searches
PubMed Search Tips contd.

• Use “Single Citation Matcher” for known article or to limit to known journal (link on home page)

• Use “Send To” to temporarily store citations on “Clipboard”; email to yourself; or save to a collection (a collection requires an account, the other options don’t)
Google Scholar Tips

• Search “cited by” to discover recent & relevant articles on your topic
• Find a relevant article in GS then search for it in PubMed to see how it is indexed (to find others)
• Create Alerts to get emails when new articles on your subject are published (or to follow an author or when a specific article is cited)
To Access Full-Text Articles

• Use “eJournals” to search for publication. If PHSA has access, it will map you to the journal (Link to eJournals can be found on library homepage or through the Databases list)

• Request the article using the “Request an Article” link on the library homepage
Literature Search Guidance

Online Tutorials

• Databases:
  - PubMed for Nurses
  - CINAHL
  - Search for Tests & Measures
  - MEDLINE OVID

• Search Basics:
  - Search Skills – Online Modules (C&W)
  - Searching Basics (UBC)

• Child Development and Rehabilitation website (Sunny Hill) – 5 Steps of EBP

• Search online for more how-to resources! Most libraries and database companies produce free guides and tutorials online.
UBC Library Resources
Thank You!

Andrea Ryce, BC Children’s and BC Women’s
Andrea.Ryce@cw.bc.ca | ext. 5569