# PICO Evidence-Based Practice Clinical Question / Search Plan Worksheet

## Clinical problem:

<table>
<thead>
<tr>
<th>P</th>
<th>Describe your <strong>patient</strong>, or <strong>population</strong> (age, sex, race, past medical history, etc.), or <strong>problem</strong>. The disease or condition, or the main topic of your question:</th>
</tr>
</thead>
</table>

## I

What **intervention** or action are you considering – treatment, diagnostic test, etc.? Is there a specific **issue** you would like to investigate?

### Domain:

- [ ] Therapy
- [ ] Prognosis
- [ ] Diagnosis
- [ ] Harm
- [ ] Other:

## C

Are you trying to **compare** or decide between two options – therapies, drugs, a drug and no medication or placebo, or two diagnostic tests? Or what is your **control**. Tip: There could be no comparison.

### Methodology:

- [ ] Systematic review, meta analysis, thematic synthesis
- [ ] Randomized controlled trial
- [ ] Cohort study
- [ ] Case controlled studies
- [ ] Case reports, single case study

## O

What is the **outcome** you would like to achieve? What are you trying to do for the patient? Relieve or eliminate symptoms? Reduce the number of adverse events? Improve function?

### Well-built clinical question: (Among P does I versus C affect O?)
<table>
<thead>
<tr>
<th>What type of question?</th>
<th>Background/Information gathering</th>
<th>Foreground/Focused</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of Citations needed:</td>
<td>A few very relevant articles</td>
<td>10-100</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Over 100</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Exhaustive research</td>
</tr>
</tbody>
</table>

**Search Terms** (list subject terms, synonyms, abbreviations, acronyms, variant spellings for each concept)

<table>
<thead>
<tr>
<th>Concept 1 (P)</th>
<th>OR</th>
<th>OR</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>AND Concept 2 (I)</th>
<th>OR</th>
<th>OR</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>AND Concept 3 (O)</th>
<th>OR</th>
<th>OR</th>
</tr>
</thead>
</table>

**Databases to search**  
- MEDLINE (Ovid)  
- CINAHL (Ebsco)  
- EMBASE (Ovid)  
- PsycINFO (Ebsco)  
- ERIC (Ebsco)  
- LLBA (Proquest)  
- Cochrane Database of Systematic Reviews  
- Database of Abstracts of Reviews of Effects (DARE)  
- Web of Science  
- PEDro, OT Seeker, SpeechBITE  
- Other

- Human only  
- Male  
- Female

**Age groups**  
- All ages  
- Infant, Newborn – 1 month  
- Infant, 1 month – 2 years  
- Child, Preschool 2 – 5 years  
- Child, 6 – 12 years  
- Adolescent, 13 – 18  
- Adult, 19 - 44  
- Middle aged, 45 – 64  
- Aged, 65-79  
- Aged, 80 and over

**Years to be searched:**  
- Current to 1 year  
- Current to 5 year  
- Current to 10 year  
- Current to 1946  
- Other, specify:

- Abstracts only  
- Electronic full text only

- English only  
- Other languages:
A. SEARCHING

1. Type in first single idea (e.g. your P concept)
   a) Subject heading searching
      A list of possible MeSH (Medical Subject Heading) terms is given.

Before choosing a MeSH term, check:

**Scope note:** click on the i for information

- Scope: Does the definition match my meaning?
- History note: When was this subject heading introduced? Does it cover my time period?
- Are there any alternative suggestions? Words in CAPS are related MeSH
- Used for: What are keyword synonyms covered by this subject heading?

**Tree:** click on blue underlined word to link to the tree

- Is this the most specific subject heading to use?
- Is it better to go broader?
- Should I use the Explode feature?
- Should I use the Focus feature?

If subject heading(s) is chosen, click **Continue**

A list of **subheadings** that qualify the search term is given.

- Do I need just one aspect of the topic?
- Will narrowing it down now be too soon?
- To choose all either click on the check box or click Continue

Your results will be displayed in the Search History box.

b) Keyword searching

No suitable subject heading? Wanting to search for material not yet indexed?
Select **keyword.mp.** and click Search

**Tools to use with keyword searching:**

**Truncation:** * Variant endings after the stem:
child* = children, childhood, childlike, childbirth
Balanc* = balance, balancing, balances, balanced etc.

**Wildcard:** ? = Additional letter in Canadian spelling colo?r, p?ediatric
# = replaces 1 character wom#n

**Proximity**
adjn Describes the relationships of words to each other:
Seat adj5 wheelchair = find the word “seat” within 5 words of the word “wheelchair”.

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Do the same process with your second single idea (e.g. your I concept)
SEARCH RESULTS are listed by result set #

B. COMBINING results

Build your search strategy using:

OR

To combine similar concepts eg. Subject heading set OR Keyword set

AND

To combine different concepts eg results from P AND results from I

C. LIMIT or refine search results

Limits define human characteristics
Age, gender, race
Limits define publication characteristics
Language, date published, type of research

D. Review RESULTS

Look at Abstract
Click on UBC elink to see fulltext
Print
Export to Refworks, Endnote etc.

Tip: Check the Subject headings of relevant articles for ideas to improve your search

E. SAVE search history to re-run your search or to set up alerts
**Ovid Medline Search strategy explained:**

<table>
<thead>
<tr>
<th>SEARCH</th>
<th>NOTES</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Osteoarthritis, Knee/</td>
<td>The subject heading (MeSH) for knee osteoarthritis is Osteoarthritis, Knee. The / in OvidSP indicates this is a subject heading.</td>
</tr>
<tr>
<td>2. knee osteoarthritis.mp.</td>
<td>.mp. in OvidSP is programming language that means the words knee osteoarthritis are looked for in the title, abstract, sometimes the subject heading field. In this interface words next to each other are treated as a phrase.</td>
</tr>
<tr>
<td>3. 1 or 2 [knee osteoarthritis]</td>
<td>The results of the subject heading and keyword searches in sets 1-2 are combined with OR to create a set of all the results related to the P concept.</td>
</tr>
<tr>
<td>4. exp Exercise/</td>
<td>exp indicates that the subject heading for exercise has been &quot;exploded&quot;. This action includes more specific types of exercise listed in the hierarchical tree under Exercise.</td>
</tr>
<tr>
<td>5. exp Exercise Therapy/</td>
<td>Include more specific types of exercise listed in the hierarchical tree under Exercise Therapy.</td>
</tr>
<tr>
<td>6. exercise movement techniques/ or tai ji/ or yoga/</td>
<td>Specific, applicable MeSH headings were chosen from the Tree for Exercise Movement Techniques.</td>
</tr>
<tr>
<td>7. exercis*.mp.</td>
<td>The truncation symbol * directs the search engine to look for variant endings such as exercise, exercises, or exercising.</td>
</tr>
<tr>
<td>8. 4 or 5 or 6 or 7 [Exercise]</td>
<td>This set is the result of combining all the Intervention (I) sets with OR.</td>
</tr>
<tr>
<td>9. 3 and 8 [Knee OA and exercise]</td>
<td>This set is the result of combining the P sets with the I sets with AND to retrieve studies that include both concepts.</td>
</tr>
<tr>
<td>12. 10 or 11 [Pain]</td>
<td>These are the combined results for the two O concepts.</td>
</tr>
<tr>
<td>13. 9 and 12 [OA and Exercise and Pain]</td>
<td>Combines the pain outcome O with the results of P and I using AND.</td>
</tr>
<tr>
<td>14. limit 13 to &quot;all aged (65 and over)&quot;</td>
<td>The appropriate age group limit for the question is applied.</td>
</tr>
<tr>
<td>15. limit 14 to &quot;review articles&quot;</td>
<td>Results are further reduced by applying the limit Publication Type: Review</td>
</tr>
</tbody>
</table>
## Database Commands

<table>
<thead>
<tr>
<th>Database</th>
<th>Truncation</th>
<th>Wildcard: 0 or 1 characters</th>
<th>Wildcard: Exactly 1 character</th>
<th>Phrase</th>
<th>Proximity</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>OVID databases</strong></td>
<td>* or $ or :</td>
<td>?</td>
<td>#</td>
<td>No quotation marks needed for most phrase searching.</td>
<td>adjn</td>
</tr>
<tr>
<td>Medline</td>
<td>Example: physio$ will find: physiology, physiological, physiotherapy….</td>
<td>Example: flavo?r P?ediatric</td>
<td>wom#n</td>
<td>Use quotes if there is a “stop word” in your phrase.</td>
<td></td>
</tr>
<tr>
<td>Embase</td>
<td>Child* will find: children, childbirth, child-centred, childhood…</td>
<td></td>
<td></td>
<td>Example: “Sensitivity and Specificity”</td>
<td></td>
</tr>
<tr>
<td>EBM reviews (incl. Cochrane)</td>
<td></td>
<td></td>
<td></td>
<td>“Costs and Cost Analysis”</td>
<td></td>
</tr>
<tr>
<td>HaPI</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>PubMed</strong></td>
<td>*</td>
<td></td>
<td>“your phrase”</td>
<td>Note: truncation stops automatic mapping to MeSH</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Note: truncation stops automatic mapping to MeSH and shows first 600 possible variations of endings</td>
<td></td>
<td></td>
<td>Proximity searching not available in PubMed</td>
<td></td>
</tr>
<tr>
<td><strong>EBSCOHOST databases</strong></td>
<td>*</td>
<td>?</td>
<td>“your phrase”</td>
<td>Nn or Wn</td>
<td></td>
</tr>
<tr>
<td>Academic Search Complete</td>
<td>Example: flavo#r P#ediatric</td>
<td>Example: wom?n</td>
<td></td>
<td>(N= Near, W= Within and “n” is the number of words)</td>
<td></td>
</tr>
<tr>
<td>CINAHL</td>
<td></td>
<td></td>
<td></td>
<td>Example:</td>
<td></td>
</tr>
<tr>
<td>Mental Measurement Yearbook</td>
<td></td>
<td></td>
<td></td>
<td>seat* n5 wheelchair will find seat or seating etc. within 5 words of wheelchair.</td>
<td></td>
</tr>
<tr>
<td>PsycInfo</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SPORTDiscus</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Web of Science</strong></td>
<td>*</td>
<td>?</td>
<td>“your phrase”</td>
<td>NEAR/x</td>
<td></td>
</tr>
<tr>
<td>Web of Science allows left-sided truncation as well as right-sided.</td>
<td>$ for exactly 0-1 characters</td>
<td>* for 0-multiple characters</td>
<td></td>
<td>You can specify x number of words; or if you just type NEAR, the default range is within 15 words.</td>
<td></td>
</tr>
</tbody>
</table>

For Google and Google Scholar search commands, please see our guide:

[http://guides.library.ubc.ca/greylitforhealth](http://guides.library.ubc.ca/greylitforhealth)
1. Identify which concepts are P, I and O

P _________________________________________________________________
I _________________________________________________________________
O __________________________________________________________________

2. Choose your search terms

- Find the Medical Subject Heading (MesH)
  P _______________________________           Explode? YES ___   NO ___

- What keyword* will you use? Will you include truncation?
  P _________________________________________________________________

➢ Combine these results with OR

- Find the Medical Subject Heading (MesH)
  I _______________________________           Explode? YES ___   NO ___

- What keyword* will you use? Will you include truncation?
  I _________________________________________________________________

➢ Combine these results with OR

➢ Combine these 2 sets with AND

- Find the Medical Subject Heading (MesH)
  O _______________________________           Explode? YES ___   NO ___

- What keyword* will you use? Will you include truncation?
  O _________________________________________________________________

➢ Combine these results with OR

➢ Combine this set with the previous AND

3. What limits will you use to refine your search?

____________________________________________________________________

4. What type of research will you include in your review?

____________________________________________________________________

5. Save your search history: Make an account and click on Save all and give your search a name.