### Step 1: ASK a searchable clinical question – PPICO framework

- State your research topic as a question. From this question(s), extract the 2 to 4 **key concepts** that you want to be present in your search results.
- Define search **limits** - publication date, language, article type (eg. RCT, review)

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<tr>
<th>Concept 1 Population</th>
<th>Search Terms (textwords and subject headings if available)</th>
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<th>Concept 2 Problem</th>
<th>Search Terms (textwords and subject headings if available)</th>
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<th>Concept 3 Intervention</th>
<th>Search Terms (textwords and subject headings if available)</th>
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<th>Concept 3 Comparison Intervention</th>
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<th>Concept 4 Outcome(s)</th>
<th>Search Terms (textwords and subject headings if available)</th>
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### Develop Search Terms

For each key concept in your question, identify search terms. You may need to add or delete some terms during the search process. Consider:

- Synonyms or similar terms
- Include sub-concepts of broad terms eg. disease prevention OR vaccines OR culling OR quarantine
- Acronyms (eg. BSE, bovine spongioform encephalopathy)
- Spelling variants for British vs American spelling (eg. anaemia or anemia)
- Select subject headings (if the database has these) for each of your search concepts
- Cultural, geographic variants (eg. feedlots vs CAFO concentrated animal feeding operation)
- Brand and generic drug names (eg. Aricept vs donepezil)
Use Effective Search Strategies

Your end-product determines whether you need to do a narrow search (eg. brief course assignment) or broad search (eg. systematic review, theses or dissertation), and which search mode is best for your purpose.

Strategies to Broaden Your Search

- Reframe your question to make it broader, more general
- Use broader, more general subject headings and textwords
- Remove the least important concept from your search
- Add synonyms within each search concept (using the Boolean OR)
- In textword searches:
  - Use terms for sub-concepts of your topic – eg. disease prevention OR vaccines OR culling
  - Use the truncation symbol * at the end of word stems to retrieve word variations
  - Eg: therap* retrieves therapy, therapies, therapist, therapeutic
  - Search other fields in addition to title and abstract eg. author keywords
- Use both subject heading and title/abstract textwords
- Apply fewer, or no limits to your search results

Strategies to Narrow Your Search

- Reframe your question to make it more specific
- Use more specific subject headings and textwords
- Add another concept to your search (using the Boolean AND)
- Use less or no synonyms within each search concept
- In textword searches:
  - Use fewer sub-concepts of your topic
  - Use the truncation symbol * less frequently, or not at all
  - Search only the title and abstract database fields
- Use either subject headings or textwords, but not both
- Enclose terms in double quotes to search for exact phrases eg. “pain management”
- Apply more limits to your search results

To retrieve studies from the top of the clinical evidence pyramid:

- In PubMed, complete your PICO search in Advanced or MeSH Database search modes. Then:
  - For therapy studies, under Article types (top left screen)
    - For reviews select: meta-analysis, systematic reviews
    - For primary studies select: randomized controlled trial
  - For diagnosis or screening studies, for primary studies, type: final PICO set # AND specificity[tw]

- In CAB Abstracts for therapy studies
  - For reviews: Search for systematic reviews or meta-analysis in the SU Subjects field, then use the Boolean AND to combine this search with your final PICO search
  - For primary studies: Search for randomized controlled trials in the SU Subjects field, then use the Boolean AND to combine this with your final PICO search