### Problem/Issue/Question:

- Check to see if there is an established way of doing things:
  - Talked with nurse manager, nurse clinician, and/or hospital (unit) experts
  - Checked for available systematic review/meta-analysis on the topic.

### PICO (Not applicable in all situations)

**P** – Patient, Population, Problem, Program:
- Important Characteristics

**I** – Intervention:
- Drug/treatment, diagnostic/screening test, exposure, etc.

**C** – Comparison Intervention (If Applicable):
- Alternative being considered (placebo, std. therapy, no treatment, gold std.)

**O** – Outcome:
- What to measure, accomplish, improve, affect (reduced mortality/morbidity, improve quality of life, accurate & timely diagnosis)

**T** – Type of Question

**T** – Type of Study (See Pyramid on Page 2)

The type of question can help determine the type of study one should search for:

<table>
<thead>
<tr>
<th>Type of Question</th>
<th>Best Type of Study</th>
</tr>
</thead>
<tbody>
<tr>
<td>Therapy</td>
<td>Randomized Control Trial (RCT)</td>
</tr>
<tr>
<td>Prevention</td>
<td>RCT / Cohort Study / Case Control</td>
</tr>
<tr>
<td>Prognosis</td>
<td>Cohort Study / Case Control / Case Series or Case Report</td>
</tr>
<tr>
<td>Diagnosis</td>
<td>Blind RCT / Compared to Gold Standard (best treatment/test for diagnosis)</td>
</tr>
<tr>
<td>Etiology/Harm</td>
<td>RCT / Cohort Study / Case Control</td>
</tr>
<tr>
<td>Cost analysis</td>
<td>Economic Analysis</td>
</tr>
</tbody>
</table>

**Other Question Formats**

- **Restatement of question using PICO components:** *(Needs to be answerable/measurable question)*

- **Search Terms/Concepts (Background Information):**
  
  Search for Background Information: Review related articles and other resources to come up with alternative terms or concepts.
  
  *(ex: Medline Plus, PubMed Clinical Queries, First Consult, Google Scholar, etc.)*

<table>
<thead>
<tr>
<th>Primary Search Term</th>
<th>Synonyms/ Related Concepts (Other Ways to Describe)</th>
</tr>
</thead>
<tbody>
<tr>
<td>P</td>
<td></td>
</tr>
<tr>
<td>I</td>
<td></td>
</tr>
<tr>
<td>C</td>
<td></td>
</tr>
<tr>
<td>O</td>
<td></td>
</tr>
</tbody>
</table>

- **What types of study designs should be included in the search?**

  Start search by trying to find evidence at the top of the pyramid & working downward

  **Links for Definitions of the following:**
  - Practice Guideline
  - Systematic Review
  - Meta-Analysis
  - Integrative Review
  - Review Article

  **Evidence Level & Quality Guide Sheet**

  **Filtered Information**

  **Unfiltered Information**

  Primary Studies

  Background Information / Textbooks / Expert Opinion / Manufacturer Recommendations

  Contact a librarian to discuss search strategy, possible databases and other aspects of the literature search.

  **Contact:** Roy Brown, MLIS, AHIP | Email: rebrown2@vcu.edu
✓ **Possible Limits to be Applied:**

<table>
<thead>
<tr>
<th>Gender:</th>
<th>Age Groups: <em>(may differ by database)</em></th>
</tr>
</thead>
<tbody>
<tr>
<td>____ Male</td>
<td>____ All Ages          ____ Adolescent (13—18 yrs.)</td>
</tr>
<tr>
<td>____ Female</td>
<td>____ Newborn (&lt; 1 month)   ____ Adult (19 - 44 yrs.)</td>
</tr>
<tr>
<td>Species:</td>
<td>____ Infant (1 - 23 months)       ____ Middle aged (45 - 64 yrs.)</td>
</tr>
<tr>
<td>_____ Humans</td>
<td>____ Pre-School (2 - 5 yrs.)    ____ Elderly (65 - 79 yrs.)</td>
</tr>
<tr>
<td>____ Animals</td>
<td>____ Child (6 - 12 yrs.)        ____ Aged (&gt; 80 yrs.)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Years to be Covered:</th>
<th>Languages: English Only</th>
<th>Other Languages: ________________</th>
</tr>
</thead>
</table>

✓ **Known Authors/Researchers in the Field**

1)

2)

✓ **Relevant Citations:**

**Authors_________________________**  **Title_________________________**

**Source Title_________________________**  v. ____ no. ____ date ____________

**Authors_________________________**  **Title_________________________**

**Source Title_________________________**  v. ____ no. ____ date ____________

♦ *If you find a good article, search for it in PubMed, CINAHL or another database that has a controlled vocabulary and see how it is indexed. This will allow you to find terms that may be useful to find articles on the same topic.*

✓ **Useful Terms and Databases Searched (Controlled Vocab Terms & Keywords)**

<table>
<thead>
<tr>
<th>Database/Source #1</th>
<th>Database/Source #2</th>
<th>Database/Source #3</th>
</tr>
</thead>
<tbody>
<tr>
<td>__________________</td>
<td></td>
<td>__________________</td>
</tr>
</tbody>
</table>
**Appraisal of the Literature: Is There Adequate Evidence?**

- **Yes**

**Proceed with Evidence Based Practice Project**

- **Next Steps:**
  - Finalize team members & schedule meeting
  - Time of Initial Meeting: _________________
  - Team Members: 1. _________________
  - 2. _________________
  - 3. _________________
  - Assess translation of evidence into practice setting
  - **Gather Pre-Intervention/Project Data**
  - Create Action Plan to Implement Change
  - **Gather Post Intervention/Project Data**
  - Evaluate Outcome
  - Report Results to Decision Makers
  - Adopt Change & Identify Next Steps
  - Disseminate

- **No**

**Proceed with a Research Project**

- **Next Steps:**
  - Contact Nursing Research Advisory Council
  - Find or Be Assigned Mentor
    - Name of Mentor/Email/Phone Number: _________________
  - Formulate IRB Proposal and Submit for Approval - [VCU IRB Link](#)
  - Collect Data *(Pre and Post)*
  - Analyze Data
  - Determine Impact or Outcome of Study
  - Disseminate
**Advantage** | **Disadvantage**
---|---
Controlled Vocabulary (Subject Heading) | 
- May provide terms that can broaden or narrow search  
- Accounts for most common synonyms  
- Retrieve all items in database indexed under the topic  
- Recently coined terms may not have a subject term assigned  
- Can be difficult to find if no list of subject terms is included in the database

Keyword | 
- Retrieve synonyms, jargon, new or distinctive words  
- Identify relevant articles quickly to find appropriate controlled vocabulary  
- May retrieve irrelevant articles  
- Your search must account for synonyms and alternative terms

**Tips & Reminders to Perform a Good Search**

- Consider what you want to know & create a question to focus your search.
- Choose the database or resource that is the best to answer your question.
  - CINAHL: Good resource when problem falls within the scope of nursing & allied health practice.
  - PubMed: Good resource when problem is medical in nature or if you are unsure where to start.
- Search Concepts Separately & Combine with Boolean Operators – Easier to manipulate your search.
- Always come up with synonyms for your search terms/concepts.
- Use Subject Headings/Controlled Vocabulary Whenever Possible.
  - Keyword Searching: Use quotes to search for phrases like “pressure ulcer”
- Start your search broad and then make it more focused as you see what is in the literature.
- Never hesitate to adjust your search strategy once you evaluate your results.

**Finding Too Many Articles?**
Ways to **Decrease/Focus** Your Results

- Do not explode
- Restrict subject heading to major focus
- Choose any relevant subheadings
- Utilize limits to English language, human subjects, review articles, etc.

**Not Finding Enough?**
Ways to **Expand/Increase** Your Results

- Explode whenever possible
- Do not restrict subject headings to major focus
- Do not choose subheadings
- Consider searching back in time, look at citations
- Consider doing a keyword search

**Boolean Operators:**

<table>
<thead>
<tr>
<th>AND</th>
<th>OR</th>
<th>Not</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Pressure Ulcer AND Nursing Home)</td>
<td>(Pressure Ulcer OR Bed sore)</td>
<td>(Nursing Home NOT Pressure Ulcer)</td>
</tr>
</tbody>
</table>

**Pressure Ulcer**  
| Nursing Home | Bed sore | Pressure Ulcer | Nursing Home |

Retrieves records that contain **BOTH** terms entered  
Retrieves records that contain either ENTERED term  
Retrieves records that exclude the term following the operator
Originally appeared in the following article: