The PICO model helps you to develop a specific, answerable research question about a clinical health topic. The health/medical literature can then be searched for evidence to answer the PICO question.

A PICO question includes the following components:

- **P** - Patient population
  Describes a group of patients who have factors in common such as age group, gender, ethnicity, having a disease or condition.
  *Example:* overweight adult with hypertension

- **I** - Intervention or issue of interest
  Describes the intervention you are considering, such as a treatment or diagnostic test.
  *Example:* diet and exercise changes

- **C** – Comparison (a comparison is not always needed)
  If appropriate, identifies the main alternative treatment for comparison.
  *Example:* no change in diet or exercise

- **O** - Outcome
  Describes the desired effect or outcome for the patient.
  *Example:* reduction in blood pressure

**Resulting PICO question:**
In overweight adults with hypertension (P), does changing diet and exercise (I) result in reduced blood pressure (O)?

**Types of PICO questions**

The 2 most common types of PICO questions are:

- **Intervention question:** what treatment has the best outcome?
  *e.g.* In healthy older people (P), does the use of vitamin B12 supplements (I) improve cognitive function (O)?

- **Etiology question:** what are greatest risk factors or causes?
  *e.g.* Are pregnant women (P) who have a drug addiction (I) at greater risk for postpartum depression (O)?
Search planning for your PICO question

Step 1:
Please choose one of the PICO questions below to complete your Matrix Assignment. Circle the letter of the PICO question you have chosen:

A. In adults ages 65 and older (P), how does the use of an influenza vaccine (I) affect the likelihood of developing pneumonia (O)?

B. In sex workers (P), how do community empowerment interventions (I) affect HIV transmission rates (O)?

Step 2:
What type of PICO question is your question? Tick the appropriate box.

- Intervention question
- Etiology question

Step 3:
The three (or four) main concepts in PICO questions A and B are identified in the table below. For your PICO question (A or B), write down synonyms or alternate terms for each concept.

<table>
<thead>
<tr>
<th>Concept #1</th>
<th>Concept #2</th>
<th>Concept #3</th>
<th>Concept #4</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. older adults</td>
<td>A. influenza</td>
<td>A. vaccin*</td>
<td>A. pneumonia</td>
</tr>
<tr>
<td>B. sex workers</td>
<td>B. community empowerment</td>
<td>B. HIV</td>
<td></td>
</tr>
</tbody>
</table>

vaccin* will search for vaccine, vaccines, vaccinate, vaccination, etc.

* is the truncation symbol used in Google and most library databases
How to search Medline

Find Health Sciences library assignment guides:
➡️ Go to the library website: http://www.langara.ca/library/
➡️ Assignment Help → Health Sciences

1. Write down your PICO question (A or B)

Demo PICO question to begin searching:
➡️ Are teens aged 13-18 years (P) who do high amounts of video gaming (I) at increased risk for depression (O)?

2. Identify the main concepts / search terms in your PICO

1) ____________ AND 2) ____________ AND 3) ____________ AND 4) ____________

➡️ Demo concepts: teens AND video AND gaming AND depression

3. Search MEDLINE

a) Click on the link to MEDLINE
b) Enter your search terms from Step 2, as shown below:

teen* will search for teen, teens, teenagers, etc.

AND between boxes means that ALL your terms must be found in search results.

c) Limit your results to 2014- and click on ‘Search’
d) The next screen will show your Search Results.
4. Examine a MEDLINE Detailed Record
   a) Click on the title link for an article on the first page of results.

   The Detailed Record will give you a good description of the article, including an Abstract and MeSH terms (medical subject headings).

   b) On the right hand side, note Tools available (Add to folder, Email, Cite, etc.).
   c) Write down at least one Subject term or Abstract word/phrase to improve your search:

   → Demo topic new terms: *adolescent*, internet, games

5. Improve your search
   a) Go to the top of the Detailed Record page. You’ll see your 3 search boxes there.
   b) Add at least one new term to your search using OR, as below, and click on Search.

   OR means that ANY term inside the box can be in the search results.

   c) Remember to add articles of interest to your folder.

6. For this assignment, DON’T select review articles, systematic reviews or meta-analyses
   For the Literature Review Matrix assignment, you need original research articles, NOT reviews, systematic reviews, or meta-analyses.

7. Save your work in a temporary EBSCOhost folder to email to yourself
   → Click on the folder link
   → Select the articles & email them to yourself, choosing APA citation. Use any email address.
   → You can also email yourself a link to a saved search (see below).