Step-by-Step Example of Nursing Literature Search in PubMed:

1. Start with a PICO question. Example:

   *Is the incidence of falls decreased by a higher nurse-patient ratio?*

2. Determine the minimum main concepts; these are often the “P” and “I” of PICO. In general, it’s best not to use more than 3 main concepts. In this example, “falls” and “nurse-patient ratio” are the main concepts.

3. In PubMed, conduct a quick search using keywords of your main concepts and look for a “target article,” an article that matches your PICO question as closely as possible.  
   (NOTE: Be sure to always access PubMed through a link on GVSU’s library website).

   a. Example:

   ![PubMed search example](image)

   b. Scroll through results (this search retrieved only 44 results, so you can scroll through all of them); if an article or two seem to be about the topic you’re looking for, click on the title.

   c. Example: Click on this title in the results:

   *The Relationships of Nurse Staffing Level and Work Environment With Patient Adverse Events.*  
   Cho E, Chin DL, Kim S, Hong O.  

   The abstract reveals that “injury from a fall after admission” is one of the adverse effects included in the study, so this article may provide valuable information on additional search terms to use.

   d. On the abstract page, scroll down and look for “Publication type, MeSH terms,” and click on that (not all articles will have this, however).

   e. What you’re looking for here are **MeSH terms**. MeSH stands for Medical Subject Headings. These are the words the experts at PubMed apply to articles to indicate what they are about. MeSH terms are specific to PubMed (Medline), and they can be helpful in narrowing down a search.

   f. From this article, we can see the terms “Accidental Falls/statistics & numerical data,” “Nursing Staff, Hospital/statistics & numerical data,” “Nursing Staff, Hospital/supply & distribution*,” and “Personnel Staffing and Scheduling/statistics & numerical data**” are MeSH terms that apply to our PICO question.

   g. You can also look at a couple other articles from the keyword search to see if there are additional MeSH terms that might be useful.
h. Next, we’ll use MeSH terms to build a more specific search.

4. MeSH search in PubMed:

a. On the PubMed home page, locate the link to the MeSH database under “More Resources:”

![PubMed MeSH database link](image1)

b. Open the MeSH database and type in “accidental falls” (without quotes):

![MeSH search results](image2)

Read the definition to make sure this is the term you think it is. We could select subheadings as they did in the target article, but let’s start without subheadings.

c. Click “Add to search builder” on the right side of the page (circled in red above). Then click “Search PubMed.” This will generate a large number of search results which may not be related to nurse-patient ratio, but what we are accomplishing here is to add this search to our search history.

d. On the results page after clicking “Search PubMed,” click on “Advanced” just below the search box. This will reveal your search history (this search history will come in handy a bit later!):
e. Repeat the MeSH – Add to search builder – Search PubMed process for each of the other MeSH terms. For Nursing Staff, it makes sense to select two subheadings since our concept is specific to the number of nurses per patient:

f. Add MeSH term “personnel staffing and scheduling.” Go back to PubMed home, and click Advanced under the search box. Search history can be used to build a search by clicking “Add” next to your saved searches:

NOTE: This gets a little tricky here, because we want to search for either nursing staff or personnel staffing, so the “Add to search builder” doesn’t quite help with the last part. I manually add “OR “Personnel Staffing and Scheduling”[Mesh] to the same line as the Nursing Staff:

(Using the outer AND/OR toggle won’t work in this case)
Click “Search,” and here is the final search string and results:

("Accidental Falls"[Mesh]) AND ("Nursing Staff/statistics and numerical data"[Mesh] OR "Nursing Staff/supply and distribution"[Mesh] OR "Personnel Staffing and Scheduling"[Mesh])

If you copy and paste the search above (including all quotes and parentheses), you’ll get 144 results (this may vary depending on records added since this tutorial was created), and most of them are about nursing staff and accidental falls.

*This is not the end of your searching! You should also search with keywords to capture the most recently added articles, and search terms can be modified based on results. Searching is an iterative process, which means “search-modify-repeat.”*