Background Questions

**Background questions** are broad and when answered provide basic foundational knowledge. These types of questions often begin with "what" or "when".

Examples:
1. What are the most common medication errors made by nurses?
2. What is sepsis?
3. What are the contraindications for medication X?

Use *medical and health science textbooks and reference books* to answer background questions.

**Best available resource** to use for background questions is **R2 Digital Library**. R2 is a current collection of nursing, allied health and medical textbooks and reference books.

Retrieving Content:
- Browse textbooks by discipline / course focus
- Search using broad terms and consider if limiting by “Practice Area” is useful

Foreground Questions

**Foreground questions** are specific and relevant to a clinical issue that, when answered, provide evidence for clinical decision making.

**Using a 4A Process to Answer Foreground Questions**

**Ask** - formulate an answerable question to solve an information need related to professional practice

**Acquire** - find the evidence that answers the research question

**Appraise** - evaluate the evidence for professional use. What is our process for selecting high quality information to apply in practice?

**Attribute** - track and manage source citations to share out in references list
Step 1.
**ASK** - formulate an answerable question to solve an information need related to professional practice

In this phase: Develop a question that is clear, focused and may be answered by published research studies. Create a PICOT question.

The PICOT question is a consistent, systematic way to identify the components of a clinical issue.

**PICOT elements / PI(C)O or PIO**
- Who is the patient population (P) we want to service or assist?
- Is there a proposed intervention or issue of interest (I)? What is the change or treatment under consideration?
- Is there a comparison (C) intervention or issue of interest?*
- What is desired outcome (O) of interest?
- What is the time (T) it takes for intervention to achieve the outcome?**

Notes:
* A comparison of the intervention or issue of interest may be “none” or not pertinent in some questions.
** Time is not always required and is a challenging concept to search.

**Example Clinical Issue**
You’re a staff nurse at a busy residential care facility. Over the past three months, you’ve noticed medication errors with the residents on your unit seem to be occurring at a higher rate than usual, some with severe adverse effects.

Today you heard a report on the radio that the use of barcoding medication technology may reduce the rates of medication errors.

You bring up your observations to your nurse manager and the report findings. Your manager encourages you to search for more evidence that supports this as a best practice for safe medication administration to prevent and respond to this problem.

**PICOT Question Template for an intervention or therapy question type:**

In ____________________________ (P)
how does ____________________________ (I)
compared with ____________________________ (C)
affect ____________________________ (O)
within ____________________________ (T)?
Researching Clinical Questions

Step 2.
ACQUIRE - find evidence that answers the research question

In this phase: Search and retrieve evidence of the methods, interventions and practices used related to the PICOT question. This evidence will be found in research study articles published in current professional journals.

Best available resources for finding research studies in professional journals are the CINAHL (NSCC institution subscription) and PubMed (openly accessible) databases.

Health care is multidisciplinary and interrelated; evidence may be found in nursing journals but also medical and allied health journals. CINAHL database contains nursing and allied health literature and PubMed contains medical and life science literature so these two databases complement each others content and provide appropriate overlap for your research.

For Searching Strategies - See Handout Finding Research Studies Published in Professional Journals

Step 3.
APPRAISE - evaluate information for professional use

In this phase: Evaluate the evidence provided in the research studies. What is our process for selecting high quality information to apply in practice?

As you review the research studies from your results - you want to ascertain:

1. What is the level of evidence? How strong is the evidence offered by each research study / article. Is it a review article (filtered and synthesized review of multiple studies to determine strength of evidence) or a single descriptive or qualitative research study or something in between?
   a. Use the Evidence Hierarchy Pyramid

2. How well was the study conducted? Look at internal validity to determine was the study free from bias and error. Was the sample size adequate or the findings by chance, was there randomization or a control group, were the demographics and baseline clinical variables of groups similar.
   a. See Reading and Critiquing a Research Article. Align article with first research study read through.

The level of evidence plus internal validity are a proxy for quality and give clinicians confidence to apply evidence in practice.

Finally, consider external validity - how applicable and relevant is the information to the question at hand. Will you be able to apply it to professional practice?
Step 4.
**ATTRIBUTE** - track and manage source citations to share out in references list

In this phase: As you select research studies, you are entering the citations in a separate reference list.

If you approach your research this way, you will not have to create the list at the end of your process, and you will be easily able to track, manage and review your references. The list will be available to share out to faculty or colleagues, if your research results in policy change from your endeavors.

**Best available resources** RefWorks (NSCC institutional subscription) and the APA Style Guide to Electronic References (NSCC institutional subscription).