

The EBM search process

FORMULATE A WELL-BUILT CLINICAL QUESTION

Put your [foreground question](#) into the [PICO](#) format. Consider the type of question you are asking & the type of study that best helps to answer it.

SEARCH USING BEST PRACTICES

- Search concepts individually
- Use MeSH
- Check scope notes
- Explode
- Use subheadings (sparingly)
- Include keywords when needed
- Use AND or OR to combine searches
- Apply limits last

USE THE DATA

Once you have chosen your sources, make sure you cite them correctly. The DML-supported citation manager software [RefWorks](#) helps you seamlessly add sources to your assignments and projects.



RESEARCH YOUR TOPIC

Investigate [background questions](#) for your topic. Use DML's [Clinical Quick Reference](#) page for your preliminary research.

SELECT A DATABASE

Choose one of DML's databases on our [Core Databases](#) page. MEDLINE is a good start. Search MEDLINE with either the PubMed or Ovid platform. Searching techniques may vary slightly between databases but the best practices should be largely transferable.

EVALUATE YOUR RESULTS

You may need the full text of an article to determine if the study is sound research and relevant to your foreground question. Our [Finding Full Text resource guide](#) will help you get it.

1

Research your topic

Background questions answer **general** clinical questions regarding a topic. They typically ask the who, what, when, where, why, & how of a disorder, test, treatment, etc.

Examples of background questions include:

- How does hypercholesterolemia increase a patient's risk of having a myocardial infarction?
- What are the complications of sickle cell anemia?
- What treatments are available for congestive heart failure?

3 Background questions are best answered by medical textbooks, point-of-care tools (DynaMed, Essential Evidence Plus, ClinicalKey), and by narrative reviews (found in databases), all of which can be found on our [Clinical Quick Reference](#) page.

2

Formulate a well-built clinical question

Foreground questions ask for **specific** knowledge about a patient or population in order to inform a clinical decision. They are often organized in the PICO format.

P = Patient or problem. Include characteristics of patient & co-morbidities if relevant.

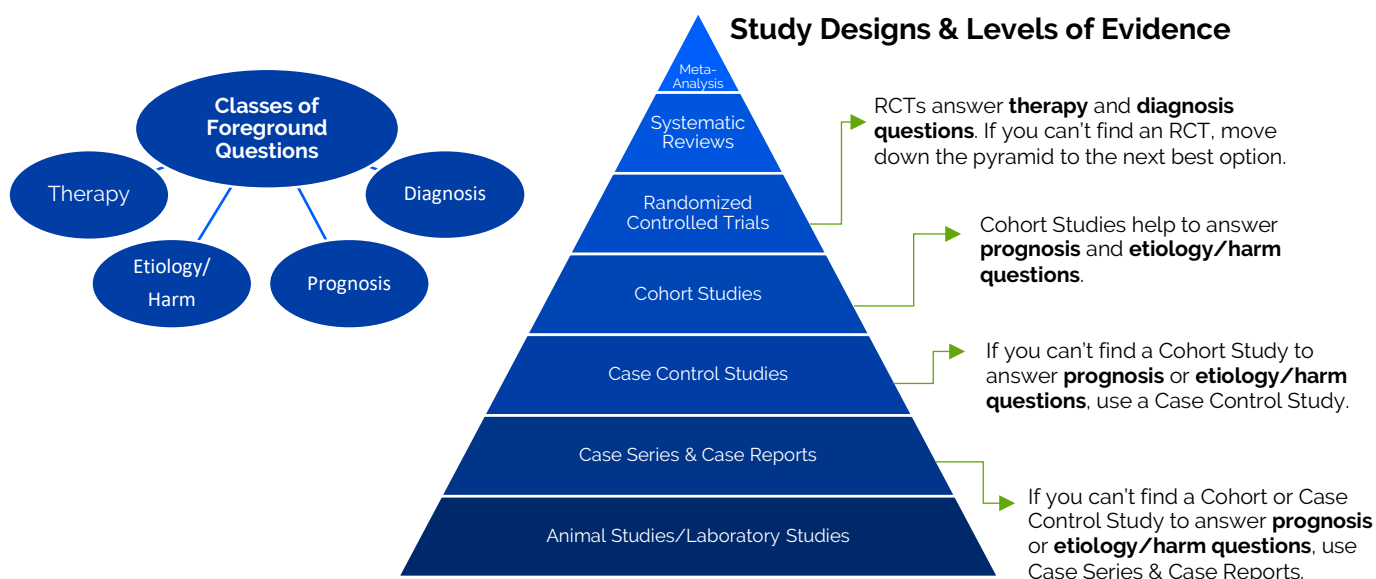
I = Intervention, prognostic factor, or exposure.

C = Comparison. What is the alternative to the intervention?

O = Outcomes. What do you hope to accomplish, measure, improve, or affect?

Example: In patients with Allergic Rhinitis, are intranasal steroids more effective than antihistamines in the management of Allergic Rhinitis symptoms?

3 Foreground questions are best answered by consulting medical databases, like MEDLINE (via PubMed or Ovid), Embase, CINAHL, or Cochrane Database of Systematic Reviews. These resources and others can be found on our [Core Databases](#) page.



4

Search concepts individually

WHY? Entering terms separately gives you flexibility when combining/recombining terms later.

HOW? Type terms into the search box one at a time, not all at once, as you might with a search engine such as [Google](#).

Check scope notes

WHY? To confirm that a MeSH term matches your concept.

HOW? Varies by database. In MEDLINE (Ovid), click the "i" icon. In CINAHL, click the yellow speech icon. In MEDLINE (PubMed) scope notes must be accessed in the MeSH database.



Use subheadings sparingly

WHY? Using subheadings early in your search may narrow your results too much.

HOW? Pick one or two that match your topic well. Otherwise, "Include All Subheadings."

Use keywords when needed

WHY? There may not be a MeSH term that matches your concept well.

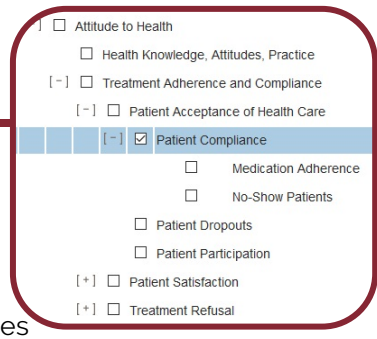
HOW? Varies by database. Use quotes around your keyword (MEDLINE PubMed) or type in your keyword and select it from the bottom of the subject heading list (MEDLINE Ovid and CINAHL).

Use MeSH (Medical Subject Headings)

WHY? Subject headings, like MeSH, are controlled vocabulary that make searches more efficient. Subject headings gather all of the synonyms for one concept and match, or "map," them to one unified heading.

HOW? Varies by database. In MEDLINE (Ovid) and CINAHL, type a term in the search box and choose from a suggested list of subject headings. In MEDLINE (PubMed), enter your term in the MeSH database to browse for potential matches.

Clicking on a subject heading reveals the heading in a hierarchy of broader terms (above) and more specific terms (nested beneath). Looking at the tree may help suggest additional headings by which to search.



Explode

WHY? Exploding tells the database to retrieve articles indexed with your heading **as well as** terms that are more specific than your heading.

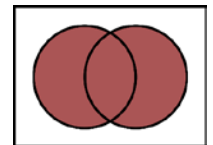
HOW? Check the "Explode" box (in MEDLINE Ovid). CINAHL and PubMed explode terms automatically.

Select	Subject Heading	Explode
<input type="checkbox"/>	COMPLIANCE	<input type="checkbox"/>
<input type="checkbox"/>	LUNG COMPLIANCE	<input type="checkbox"/>
<input checked="" type="checkbox"/>	PATIENT COMPLIANCE	<input checked="" type="checkbox"/>

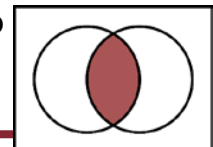
Use AND or OR to combine searches

WHY? Get precise, relevant results with the flexibility to recombine terms as needed.

HOW? Combine synonyms or parts of the same concept with **OR** (e.g. kidney **OR** renal). **OR** = more results.



Combine different concepts in the PICO with **AND** (e.g. kidney transplant **AND** compliance). **AND** = fewer results.



Apply limits last

WHY? To narrow down too many results; if your assignment has date or study type requirements.

HOW? Varies by database. Search limiters, or filters, are often found on the left side of your results page. Common filters include: Publication date, English Language, Publication Type.

5

Finding Full Text

WHY? Not only should you decide if the articles you found help to answer your foreground question, you should also evaluate each study for sound methodology, significance of results, and reasonable absence of bias.

Evaluating a study requires looking at the full text of the article. Databases like MEDLINE (PubMed and Ovid) and CINAHL are *citation databases*; not designed to provide full text to the majority of the articles indexed. But you **can** get full text through DML's journal subscriptions.

HOW? When you view your results page in any database, look for the "Check for Full Text @ DML" link resolver icon. You will be directed to one of two pages:



- A page with a link to full text - DML has full text of article. Click. Read. Enjoy!
- A page with a link to our [Finding Full Text resource guide](#) that will walk you through the steps of creating an ILLiad account (see image below) and making an Interlibrary Loan (ILL) request.

A screenshot of the ILLiad Logon page. At the top is a dark blue header with the text "Welcome to ILLiad @ Dahlgren Memorial Library". Below the header is a white form titled "ILLiad Logon" with a red asterisk and the text "Indicates required field". The form contains two input fields: "Username" and "Password", both marked with a red asterisk. Below the fields is a "Logon to ILLiad" button. At the bottom of the form are links for "Forgot Password?" and "First Time User?". A small copyright notice at the very bottom reads "Copyright © 2016 Altas Systems, Inc. All Rights Reserved."

6

RefWorks

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