PubMed Primer:

An Introduction to PubMed for School Nurses
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Acknowledgment

This document is based on a booklet produced by Barbara Folb, Project Manager of the Public Health Alliance (PHIA) at the University of Pittsburgh [http://nnlm.gov/train/resource.html?ResourceID=195]

Prepared by Jan Glover, Cushing/Whitney Medical Library [Last update: January 15, 2009]
Goals

For school nurses, PubMed is the first stop to identify authoritative current research. It is the largest, most comprehensive database in biomedicine with substantial nursing coverage. It provides access to more than 18 million citations, spanning more than 60 years and thousands of journals.

You will learn to:

- Navigate to PubMed
- Identify appropriate search terms for your clinical or research questions
- Run successful searches
- Limit searches using available tools
- Locate specific articles in PubMed quickly and simply
- Utilize special filters to quickly identify relevant information
- Order articles using the LoansomeDoc document delivery system

By the end of this session, participants will be able to:

1. Turn an information need into an answerable question.
2. Identify appropriate keywords for your clinical or research questions
3. Navigate to PubMed
4. Perform a search in PubMed
   a. With or without using Boolean operators
   b. Using specific fields
5. Narrow, expand or modify a search to improve results
6. Utilize special filters to quickly identify relevant information
7. Use specialized search features: Citation Matcher
8. Print, save or email search results
9. Save search strategies to rerun at a future date
10. Order full text articles from the Cushing/Whitney Medical Library

This booklet is more for a reminder as you practice searching PubMed. It contains explanations and examples of most everything that was described during the demonstration and/or hands-on session.

For a more in-depth look at searching PubMed, check out the upcoming "Advanced PubMed.

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What is PubMed?

PubMed contains records for journal literature in all disciplines related to the health sciences. It contains an expanded version of the MEDLINE database, which includes very recent journal articles not yet completely indexed for MEDLINE. Journals indexed in PubMed include medicine, public health, nursing, dentistry, veterinary medicine, health care systems, and preclinical sciences, and life science journals.

PubMed contains MEDLINE citations from 1949 to the present.

PubMed contains journal citations only. Records describing books, audiovisual, and other formats held by the National Library of Medicine can be found by searching the NLM Gateway, [http://gateway.nlm.nih.gov/gw/Cmd](http://gateway.nlm.nih.gov/gw/Cmd).

PubMed was created and is maintained by the National Center for Biotechnology Information, National Library of Medicine. It is crossed linked with a selection of molecular biology and genetics databases, and the entire group is called Entrez.

Although this session will cover many features of PubMed, there are many other aspects of the product that might be interesting.


These tutorials will also be helpful: [http://www.nlm.nih.gov/bsd/disted/pubmed.html](http://www.nlm.nih.gov/bsd/disted/pubmed.html)

Navigate to PubMed

Point your favorite web browser to [http://www.pubmed.gov](http://www.pubmed.gov)

Or go to the Connecticut School Nurses web site [http://www.med.yale.edu/library/school_nursing/welcome.html](http://www.med.yale.edu/library/school_nursing/welcome.html) and click the Databases link.

It is the first link on the list.
Preparing to Search PubMed [or I need some information fast!]

The following segment presents an overview of the initial steps of this process.

Start with a Scenario, situation or research inquiry

For this example, we’re interested in the looking at the risk of respiratory disease in children who are exposed to passive smoking. Our question is:

In children who are exposed to passive smoking, what is the risk of respiratory disease?

Select the Resource

The best resource for us to search is PubMed.

Formulate the Strategy

• Break question into component concepts

Underline or circle the main concepts in your question:

In children who are exposed to passive smoking, what is the risk of respiratory disease?

Make a list of all the synonyms for the concepts in your question. When thinking about synonyms, consider that there are variations in word endings and make sure when you are searching that you truncate appropriately.

• Combine concepts using AND or OR operators

<table>
<thead>
<tr>
<th>OR</th>
<th>Passive smoking</th>
<th>AND</th>
<th>Respiratory disease</th>
<th>AND</th>
<th>children</th>
</tr>
</thead>
<tbody>
<tr>
<td>OR</td>
<td>Cigarette smoke</td>
<td>AND</td>
<td>wheezing</td>
<td>AND</td>
<td>Infant(s)</td>
</tr>
<tr>
<td></td>
<td>Respiratory infection(s)</td>
<td>AND</td>
<td>Toddler(s)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

TIP: You may not use all of synonyms or parts of the question in your final PubMed strategy.

• Apply limits

You only want to review studies with sound methodologies. The best evidence for this question will be found in a cohort study. Do a subject search for cohort study and with the Boolean ‘AND’ and it to the final statement. Other potential limits are ‘english’ or ‘human’ or ‘child’. 

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PubMed Search Screen

PubMed Services:
Search tools to maximize finding bits of information

Entrez PubMed:
Help, tutorials, and news

Related Resources:
Other NLM databases and full-text resources

Query box: type your search here!

Tools to manipulate search results

Links to search help

Changes, new features

PubMed is a service of the U.S. National Library of Medicine that includes over 18 million citations from MEDLINE and other life science journals for biomedical articles back to 1948. PubMed includes links to full text articles and other related resources.

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Social reciprocity deficits are a core feature of the autism spectrum disorders (ASD). This review summarizes the state of research in group-based social skills training programs for school-age children and adolescents with ASD. All published studies of group social skills interventions between 1995 and 2006 were reviewed, as well as dissertations examining group-based social skills intervention programs. To assess the state of the science, a template developed by an NIMH work group was applied to 54 identified studies. Based on this review, the empirical support for this approach is incomplete, but promising intervention strategies were identified. Recommendations for the design of future treatment trials to guide clinical practice are offered.

PMID: 17190104 [PubMed - indexed for MEDLINE]
Quick Overview: Running a Search in PubMed

1. Prepare your search by identifying what information you want to find. List pertinent concepts and their relationships.

2. Using the query line, enter your concepts all on one line (using ANDs and ORs appropriately).

3. Evaluate the results.
   Are the citations on topic? Too much? Too little?

4. Modify your search.
   If too little is retrieved:
   • Try different words or phrases to represent your key concepts.
   • Try broader concepts (New England instead of Connecticut)
   • For terms with multiple meanings, look for a MeSH term to represent the concept
   • Use more specific words or phrases.
   If too much is retrieved:
   • Add more concepts to your search
   • Use more specific concepts
   • Look for words only in the title, or use only MeSH terms for your concepts (or focus the MeSH term).
   • Choose relevant limits such as age group, language, publication year or publication type.
PubMed Search Syntax

- Boolean Operators

Boolean operators must be entered in uppercase letters for PubMed to recognize them.

Examples:

**AND** – both terms/phrases must appear in the record. Narrows retrieval.

\[ \text{west nile virus AND mosquitoes} \]

\[ \text{west nile virus AND mosquitoes} \]

**OR** – either term/phrase must appear. Most often used for synonyms. Increases retrieval.

\[ \text{MRSA OR methicillin-resistant staphylococcus aureus} \]

**NOT** – following term/phrase must not appear. Use with caution, may remove relevant citations. Very useful when comparing retrieval from multiple sets (History screen), use it to exclude citations already viewed in another set.

\[ \text{mouse NOT computer} \]
• Parentheses

Use parentheses to indicate to PubMed which portion of your search statement to work on first – much the same as algebraic equations.

vectors AND (avian OR birds OR crows) AND west nile virus

• Truncation

Truncation allows you to accommodate for all variations in word endings. The symbol in PubMed is the * . It will look for an unlimited number of characters for the first 600 variations of truncated term.

adolescen* retrieves adolescent, adolescents, adolescence, etc.
child* retrieves child, childish, children, etc.

• Phrase Searching

For words enclosed in double quotation marks, PubMed will attempt to match your phrase to its database of known phrases. If your phrase is not included, each word will be searched separately.

“injury prevention” AND bicycl*

• Field Searching

This method of searching allows you to instruct the system to search for exactly what you want in the very field that you expect it to be. Field names or their abbreviations must be enclosed in square brackets. See PubMed Help for a list of the field names.

MRSA[ti] AND child*[ti]
Sample Search

Type your search terms in the query box. Review the results. Use Limits to help target appropriate articles.

Type terms in query box. Use AND to find the intersection. Then click on Go

Limits

Review results. Check the review articles by clicking on the Review Tab

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Limits

Limiting your search to English language articles, articles appearing in the Nursing literature and to the age group of interest might quickly target appropriate articles.
Viewing Search Results

The menu bar below the query box contains tools to change the display format of the records retrieved. It does not appear until there is a list of citations for you to manipulate.

Other Display formats:

- **Summary** is the default display for the citations when multiple citations are retrieved.
- **AbstractPlus** displays the citation, abstract and PMID. This is the default format when a single citation is retrieved.
- **Citation** displays the citation, abstract, MeSH, Substance Names and PMID.
- **MEDLINE** displays the complete record in a tagged format. Use this one if you’re saving citations to bibliographic management software such as EndNote, ProCite, Reference Manager, or RefWorks.
Using the Clipboard

The clipboard saves citations you select from any search [only at the same computer and within an 8 hour time period!]. When you have collected all the citations you want, go to the clipboard to save, print or email the group.

To view the clipboard contents, click on the ‘Clipboard’ tab under the query box to open the clipboard. Notice the asterisk on the clipboard tab – that indicates that you have items on the clipboard.

The clipboard will open with all the selected citations displayed.

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Saving, Printing, and Emailing

Citations can be saved, printed or emailed from any search results screen or from the Clipboard. The procedure is the same from either place.

- **Saving Records to a File**

  1. Choose the ‘Display’ that you want.
  2. Decide if you want to save all the citations retrieved or selected citations only. If selected citations only, click in the check box next to each citation you want to save. If you don’t, all citations in the set will be saved whether they are currently displayed in the browser window or not.
  3. Choose File from the ‘Send to’ drop down.
  4. A "Save as" dialog box opens. Change the suggested name of the file from 'pubmedresult’ to a name you will understand. Save as a text file (.txt) such as influenza.txt.
  5. Choose which directory to save the search in using the save in drop down box.
  6. Click on Save in the dialog box.
  7. Your search is now saved. You may open it in a word processor or Notepad.

- **Printing Records in Text Format**

Following these steps will print your citations without the PubMed graphics, menus and banners.

  1. Choose the ‘Display’ that you want.
  2. If you want to print more than the twenty citations that show in the default display, or to choose from a larger number than is currently displayed, click on the "Show" drop down box arrow and choose a larger number.
  3. Decide if you want to print all the citations currently displayed or selected citations only. If selected citations only, click in the check box next to each citation you want to print. If you don’t, all citations displayed will be printed. Citations in the set, but not currently displayed, will not be printed in either case.
  4. Choose Text from the ‘Send to’ drop down.
  5. The browser will display the results as plain text.
  6. Use your browser’s print function to print the page.

- **Emailing Records**

You can email results from a search display or the clipboard.

  1. Choose which citations you want to email
     a. To email only selected citations from the current search or clipboard display, click in the box in front of each citation to be sent. Then choose Email from the ‘Send To’ drop down button.
     b. To email all citations in a set, or a sequential range of citations, choose Email from the ‘Send To’ drop down button.
  2. From the Email display screen, choose the format, sort order, and number of citations to send.
  3. Enter any additional message to send.
  4. Enter the recipient’s email address, then click on the Mail button.
Using Related Articles to Expand a Search

‘Related Articles’ links you to a set of articles that is very closely related to your article that you’ve chosen. Click on the ‘Related Articles’ link.

Author Searching

PubMed recognizes a search as an author search either because of the format of last name followed by initials, or by using the field tag [au]. All of the following searches will be recognized as author searches, but will retrieve different sets as noted:

- Dato V  
  Finds Dato V without middle initial and with all possible middle initials
- Dato VM 
  Finds only this exact name form
- "Dato V"[au]  
  Finds Dato V with no middle initials
- Dato[au]  
  Finds Dato with any possible initials

Single Citation Matcher

Use the Single Citation Matcher to find complete citations from incomplete information. Any two or more pieces of the citation should work.

1. To access it, click on ”Single Citation Matcher” under ‘PubMed Services’ on the left-hand scan column.
2. Fill in the known information, and click on Search.
3. A PubMed search result screen appears with all matching citations.
Ordering Articles from the Cushing/Whitney Medical Library

When you find articles that you would like to see, click on the ‘Request Journal Articles’ link from the homepage. The Medical Library will obtain an electronic copy or a print copy, depending on how you want to receive the full-text journal article. Notice that you can request books, too.

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