

PHARM 309
Secondary Resources
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Lecture objective:

By the end of this lecture (and with a little practice outside of class), you will be able to:

- Define secondary resources
- Identify 3 key bibliographic databases used in this class
- Follow the 5 steps to search for primary literature on your drug information topic
- Change your search strategy when you get too much or too little

Overview

Secondary resources are “pointers” to primary literature. They provide a description of the material, sometimes with an abstract (summary), so that you can find the original piece of literature.

This lecture focuses on bibliographic databases, i.e. electronic, secondary resources that describe and point to journal articles. Typical search results will be lists of references (citations), often with abstracts, to journal articles. Many databases also provide links to the full text of the primary source.

Databases

There are literally hundreds of databases, covering a wide variety of subjects and materials (journal articles, newspapers, laws, images) from which to choose. From the Pharmacist Toolkit (<http://healthlinks.washington.edu/pharmacist>), select “More databases” under “Find Journals & Articles” to see a list of possible databases to use for finding articles relevant to pharmacy. For this class, you are expected to use PubMed (covered in a future lecture) and two additional databases from the list below. If you need to use additional databases to locate material, you can do so and let us know which ones you used (and why).

All of these databases are UW-restricted which means you must either use them on campus, or log in from off-campus. Brief descriptions, with information on how to print strategies, and links to help with the “mechanics” of searching are provided.

Drugs & Pharmacology (EMBASE)

- Subset of larger database, EMBASE
- Use for research and clinical articles with emphasis on European and investigational literature
- Includes literature on the effects and use of all drugs and potential drugs, clinical and experimental aspects of pharmacokinetics, pharmacodynamics, side effects and adverse effects

- Searchable by author, address, keyword, Emtree controlled vocabulary, drug names, device names, source, etc
- Drug terms in the controlled vocabulary are the preferred, generic name according to the WHO International Nonproprietary Nomenclature (INN)
- European spelling in the full-text
- Include search history when printing or saving references OR copy the search history into a text or Word file (then print)
- If you save your search, you can also print strategy from saved searches
- Complete database guide available at:
<http://www.ovid.com/site/products/ovidguide/emdpdb.htm>

IPA (International Pharmaceutical Abstracts)

- Produced by American Society of Health-System Pharmacists
- Covers clinical and technical drug information, pharmacy practice, pharmaceutical education, and legal aspects of pharmacy and drugs
- Includes 750 journals and abstracts of papers presented at ASHP's major meetings
- Searchable by author, keyword, source
- Drug names may be searched by either generic name (USAN) or trade named
- Include search history when printing or saving references OR copy the search history into a text or Word file (then print)
- If you save your search, you can also print strategy from saved searches
- Complete database guide available at:
<http://www.ovid.com/site/products/ovidguide/ipabdb.htm>

Web of Science

- Combines Science Citation Index, Social Science Citation Index and Arts & Humanities Index
- Includes journal articles, books and meeting abstracts
- Strength is citation searching, i.e. taking a known reference and searching to see who has cited it
- Open search history and copy and paste to a file or print from browser
- If you save your search, you can also print strategy from there
- Minitutorials and videos available at:
<http://scientific.thomson.com/support/recordedtraining/wos/>

BIOSIS Previews

- Covers all aspects of life sciences and indexes over 6000 journals
- Includes journal articles, books, book chapters, meeting abstracts, and patents
- Same interface as Web of Science
- Searchable by author, keyword, concept code, taxonomic classification, etc.
- Additional instructions available from help button within databases
- Open search history and copy and paste to a file or print from browser

- If you save your search, you can also print strategy from there

Current Contents

- Special subset of Web of Sciences that provides “table of contents” searching
- Includes journals and web sites
- Search by topic, author or journal; limit to journal category
- Open search history and copy and paste to a file or print from browser
- If you save your search, you can also print strategy from there
- Tutorial available at:
<http://scientific.thomson.com/support/recordedtraining/currentcontents/>

Steps to Successful Database Searching

Step 1: Identify key concepts and parameters of your search

Take a few moments to determine and categorize the “real” question. During your “reference” interview, you asked probing questions to understand what the individual wants, how quickly and how much information. During that time, you asked for clarification of terms and set the parameters for finding the information they needed.

In getting ready to run the search, make a list of the key concepts or pieces of the search. In the question below, key concepts are in boldface:

How effective is **cranberry juice** in the **prevention** of **urinary tract infections**?

In addition to these concepts, identify other parameters of importance to you. For example, do you want only materials written in the English language? Will you accept “letters to the editor” or do you only want reports of clinical trials? How far back in time will you search? Are there specific journals to include or exclude? Populations, e.g. female, adolescents, athletes, etc., to include or exclude?

Determining the key concepts and parameters ahead of time helps you approach your search in a more effective, efficient manner. Defining your search also creates an awareness of what you are including or excluding during the search process. When you use a limit, e.g. year or publication type, in a database you both focus your search as well as exclude specific items from your search. And you may be relying on someone else’s bias or interpretation of the literature.

Step 2: Select synonyms for each concept

Make a list of the different ways of describing each concept. Depending on the features of your chosen database, you will have to use multiple ways of searching for the same concept.

Some databases, e.g. PubMed will automatically “translate” your words into specific keywords (indexing terms, subject headings or controlled vocabulary) to

help you find articles regardless of words used by the author. Others, e.g. EMBASE, will map your words to its subject headings. And still others, e.g. Web of Science are literal and will only use the term in the exact form in which you type it.

Most databases offer the ability to truncate words in order to find variant forms, e.g. cranberr* or cranberr\$ will retrieve cranberry as well as cranberries. Truncation can turn off-mapping or yield some interesting results depending on where you place the wildcard.

Step 3 Create a simple strategy linking your concepts

The simplest way to combine concepts is to use Boolean operators such as AND, OR, and NOT depending on what you are trying to retrieve. Each database will process the Boolean in a different order. Review the order for your database before searching.

Often you can use parentheses, just like in algebraic equations, to force a certain processing order. Cranberry or vaccinium and urinary tract infection or uti will yield different results than (cranberry or vaccinium) and (urinary tract infection or uti). You may find it most effective to search each term by itself and combine the results later so you can reuse different sets in different combinations.

Other databases, e.g. IPA, also use positional operators, ADJ or NEAR which let you place words next to each other or in the same sentence. Again, review the instructions for the specific database.

Step 4 Choose your database and run your search

Select your database based on your knowledge of its contents and the parameters of your search. Possible choices for this course are listed earlier in the notes.

Step 5 Review your results and change your search strategy when you get too many or too few hits

A list of tips, Improving Search Results, can be found on HealthLinks at <http://healthlinks.washington.edu/howto/improving.html>

My favorites include:

- Related articles – most databases provide a link to find related articles. It's a quick easy way to find more relevant articles
- Limits – by year, by publication type, by search field, e.g. word in title of article. Just keep in mind what you lose when you choose to focus a search in this way.

- Use controlled vocabulary instead of natural language. Keep in mind, indexers are human and you may lose articles that aren't indexed correctly or haven't yet been indexed.

Conclusion

Searching secondary resources is more of an art than a science.

You learn best by trying different approaches.

When you spend more than 15 minutes trying to locate information using a database, that's the time to come ask for help. We're the database experts, you're the subject expert. Together we can create a better search.

Work smart. Save time. Ask us!