Secondary Drug Information Resources
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By the end of the lecture you should be able to:
• define secondary resources.
• describe when secondary resources should be consulted to obtain drug information.
• identify secondary resources commonly used by pharmacists.
• assess the scope of each secondary resource.
• perform a search using a secondary resources to locate primary literature.

Secondary resources are databases which index or abstract the primary literature.

Indexing refers to listing of bibliographic information only. An abstract is a short summary of the content of the article. Almost all of the databases that are used currently are abstracting services, although they become indexing services when an author doesn’t provide an abstract or publisher doesn’t write one.

When should secondary resources be consulted?
• When tertiary sources fail to answer the drug information question.
• When time or logistics limit access to the primary literature (here secondary resources are used as a resource themselves, not just a gateway to the primary literature).
• When it is necessary to locate or update tertiary resource information.

Strengths
• Makes searching for primary literature not only efficient, but possible.
• Allows primary literature searches from remote locations.
• Summarizes grossly the methods and results of the study in one paragraph.
• Provides bibliographic information for citations.

Limitations
• Takes time and attention to learn how to use efficiently.
• There is a lag time between when original study published and when article appears in secondary resource search. (this has improved dramatically in the last few years)
• Not all journals are covered by one abstracting service. Which database to search depends upon information desired. This has to be learned.
• There is not enough information in an abstract to assess study quality.
• The abstract is written by the authors of a study and may or may not be very informative.

Interfaces versus databases
• A secondary resource is a database that indexes or abstracts the primary literature.
• An interface is a portal: a web page access to the database, not the database itself.
• Examples of interfaces are Ovid, WebSPIRS/SilverPlatters (also by Ovid - go figure), and Web of Knowledge.
• Some interfaces allow you to access multiple databases (example: with Ovid you can access CINAHL, IPA, and others), whereas other interfaces allow access only to a single database (examples: MD Consult, Lexis-Nexis)

Abstracts
• An abstract is a short summary.
• People talk about abstracts in two different ways and you need to know about both.
• First, an abstract of a paper is the short summary of the contents of that paper located at the beginning of the journal article.
• Second, when people talk about “an abstract,” they mean a summary of a poster or platform presentation at a national meeting. These abstracts are often published in a journal associated with the organization holding the national meeting.
• When you see the term “abstracts” in the databases below, it means the second type of abstract: a summary of a poster or verbal presentation from a national meeting.

Secondary Resources available to you

♥ = important database that you need to know; you will choose 3 of these to use for your secondary resources assignment. One of the 3 will be PubMed.

BIOSIS Previews ♥
• Previews abstracts and indexes information from nearly 6,000 sources including journal articles, meeting and conference reports, books, and patents
• Covers publications since 1969; BIOSIS biological abstracts covers over 3700 life science journals
• Life science focus; more than 50% of journals are from Europe, the Middle East, and Africa
• May be more comprehensive than PubMed, but not used as often because PubMed is free and because PubMed has better limit-setting.
• Current interface: Web of Knowledge. Quick search limits: publication year > 1997; document type (e.g., abstract, clinical trial, meta-analysis), language, publication year (all limits).

CINAHL
• Provides coverage of the literature in nursing and 17 allied health disciplines (pharmacy isn’t one of them) from 1982.
• Currently over 1700 journals are indexed and contain abstracts: > 500 nursing, > 1100 Biomedical & Allied Health, > 70 CAM
• Updated monthly.
• Current interface: OVID. Quick search limits: latest update, research, abstract, English, publication year.

CHID Online (Combined Health Information Database)
• Provides titles, abstracts, and availability information for health information and health education resources.
• Produced by health-related agencies of the federal government.
• Useful for perusing available health promotion/education materials that you need for an educational program. Go here when you need to make pamphlets, posters, or need statistics on a health condition
• Updated quarterly.
• Current interface: has its own. Limits: abstracts, English, full text, publication year.

Current Contents ♥
• Tables of contents of more than 8,000 scholarly research journals and selected books (> 2000) in all subjects. Current Contents Connect (Web of Knowledge portal) also includes web sites and funding information.
• Broader than PubMed or BIOSIS in scope; it also contains meeting abstracts and book reviews. Use to complement PubMed searches – you may find something that was buried in PubMed.
• Current interface: Web of Knowledge (updated daily). Limits: document type (e.g., meeting abstract, journal article, review), language, publication type, publication year.

Drugs and Pharmacology (EMBASE) ♥
• A subset of the EMBASE database that contains information pertinent to the specialty of drugs and pharmacology.
• Covers 4,500 journals from 70 countries; updated weekly; locates articles published since 1974
• Covers more international journals than PubMed. Good to use to look for studies of herbal meds, since these used more extensively in Europe.
• Current interface: Ovid. Quick limits: abstracts, human, English, publication year

International Bibliographic Information on Dietary Supplements (IBIDS) Database
• Database of published, international, scientific literature on dietary supplements, including vitamins, minerals, and botanicals.
• Produced by the Office of Dietary Supplements (ODS) at the National Institutes of Health to assist the public, health care providers, educators, and researchers in locating credible, scientific information on dietary supplements. Journal articles from > 3200 publications (some of these publications are not peer-reviewed, though).
• Has separate consumer database and peer-reviewed citations database.
• Updated quarterly.
• Portal: has its own. Little ability to limit searches; a lot of veterinary studies will be mixed in with human studies but it’s difficult to sift out human studies.
• Good to peek at if you’re pursuing a herbal medicine topic. Literature on > 250 botanicals.

International Pharmaceutical Abstracts (IPA) ♥
• Includes bibliographic and abstract information from over 850 pharmaceutical, medical, and health-related journals published worldwide since 1970. Produced by ASHP. Updated monthly.
• Focused on drug therapy and pharmaceutical information. Abstracts from all pharmacy-related meetings available through this resource.
• Useful for looking for background articles on starting a new pharmacy service and for pharmacy management-related topics.
• Current interface: Ovid. Quick limits: abstracts, human, English, publication year, full text

LexisNexis Academic UNIVerse
• Full text information from nearly 5000 publications that span news, financial, medical, and legal information.
• Useful to obtain printouts of newspaper articles your patients may have read.
• Portal: has its own.

MD Consult
• In addition to the tertiary information, this also has a secondary resource function. It’s more cumbersome than PubMed, but may save a few minutes if you can stay within the same page.

PubMed ♥ ♥
• Service of the National Library of Medicine (NLM) and NCBI
• Provides links to over 12 million citations, dating back to 1950s; updated daily
• Provides access to
  ➢ MEDLINE (covers > 4,800 biomedical journals)
  ➢ OLDMEDLINE (covers articles published in 1951 through 1965 in the fields of medicine, preclinical sciences, and allied health sciences; no abstracts or extensive indexing)
  ➢ in-process citations
  ➢ publisher-supplied citations
  ➢ Bioethics
  ➢ NCI’s CancerLit Bibliographic database (a bibliographic database focusing on cancer that contains more than 1.5 million citations and abstracts from over 4,000 different sources including biomedical journals, proceedings, books, reports, and doctoral theses)
• Access is free to public; this means that you can access it from anywhere you have a computer, and so can your patients
• PubMed Central provides access to selected full text articles; UW provides access to additional full text articles
• Useful for any drug or disease state topic.
• Does not search for meeting abstracts.
• Has its own portal; search limits: MeSH terms, publication type, ages, entrez date (limits time periods of search), publication date, languages, human, gender, subsets (limits to certain types of literature, e.g., cancer, AIDS journals)

TOXNET
• Produced by NLM; includes several databases
• Toxline—Extensive array of references to literature on biochemical, pharmacological, physiological, and toxicological effects of drugs and other chemicals
• EMIC—Environmental Mutagen Information Center--Current and older literature on agents tested for genotoxic activity
• DART/ETIC--Developmental and Reproductive Toxicology and Environmental Teratology Information Center--Current and older literature on developmental and reproductive toxicology
Web of Science ♥
- contains the Science Citation Index
- The Science Citation Index has bibliographic coverage and searchable cited references from over 5,900 journals in around 150 scientific disciplines, back to 1945; updated weekly.
- This is the part of the Institute for Scientific Information (ISI: a private scientific research information access company now owned by Thomson*). The Web of Science is a general name for all the citation products this company carries (the Web of Science also includes social science and arts and humanities citation indices; > 8,500 journals in all), while you will likely just use the Science Citation Index. *Thomson also owns Current Contents, BIOSIS, and Micromedex®.
- Useful if you have an older article and want to see what newer articles have referenced it (a descendency search tool)
- Current interface: Web of Knowledge; Search limits: document type (e.g., abstract, clinical trial, meta-analysis), language. The “cited reference search” is what makes this database unique.

Summary of the most important general secondary resources:
- BIOSIS (meeting abstracts, life science focus)
- Current Contents (more journals than PubMed)
- EMBASE (more European studies than PubMed)
- IPA (best resource for pharmacy-related topics and abstracts)
- PubMed (the best secondary resource available, most robust search limits)
- Science Citation Index (allows you to find recent studies if you have already located an older study)

The secondary resources assignment:
- You will use at least 3 of these secondary resources to begin your search for primary literature for your drug information paper topic.
- These searches will help you determine what your topic will be. You will want to locate 3-5 studies that you will review in the body of your paper.
- Are you locating fewer than 3 studies? You will have to broaden the scope of your question or choose another question.
- Finding more than 5 studies on your topic? You may need to narrow the scope of your topic.
- You will print out
  - The cover sheet.
  - 3 histories, one from each database. NOTE! You may need to label the database yourself.
  - Photocopies of the studies you found (these will be returned to you!)