**Techniques for Locating Evidence-Based Literature**

**Learning Objectives**

* Learn to construct clinically relevant questions to search medical literature
* Identify the parts of a well-built clinical question using the PICO format.
* Distinguish between sources for background information and sources for foreground information (Review of FCP I)
* Improve searching strategies for finding information to clinical questions using:
  + MeSH
  + Subheadings
  + Limits

**Resources to Remember**

* [**DynaMed**](http://purl.lib.uiowa.edu/dynamed) (Access from the Hardin Library website): provides evidence based summaries with evidence ratings for a wide range of diseases and drugs.
* **PubMed** (Access from the Hardin Library website): is a comprehensive literature database of life sciences and biomedical information that covers the fields of medicine, nursing, dentistry, veterinary medicine and the health care system. Specific limits are needed to get at evidence based information in this database. (NOTE: There is a help sheet for PubMed in your packet)
* **Foundations of Clinical Practice II Subject Guide** (<http://guides.lib.uiowa.edu/fcp2>) – Here you will find lots of information created just for FCP II.
* **Interlibrary Loan**: **(**<http://www.lib.uiowa.edu/hardin/illa.html>) – Don’t forget that you if we don’t have access to an article you need, we can always get it from another library.
* **Amy Blevins:** I’m your personal librarian and here to help you if you need it. Please contact me if you have any questions. [Amy-blevins@uiowa.edu](mailto:Amy-blevins@uiowa.edu)

**Contents of Handout**

1. PICO Forms and Clinical Vignettes p. 2-3
2. PubMed Help Sheet p. 4-5

**Practice Sessions**

1. “During an evaluation by his internist, a 48-year-old man reports that his wife tells him that he snores loudly. Further questioning reveals that he has been falling asleep whenever sedentary. His physical examination is notable for truncal obesity (body-mass index [the weight in kilograms divided by the square of the height in meters], 32) and hypertension (blood pressure, 150/96 mm Hg). He is referred to a sleep specialist for nocturnal polysomnography (sleep study), which reveals evidence of obstructive sleep apnea, with an obstructive apnea–hypopnea index […]Treatment with continuous positive airway pressure (CPAP) is recommended.” (Taken from N Engl J Med 2007; 356:1751-1758).

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|  | **Initial Question** | **Alternate Vocabulary** |
| **P**atient |  |  |
| **I**ntervention |  |  |
| **C**omparison |  |  |
| **O**utcome |  |  |

**State your question:**

**Search strategies that worked best?**

1. “A 68-year-old retired high school teacher lived with his wife in an active retirement community. Since retiring three years previously, he had been doing volunteer work and had enrolled in the local university's extension program. During the past six to eight months, he and his wife noticed that he was forgetting names and losing things. On several occasions, he had angry outbursts and accused his wife of hiding his wallet and car keys and of having an affair with a neighbor. He had lost interest in his hobby (building model planes) and seemed depressed. A week before being seen in the clinic, he became lost while driving home from the grocery store. This episode alarmed his wife, and she made an appointment for both of them with his primary care physician. He was healthy and usually drank two glasses of wine daily, and he took no medication. The patient and his wife were concerned that his forgetfulness and getting lost may not be "normal" aging. His vital signs, results of fundoscopic examination, and results of cardiac examination were normal. He had no carotid bruits or focal neurologic signs, and his gait was normal.” (Taken from <http://xnet.kp.org/permanentejournal/spring02/alzheimers.html>) How would you know if this patient has Alzheimer’s Disease?

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|  | **Initial Question** | **Alternate Vocabulary** |
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| **C**omparison |  |  |
| **O**utcome |  |  |

**Search strategies that worked best?**

**Basic Searching in PubMed**

PubMed contains over 19 million citations for biomedical literature from MEDLINE, life science journals, and online books.

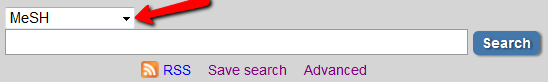
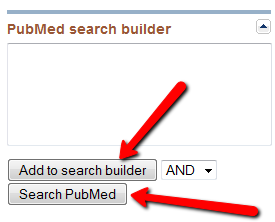
**Accessing the Database**

1. Go to the Hardin Library homepage at <http://www.lib.uiowa.edu/hardin/>
2. Click on the link that says “PubMed.” It is located near the top left of the page under the heading “Popular Databases.” (NOTE: While PubMed is freely available, it is best to access it from the Hardin Library website so that you will have access to full text articles that you are only entitled to as an affiliate of the University of Iowa).
3. If you are off-campus, you will be prompted for your Hawk ID and password.

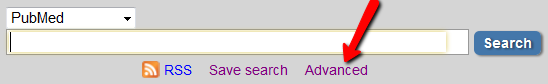
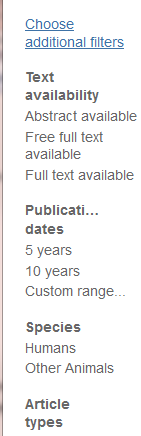
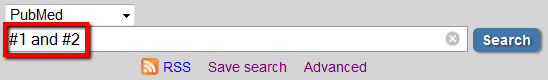
**Searching via Keywords** (Quicker search, but less focused search)

1. Break your search into concepts. For instance, a search on the effects of aspirin on hypertension has two concepts. “Aspirin” is one and “hypertension” is the other.
2. Search one term at a time.
3. Check the “Details” box on the bottom, right-hand side of the screen to see how PubMed interpreted your search and make changes accordingly.
4. Repeat steps 2 and 3 as necessary for additional terms.
5. Combine searches and then limit your search as necessary (See “Combining Searches” and “Limiting Results” on the second page of this handout).

**Searching via MeSH** (More structured search meant to yield higher quality citations)

1. Break your search into concepts. For instance, a search on the effects of aspirin on hypertension has two concepts. “Aspirin” is one and “hypertension” is the other.
2. Change the drop box to “MeSH,” then enter one concept in to the search box at a time.   
   
3. You will be given a list of MeSH terms. Use the descriptions beneath the terms to determine which is most appropriate and then check the box to the left of your chosen term. (Note: if you want to use subheadings, click the link for the MeSH term).
4. Now, near the top, right of the screen, click the “Add to Search Box” button.
5. If you have another term to search, clear the top search box and enter your new term.
6. Once you have entered all of you terms, select “Search PubMed.
7. Combine searches and then limit your search as necessary (See “Combining Searches” and “Limiting Results” on the second page of this handout).

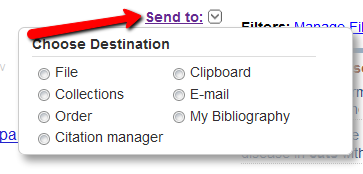
**Combining Search Results (Search History)**

1. From any PubMed screen, click the “Advanced Search” link above the search box.   
   
2. Near the middle of the screen is your Search History. You can combine your previous searches by typing the “#” plus the number to the left of the appropriate search into your search box as shown in the picture below and then clicking the “Search” button. 

**Limiting Search Results**

1. You have options for limiting your search results to certain age groups, languages, publication types, etc. To limit a search result, use “Choose Additional Filters” option to the left of your search results.
2. Select the appropriate limits. Keep in mind that the more limits you select, the fewer articles you will retrieve. Also, be aware that not all limits show up. You may have to click, “more…” to see all available options. Then, click the limits again. They are activated when they turn blue with a checkmark to the left.

**Managing Results**

1. You can check the boxes to the left of citations and then email or print them out for later use. Once you have checked all the citations you are interested in go to the top right of the screen and click on the “Send to” link.
   1. To email: simply click the “email” option.
   2. To print: click the “Clipboard” option. Then, click the link for “Clipboard” near the top right of the screen. All the items you’ve selected will display for printing.

**Finding Full Text**

1. Click the title of an article to see more information, including options for full text access, abstracts (when available), and MeSH terms.
2. To see if full text is available, use the InfoLink button. (It is generally located near the top right of the screen). If no full text is available, contact us at Hardin or use our interlibrary loan service <http://www.lib.uiowa.edu/hardin/illa.html>