THE UNIVERSITY OF CHICAGO MEDICINE & BIOLOGICAL SCIENCES

The Basics of Scholarship: Literature review approaches, Assessing the value of an article, and Presenting an article at Journal Club

Heather M. Limper, MPH
Healthcare Delivery Science
January 29, 2015

Literature review approaches

Literature review approaches- Common databases

- UChicago Library: http://www.lib.uchicago.edu/e/index.html
- **PubMed:** has been available since 1996 and provides over 23 million references. Provides access to citations and full text articles from the biomedical literature (medicine, nursing, dentistry, veterinary medicine, health care, and the preclinical sciences). PubMed includes MEDLINE (mid 1960s-present), OLDMEDLINE (1950-1965), in-process citations (not yet indexed).
    - **MEDLINE (Ovid):** is the National Library of Medicine® (NLM®) journal citation database. Started in the 1960s, it now provides over 21 million references to biomedical and life sciences journal articles back to 1946. MEDLINE includes citations from over 5,600 scholarly journals published around the world.
- **DynaMed:** a clinical reference tool created by physicians for physicians and other health care professionals for use primarily at the 'point-of-care'.
- **UpToDate:** a practical clinical reference comprised of thousands of original topic reviews which address a specific clinical issue and provide detailed recommendations. UpToDate performs a continuous review of over 270 journals and other resources.
- **PsychMed**

UChicago Library Online

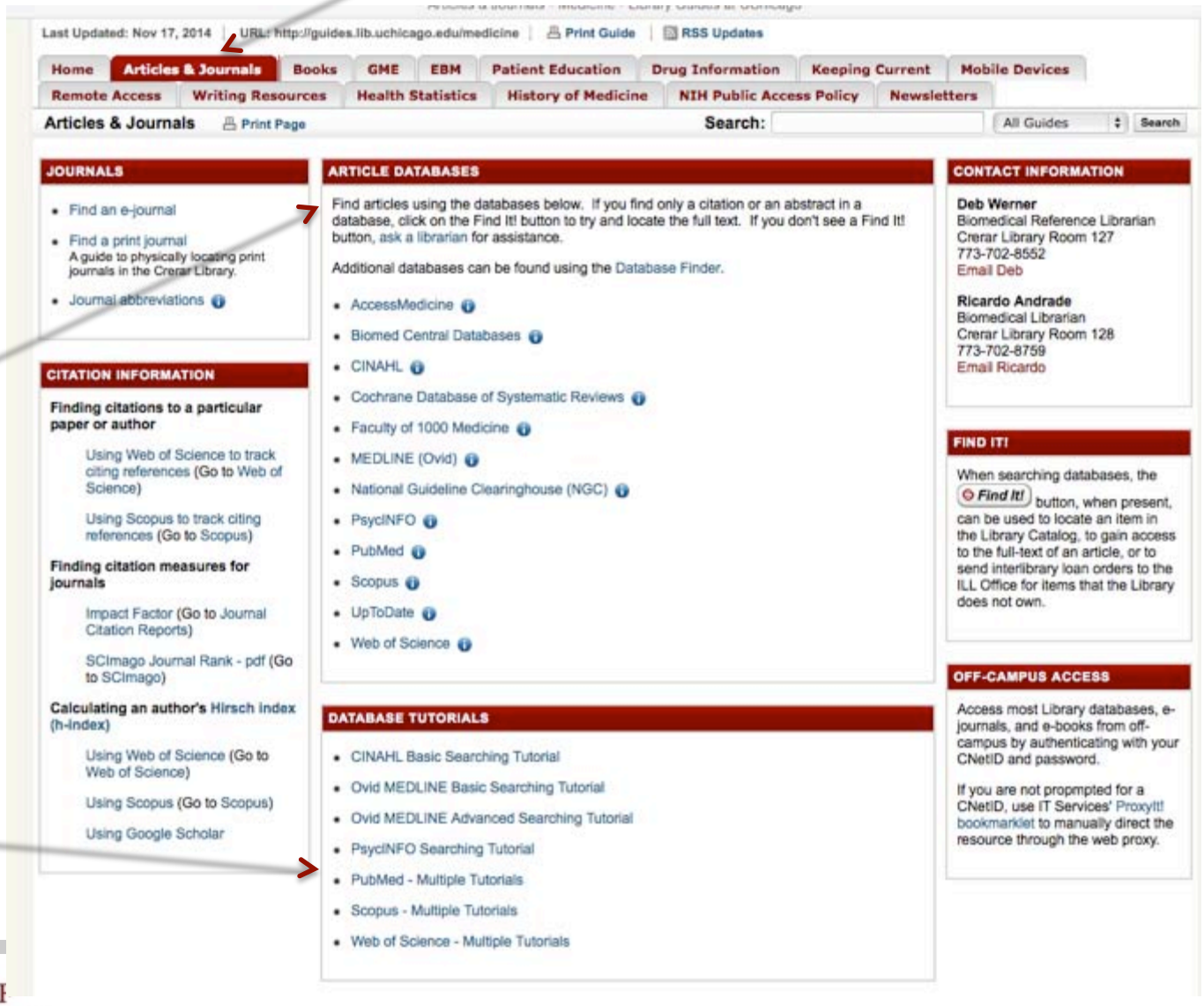
Choose a subject/area

[Guides & Tools Tab](#)

- Research Guides by Subject

Generates a list of databases for you

Even provides tutorials



UChicago Library

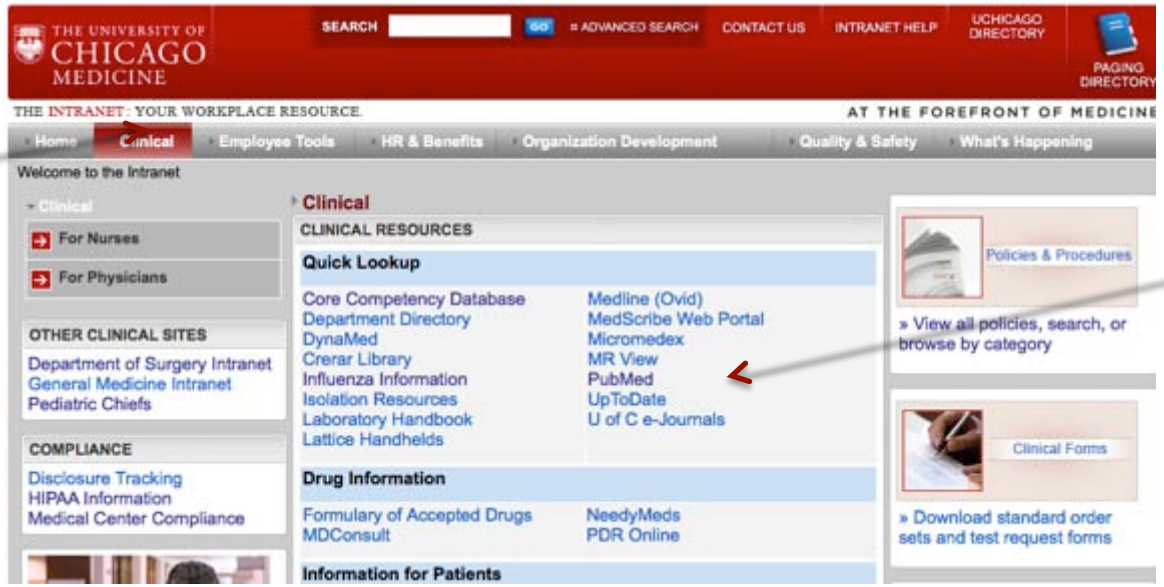
- http://www.lib.uchicago.edu/e/index.html
- Remote access is available using a CNET ID or UCHAD

  1. Access through remote hospital applications
  2. Google “UChicago Library Remote Access” and you’ll be prompted to enter your username and login

Accessing PubMed

From the Intranet

Clinical Tab



Under "Quick Lookup"

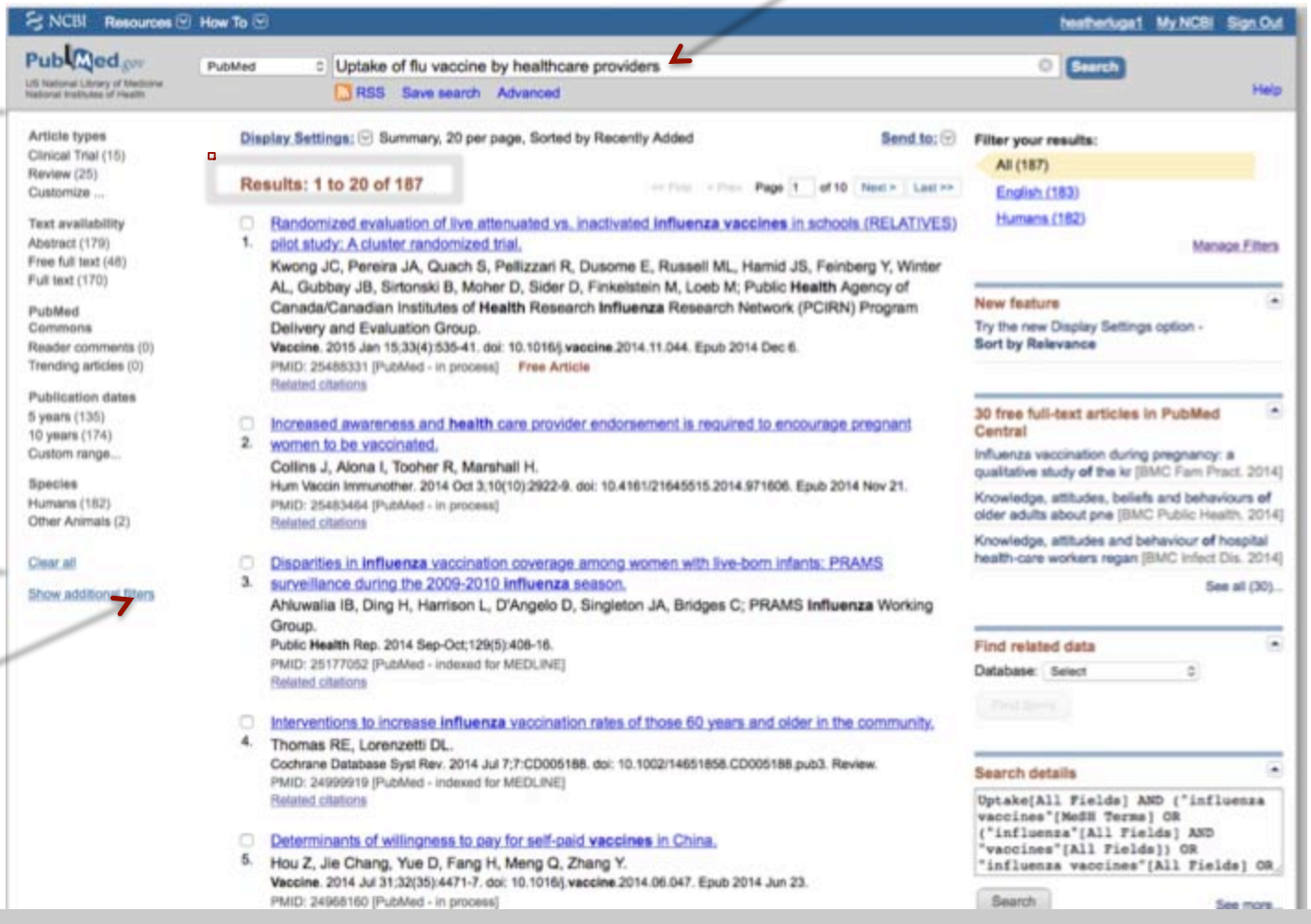
From the Internet (Remote Access also)

Open PubMed using the UChicago-specific web address: http://www.lib.uchicago.edu/h/pubmed.

- Search PubMed.
- Click on the Find It! icon in the upper right of the Abstract view; a new window or tab will open.
- Click on the link in the upper left box labeled "Find It Online." A new tab or window opens to the article.

PubMed- Basic Search

- Topic: Uptake of flu vaccine by healthcare providers

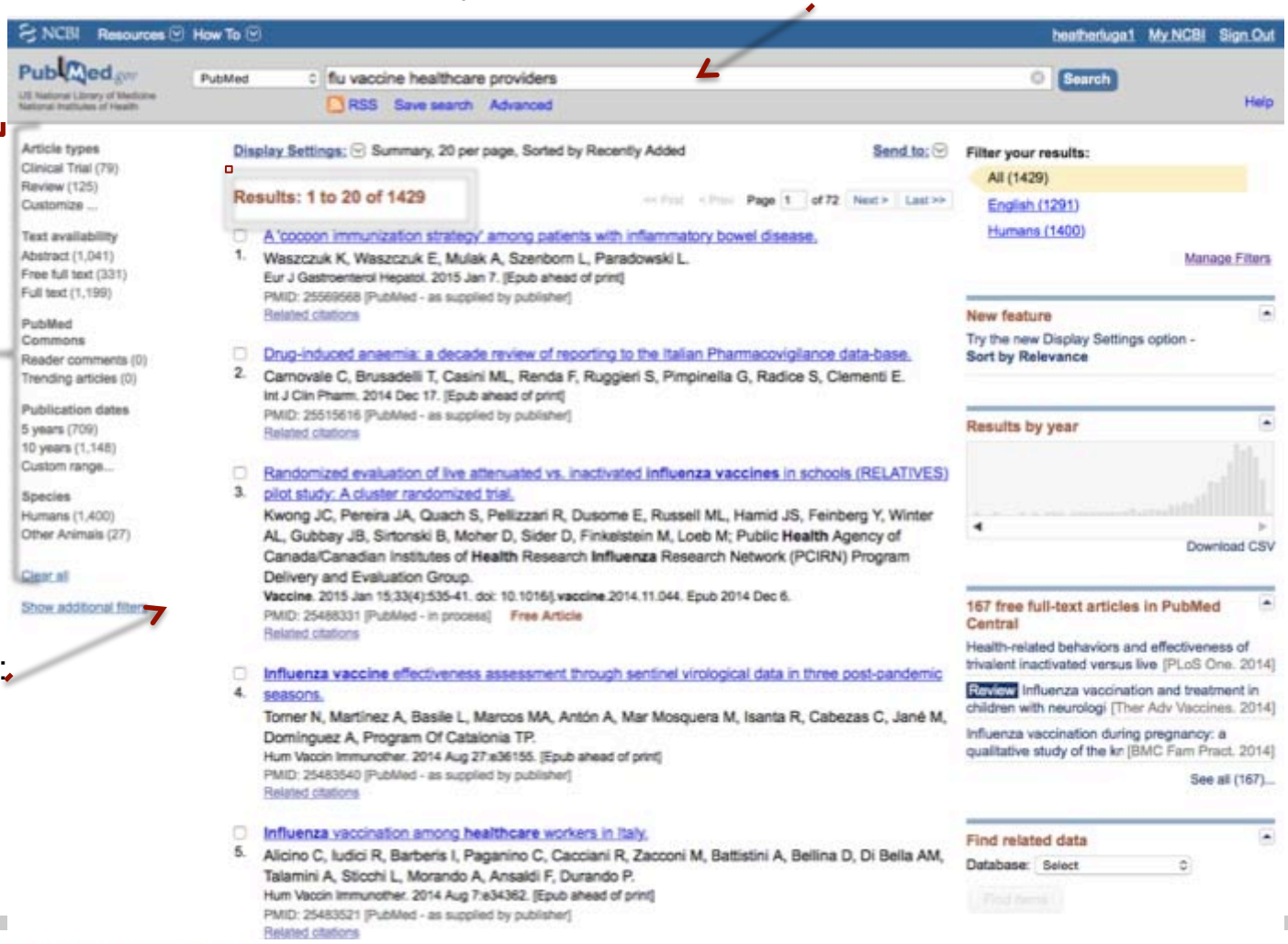


Optional Filters

More Filters:
-sex
-language
-subjects
-ages
-species

PubMed- Basic Search, same search different key words

- Topic: Uptake of flu vaccine by healthcare providers

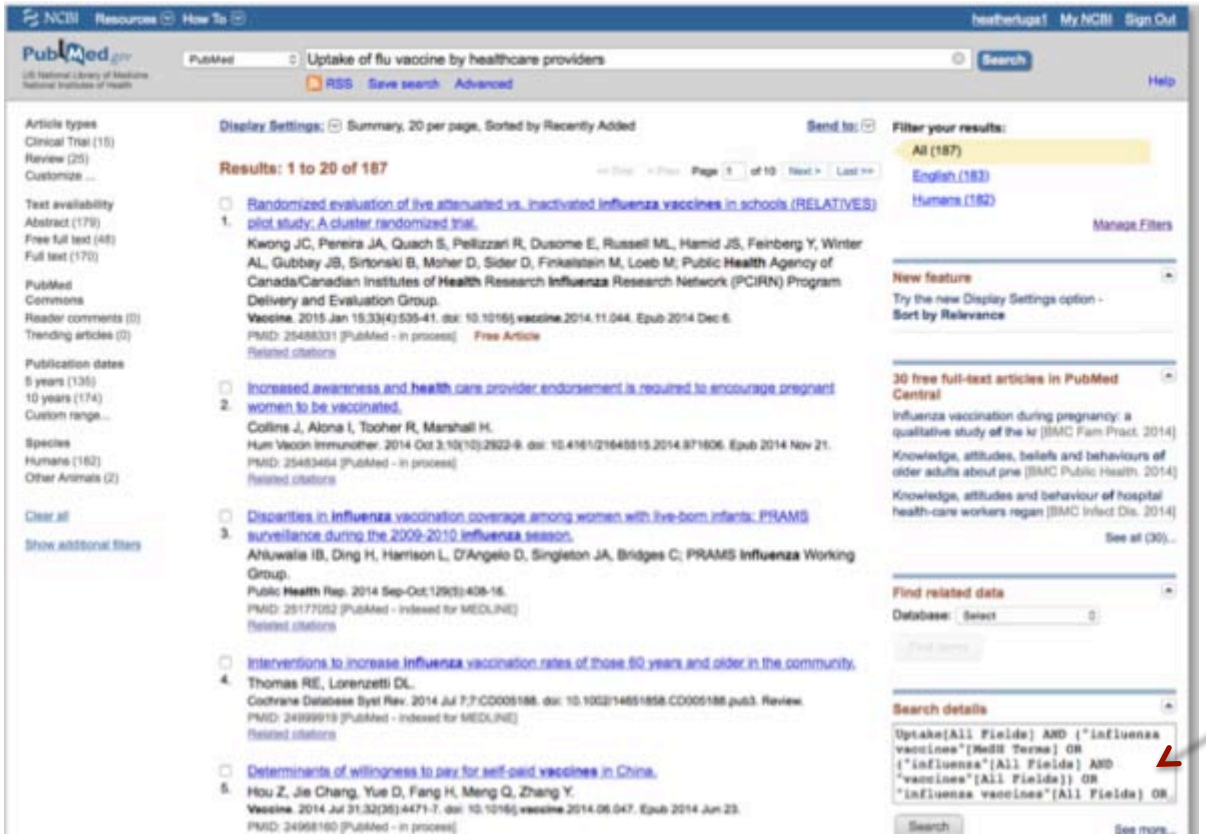


Optional Filters

More Filters:
-sex
-language
-subjects
-ages
-species

PubMed- Basic Search

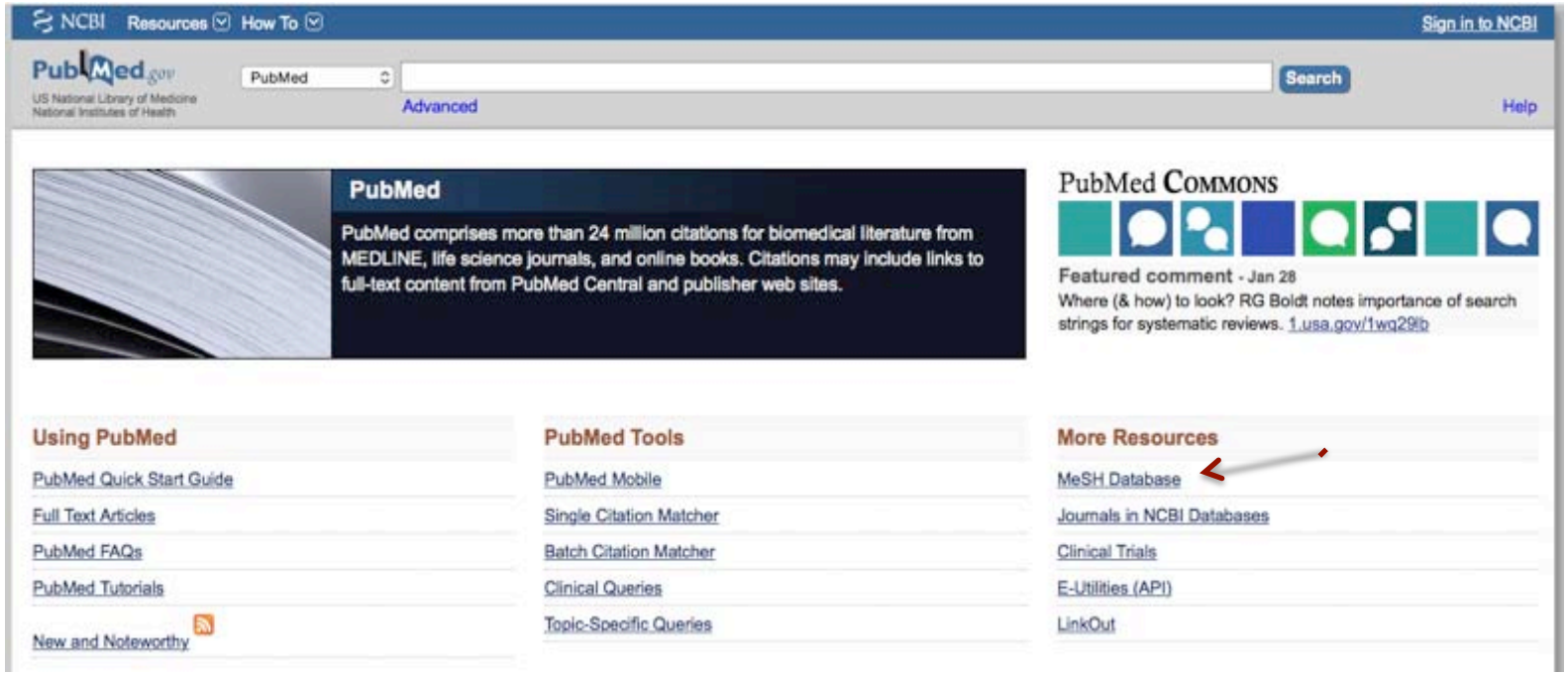
- The same search with different key words provided 187 vs. 1,429 articles
- Can I feel confident I've captured the body of literature on this topic?



MeSH Terms

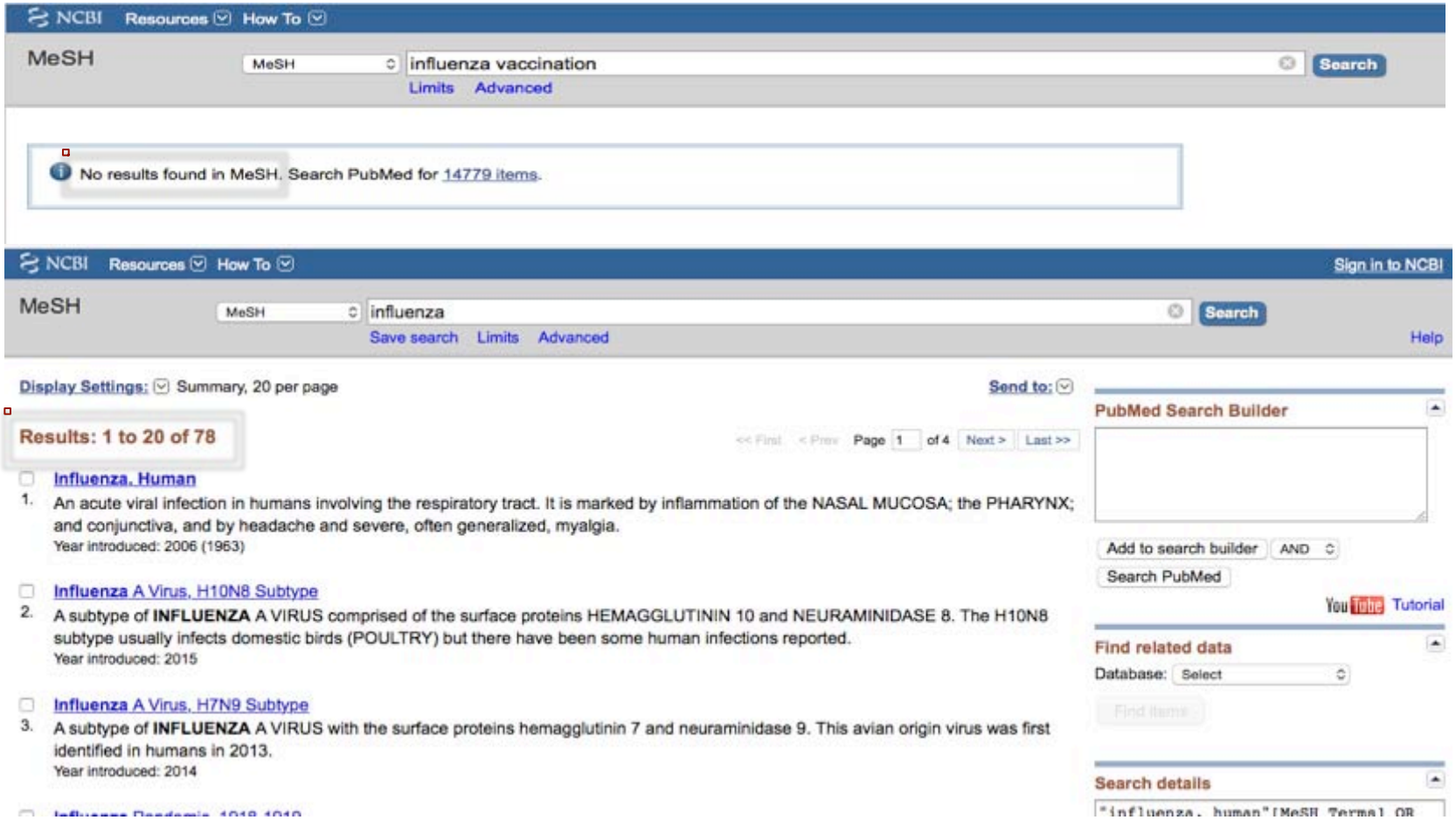
PubMed- MeSH Terms

- MeSH: Medical Subject Headings
  - Indexed, standardized vocabulary used by National Library of Medicine to categorize articles
- http://www-ncbi-nlm-nih-gov.proxy.uchicago.edu/pubmed



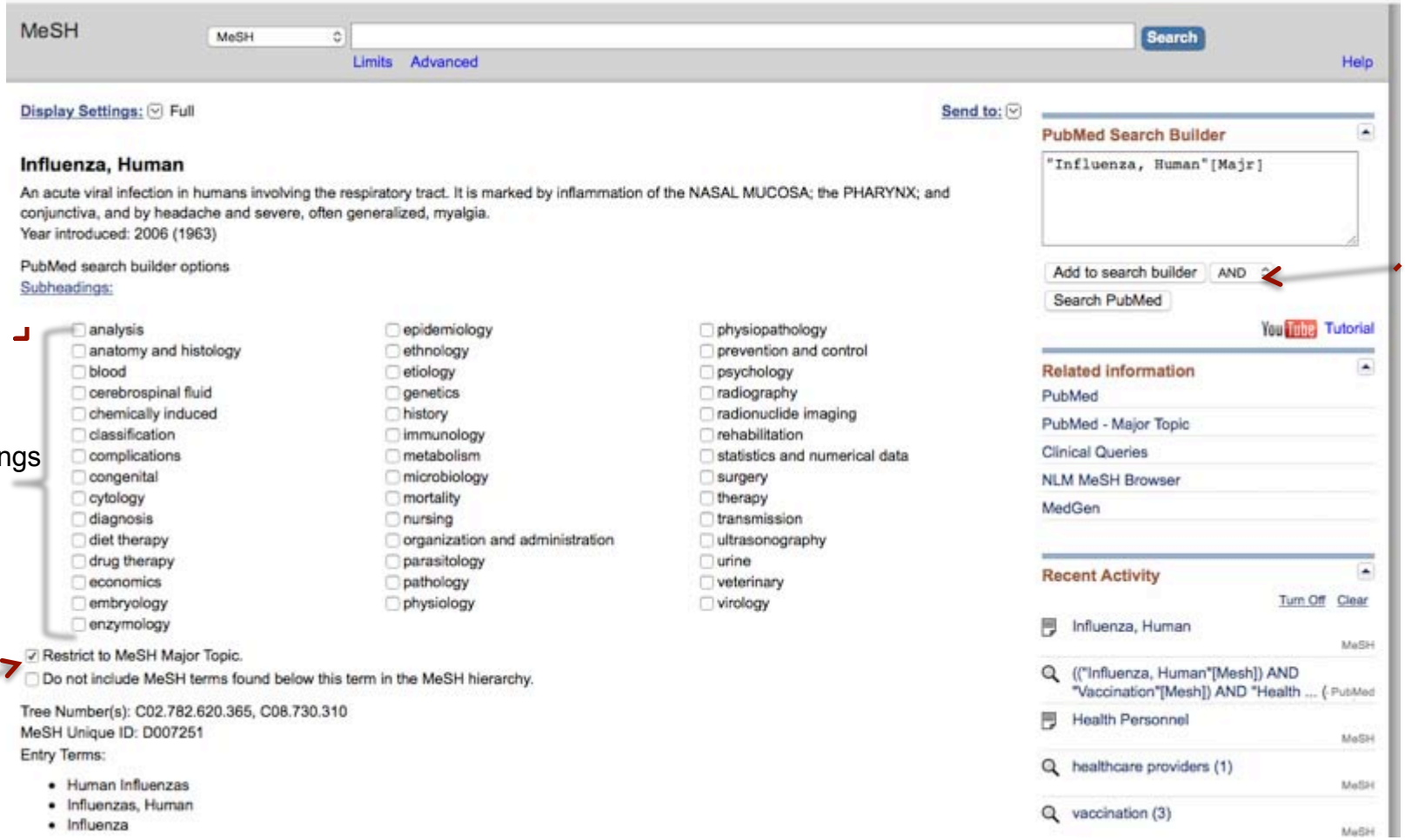
PubMed- MeSH Terms

- Need to get to the top of the "hierarchy"



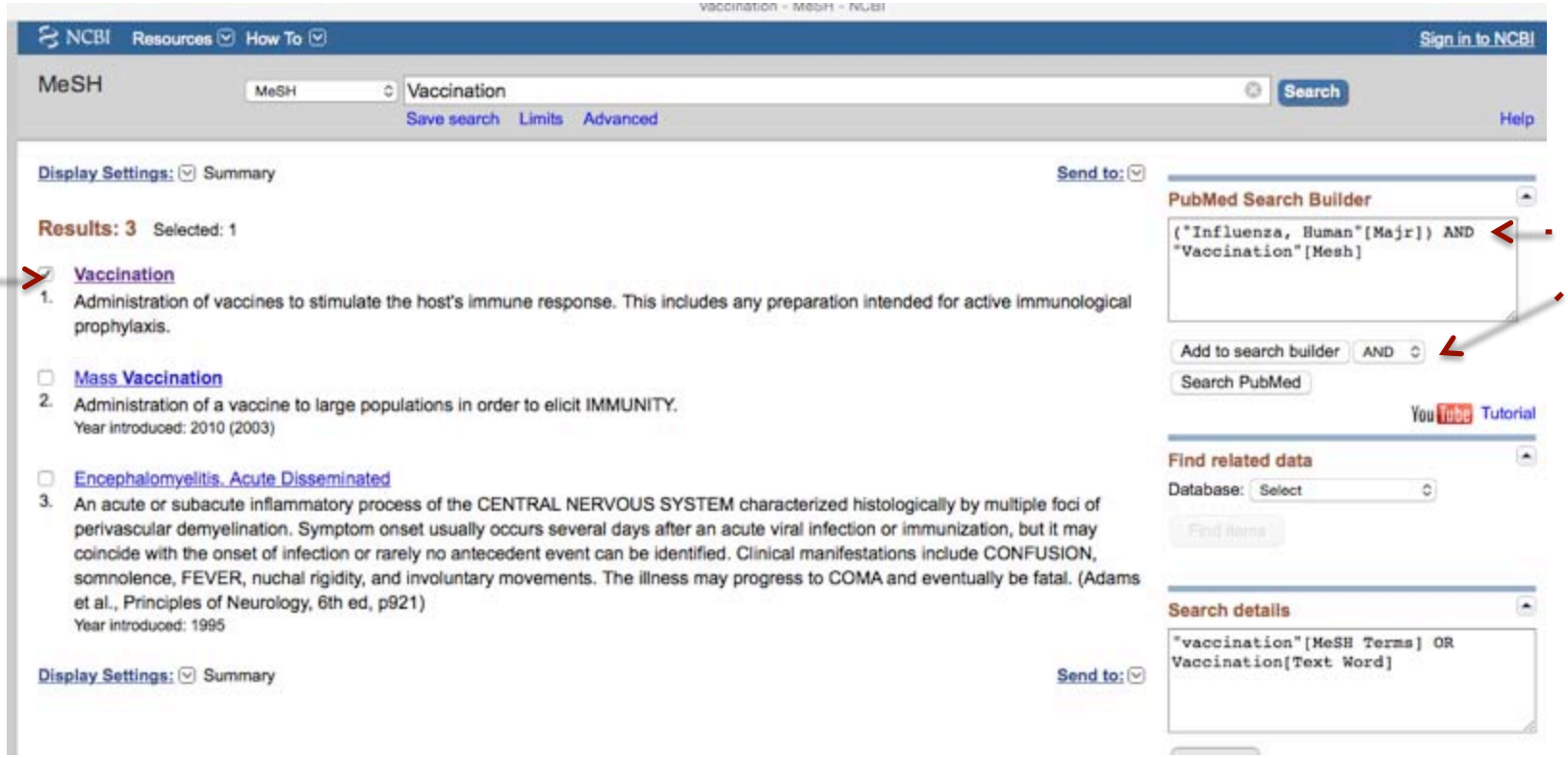
PubMed- MeSH Terms

- No MeSH Major Topic “Influenza Vaccination”. Closest found is “Influenza, Human”



PubMed- MeSH Terms

- No MeSH Major Topic “Influenza Vaccination”. Closest found is “Influenza, Human”
- Now need Vaccination



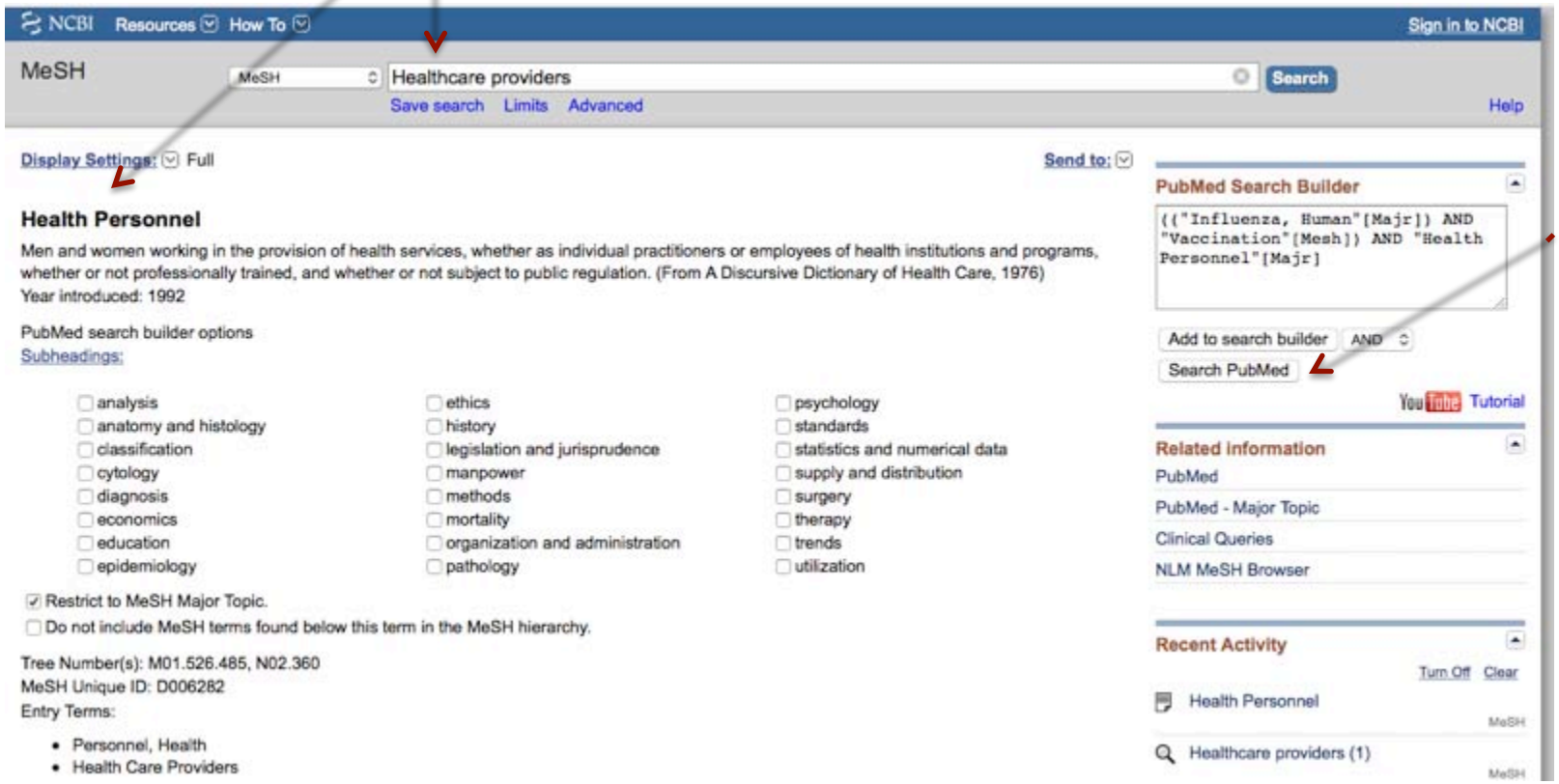
Another way to limit to MeSH Major Heading

AND
OR
NOT

PubMed- MeSH Terms

- Now we have Influenza, Vaccination, we need to limit it to healthcare providers

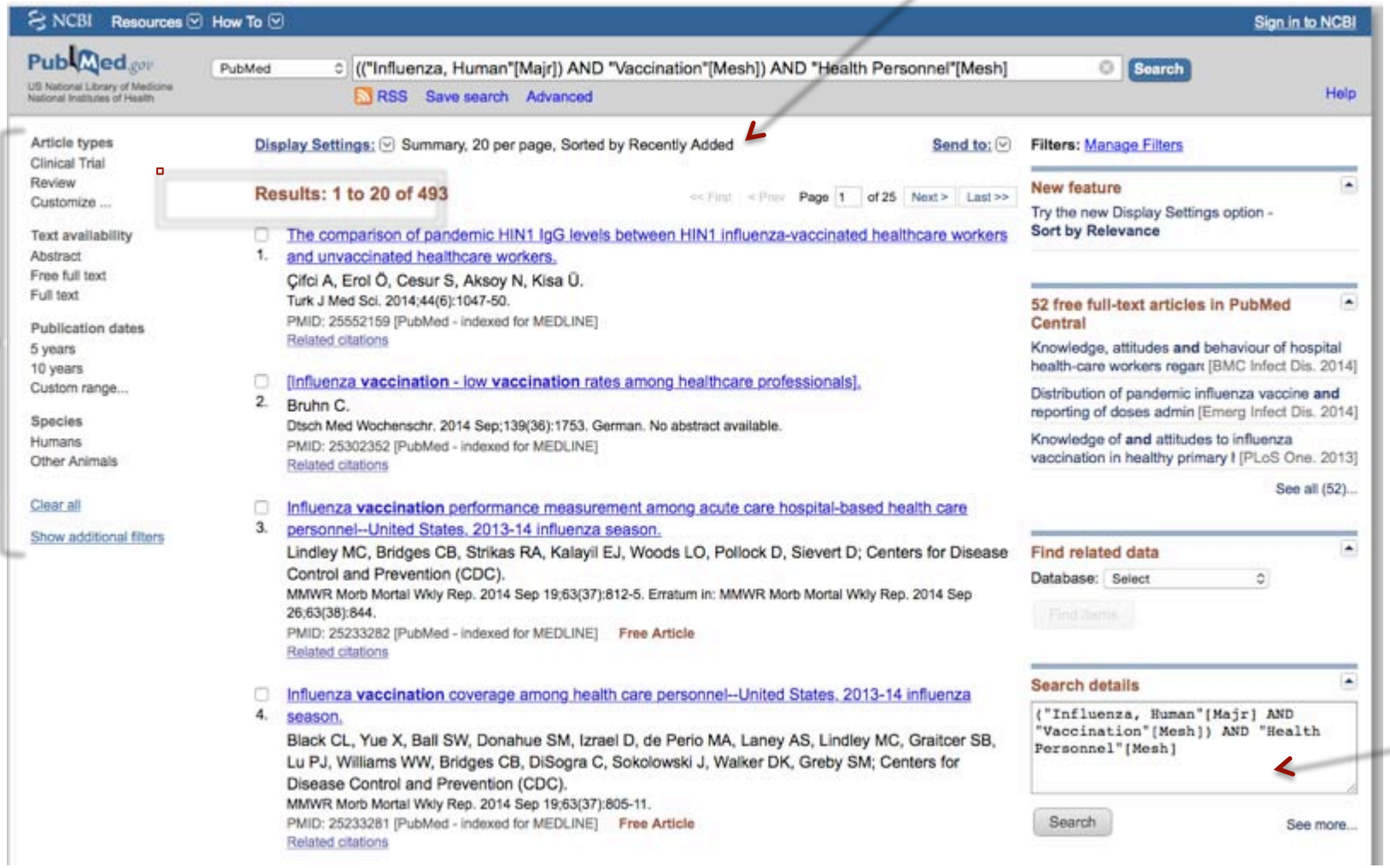
Healthcare providers was close enough the MeSH Major Heading popped up- Health Personnel



Our search build is done.

PubMed- MeSH Terms

Sort by:
Recently Added
Pub Date
First Author
Last Author
Journal
Title
Relevance



Optional Filters Still available

MeSH Terms

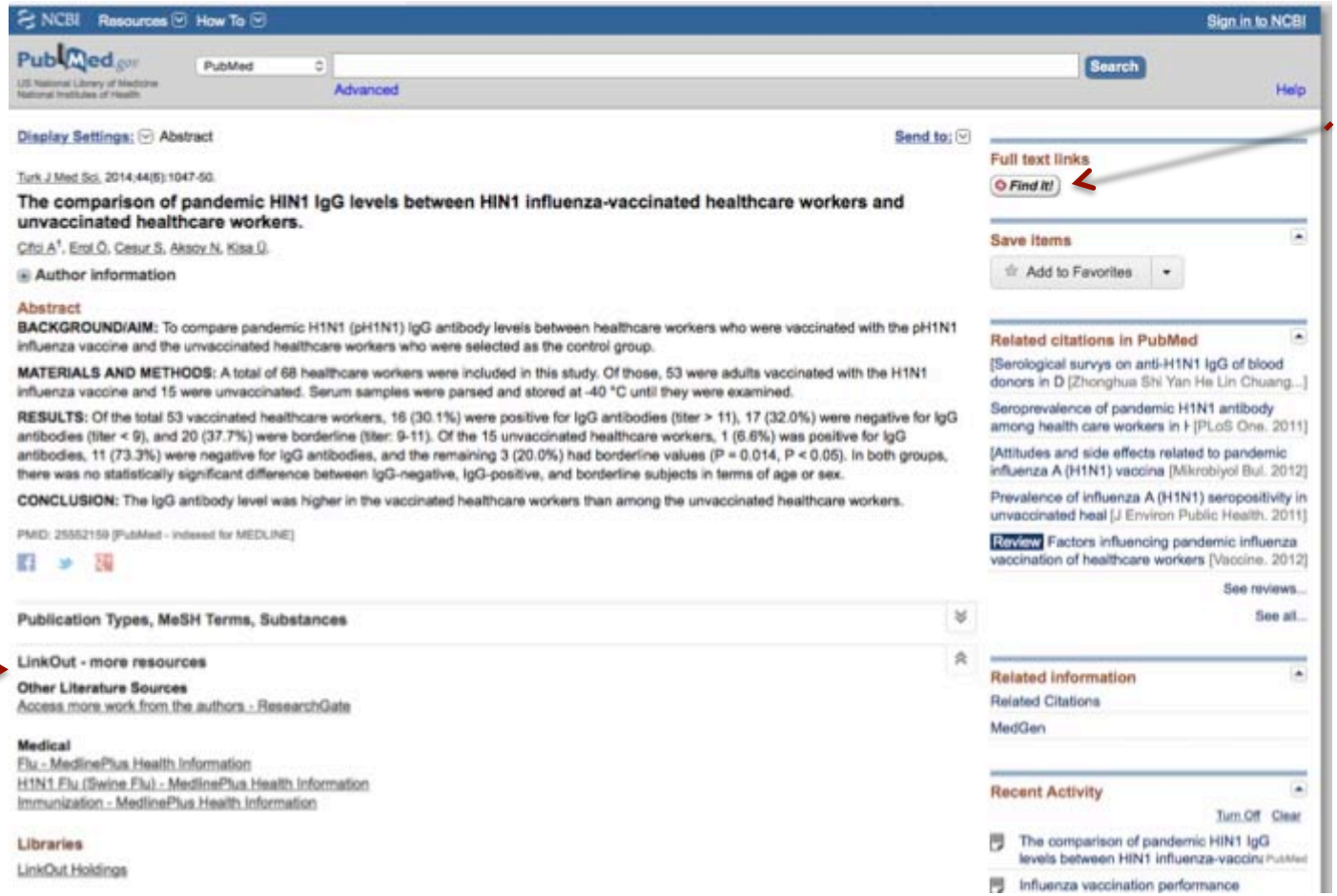
PubMed- Review

- Basic search with different key words provided 187 vs. 1,429 articles
- MeSH term search produced 493 articles we know were classified in a standardized way to meet our search criteria
- Now can I feel confident I've captured the body of literature on this topic?

Things to keep in mind:

- Judgement comes into play (the decision to choose "Influenza" and "Vaccination" over "Influenza- Immunology")
- You may have to do some trial and error to get what you are looking for
- Keep the hierarchical structure of MeSH terms in mind when searching

PubMed- Retrieve the full article



Takes you through library to access

Takes you through that journal to access.

ONLY works if you're using the UChicago proxy for PubMed

Assessing the value of an article

Assessing the value of an article-
Levels of Evidence for a Primary Research Question

1. What type of study is the article?
   - Cochrane Review, Systematic Review, Review of the literature
   - Meta-analysis
   - Randomized Controlled Trial, Case-Control Study, Cohort Study
   - Nationally representative, Multi-site, single site

- **Level 1.** Randomized controlled trials—includes quasi-randomized processes such as alternate allocation.
- **Level 2.** Non-randomized controlled trial—a prospective (pre-planned) study, with predetermined eligibility criteria and outcome measures.
- **Level 3**. Observational studies with controls—includes retrospective, interrupted time series (a change in trend attributable to the intervention), case-control studies, cohort studies with controls, and health services research that includes adjustment for likely confounding variables.
- **Level 4.** Observational studies without controls (e.g., cohort studies without controls, case series without controls, and case studies without controls)

*Note: This is different from the levels of evidence for Evidence-Based Medicine. They are however related.
Here, we are looking at the value of a research article. EBM is looking at the collaborative value of a body of evidence/research.

(Source: the United States Department of Health and Human services http://www.ahrq.gov/)

Assessing the value of an article- The Basics

- Was the study funded? If so, by whom?
  - Disclosed on the first page usually
- When was the article published?
  - Is this the latest data? Has it been replicated? Become a seminal paper? Disproven?
- Look at the list of references and footnotes to find evidence this has been well researched
- Did the article go through a peer-review process?
  - Most journals require this but not some of the lower-tier ones
- Are the findings consistent with existing knowledge?
  - This is an obviously weary criteria. We once knew the world was flat. That said, if the conclusions starkly contrast existing evidence, the study will need excellent evidence and the ability to be replicated.

Remember, one study is never the final word.

Assessing the value of an article- Journal Impact Factor

7. What journal was the article published in?

- Respected across academic disciplines? (Nature, Science, JAMA)
- Respected in your specialty? (ICHE)
- Journal "Impact Factor": used to evaluate, rank, and compare journals
  - Measure of the frequency with which the "average article" in a journal has been cited in a particular year or period
  - Varies between disciplines and subjects
  - More info here: http://wokinfo.com/essays/impact-factor/

The **impact factor** of a journal is the number of times an average article in the journal is cited per year, averaged over the previous two years as follows:-

A = the number of times articles published in 2004-5 were cited in indexed journals during 2006

B = the number of articles, reviews, proceedings or notes published in 2004-5

2006 journal impact factor = A/B (*Publicationslist.org*)

- Many criticisms against this ranking approach but you will most likely hear it referenced.

Assessing the value of an article- Standardization Guides

- Conducting a study (whether it be research or QI) takes a lot of work. You can't share all of the information you have nor should you. Page limits often dictate this.
- It becomes difficult to compare articles that provide different information.
  - Article 1: Clearly articulated description of inclusion/exclusion criteria for participants
  - Article 2: Vague description of participants
  - Can we really compare these?
- A number of experts have convened to create guidelines that dictate what information is VITAL and what information SHOULD be shared for different study types
- This allows for the comparison of articles
- It also allows you as a consumer of the literature to assess the quality of an article by using these guidelines

Standardization Guides- Some examples

- Quality Improvement Articles – SQUIRE (*Standards for Quality Improvement Reporting Excellence*). *http://squire-statement.org/guidelines*

- Observational studies - STROBE checklist (*Strengthening the Reporting of Observational Studies in Epidemiology).* http://www.who.int/bulletin/volumes/85/11/07-045120.pdf

- Randomized Controlled Trials – CONSORT *(Consolidated Standards of Reporting Trials). http://www.consort-statement.org/consort-2010*

Standardization Guides- Some examples

- Quality Improvement Articles – SQUIRE (*Standards for Quality Improvement Reporting Excellence*). *http://squire-statement.org/guidelines*

- Observational studies - STROBE checklist (*Strengthening the Reporting of Observational Studies in Epidemiology).* http://www.who.int/bulletin/volumes/85/11/07-045120.pdf

- Randomized Controlled Trials – CONSORT *(Consolidated Standards of Reporting Trials). http://www.consort-statement.org/consort-2010*

Presenting an article at Journal Club

Journal Club - The Purpose

- Promotes critical thinking skills
- Provides a forum for dissemination of scientific information
- Allows a diverse group to discuss topics together at a scholarly level
- Promotes insight into a specific healthcare issue
- Generates familiarity with basic study design and statistical tests
- Allows for critical thinking of how a healthcare issue is currently being addressed here at UCM and areas to improve

Journal Club - Presenting

- Address all of the things that help assess the quality/validity/strength of an article
  - Use an appropriate Standardization Guideline/checklist to help you choose which parts of the article are most important to focus on
- It's ok to not fully understand a methodological approach or statistical test:
  - First, look it up and see if you can get an idea of what it entails
  - More importantly, bring it up at Journal Club so we can discuss as a group
- Many first-time presenters take the role of "critiquer"- focusing on all of the things that can be improved or are bad about an article/study. This is helpful as limitations should always be considered
  - However, if it's a terrible article, why are we talking about it? There has to be some VALUE that made you feel this should be discussed at Journal Club
  - Does it contribute new knowledge?
  - Was a novel approach used?

Journal Club - Presenting

- Summarize the article (JC Handout Template)
  - Study objectives: What did the authors set out to do/discover/prove?
  - Background:
    - What does the current knowledge about this topic say?
    - How important is the issue being addressed?
    - Why is it important?
    - Is this an issue here at UCM?
  - Funding Sources:
    - Are there any ‘red flags’ we should take into account prior to discussing this article?

Journal Club - Presenting

- Summarize the article (JC Handout Template)
  - Study Design: What type of study was this?
    - Case-control, cross-sectional (survey), Quality Improvement using PDSA
    - Who were the participants?
    - Why are the participants the ideal people to participate in this study, given the objective?
  - Methods
    - What did the authors do?
    - How did they do it?
    - Were there any novel approaches?
    - Any weaknesses you noticed?

Journal Club - Presenting

- Summarize the article (JC Handout Template)
  - Analysis: How did the authors use the data they collected?
    - What were the outcomes of the study?
    - Were there secondary outcomes?
    - Any process measures?
  - Results: Was the study objective met?
    - How was success/failure determined?
    - Was it statistically significant?
    - Was it clinically significant?
  - Discussion and Conclusions
    - What is the take-away from this study?
    - How does this study contribute to the body of knowledge on this issue?
    - Are there implications that can come from this study for UCM?

Journal Club - Presenting

- Come prepared with at least 3 discussion questions
- This should be a time for conversation in a safe, scholarly setting. So remember,
  - Provide a background for your colleagues as not everyone will be familiar with the topic chosen
  - All reasonable conclusions are welcome
  - Remain open to opinions of others
  - It's OK to ask questions!

Finally, it is nearly impossible to conduct the IDEAL study. It requires resources (money, time, participants, investigators) and real-world ethically acceptable situations (you can't randomize someone to not get a treatment we know works). So, make note of the limitations, bring them to the table, but keep in mind that you chose an article that adds VALUE to our body of knowledge. So tell us what that is.

Journal Club - 2015 Tentative Schedule

http://clinicaleffectiveness.uchicago.edu

January 29, W-300	Heather Limper, Basics of Scholarship
February 19	Infection Control
March 26	Quality Performance Improvement
April 30	Quality Reporting, Evaluation, and Education
May 28	Vinny Arora, *Choosing Wisely Competition*
June 18	Risk Management & Patient Safety
July 23	Marla Robinson, *Project Walk*
August 20	Quality Analytics
September 24	Patient Engagement & Experience
October 15	Healthcare Delivery Science
November 19	Surgical Quality
December 17	TBA

Upcoming Scholarship Events

http://clinicaleffectiveness.uchicago.edu

- **This year's 10th Annual Quality & Safety Symposium will be held on May 5, 2015 in the DCAM 4th Floor Atrium.**

  Posters are due April 15.

- **Choosing Wisely Challenge at University of Chicago Medicine**

  Bright Ideas due April 1, 2015

- **UCM Innovations Grant (innovative solutions to operational problems)**

  Proposals due April 1, 2015