Yale Harvey Cushing/ John Hay Whitney **MEDICAL LIBRARY**

How to conduct a literature review

https://bit.ly/2025-07-31-lit-reviews

Hello

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Lit review skills

- Recognize (as a reader) different types of literature reviews
- Choose (as a writer) an appropriate type of literature review
- Estimate how long an evidence synthesis project might take
- Outline the introduction of a paper
- Choose bibliographic databases appropriate for your project based on scope, features, and price
- Translate an information need into a "concept table"
- Use Boolean operators and database syntax to retrieve relevant documents
- Evaluate search results and iterate to improve sensitivity or specificity
- Export search results and manage them in Zotero
- Deal with paywalls
- Find more papers via "snowballing"
- Access additional free resources:
  - JBI Critical Appraisal tools
  - Equator Network database of reporting guidelines
  - Campbell Collaboration training on systematic reviews

Lit review skills

1

- Recognize (as a reader) different types of literature reviews
- Choose (as a writer) an appropriate type of literature review
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2

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- Export search results and manage them in Zotero
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5

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Expectations

You all bring different knowledge, experience, and perspectives. So, please share your comments, questions, and suggestions.

During the lecture, you can contribute questions in this shared document.

Part 1: planning

- Recognize (as a reader) different types of literature reviews
- Choose (as a writer) an appropriate type of literature review
- Estimate how long an evidence synthesis project might take
- Outline the introduction of a paper

“Let’s write a lit review” can mean a lot of different things!

- Standalone document, or the introduction to a larger document?
- How long?
- How rigorous?
- Comprehensive or selective?
- How transparent / reproducible?
- Goal?
- Audience?
- How thoughtful? Did the author just collate existing findings, or did they analyze/evaluate them?

Let's start with three types

Lit review in the introduction section

- Help your readers prepare to understand your work
- Persuade your readers that you know what you're talking about

Narrative lit review

- A very well-supported commentary essay
- Often useful for readers starting to explore the topic

Evidence synthesis lit reviews

- Many types, depending on the nature of the research question: systematic, scoping, rapid, integrative, realist….

If you're interested in evidence synthesis:

Amog, K., Pham, B., Courvoisier, M., Mak, M., Booth, A., Godfrey, C., Hwee, J., Straus, S. E., & Tricco, A. C. (2022). The Web-based "Right Review" tool asks reviewers simple questions to suggest methods from 41 Knowledge Synthesis methods. Journal of Clinical Epidemiology, S0895-4356(22)00065-8. https://doi.org/10.1016/j.jclinepi.2022.03.004

Campbell, F., Tricco, A. C., Munn, Z., Pollock, D., Saran, A., Sutton, A., White, H., & Khalil, H. (2023). Mapping reviews, scoping reviews, and evidence and gap maps (EGMs): The same but different— the "Big Picture" review family. Systematic Reviews, 12(1), 45. https://doi.org/10.1186/s13643-023-02178-5

Grant, M. J., & Booth, A. (2009). A typology of reviews: An analysis of 14 review types and associated methodologies. Health Information & Libraries Journal, 26(2), 91–108. https://doi.org/10.1111/j.1471-1842.2009.00848.x

Greenhalgh, T., Thorne, S., & Malterud, K. (2018). Time to challenge the spurious hierarchy of systematic over narrative reviews? European Journal of Clinical Investigation, 48(6). https://doi.org/10.1111/eci.12931

JBI Manual for Evidence Synthesis—JBI Manual for Evidence Synthesis—JBI GLOBAL WIKI. (n.d.). Retrieved May 5, 2021, from https://doi.org/10.46658/JBIMES-20-01

Munn, Z., Peters, M. D. J., Stern, C., Tufanaru, C., McArthur, A., & Aromataris, E. (2018). Systematic review or scoping review? Guidance for authors when choosing between a systematic or scoping review approach. BMC Medical Research Methodology, 18(1), 143. https://doi.org/10.1186/s12874-018-0611-x

Page, M. J., Moher, D., Bossuyt, P. M., Boutron, I., Hoffmann, T. C., Mulrow, C. D., Shamseer, L., Tetzlaff, J. M., Akl, E. A., Brennan, S. E., Chou, R., Glanville, J., Grimshaw, J. M., Hróbjartsson, A., Lalu, M. M., Li, T., Loder, E. W., Mayo-Wilson, E., McDonald, S., … McKenzie, J. E. (2021). PRISMA 2020 explanation and elaboration: Updated guidance and exemplars for reporting systematic reviews. BMJ, 372, n160. https://doi.org/10.1136/bmj.n160

Sutton, A., Clowes, M., Preston, L., & Booth, A. (2019). Meeting the review family: Exploring review types and associated information retrieval requirements. Health Information & Libraries Journal, 36(3), 202–222. https://doi.org/10.1111/hir.12276

Evidence synthesis caveats

- Lots of journals publish bad ES papers. Even "good journals"! So, don't write an ES paper by emulating a published ES paper. Instead, plan your project based on ES methods guidelines and reporting guidelines.
- ES projects take *so much time*.
  https://predicter.github.io/
  https://bit.ly/screeningworkload
- Always write a protocol (even if you don't plan to publish or register it). It's great for project management.

Introduction section lit reviews

An exercise to do on your own (later)

1. Find a paper you like -- maybe a paper you wish you'd written, or a paper by your mentor, or a paper that cites one of your papers
2. Read the introduction section carefully. Probably, each paragraph introduces a different aspect of the topic. Make a list of the different aspects. Are any important aspects missing?
3. Within each paragraph, how many citations are given? Are they mentioned? Analyzed? Critiqued? Are any citations that you would expect missing? Think about some newly published papers on that topic; where would you add them?

Some typical paragraph topics in an intro lit review

- How important is this problem? How many people does it affect? How severely does it affect them? How much money does it cost?
- What populations are affected by this problem? Is there a health equity issue?
- What datasets/instruments/methods have other scholars used to study this problem?
- What is known about the problem in this specific location/setting?
- What theoretical frameworks have been used to analyze the problem?

Questions

You can ask questions live, or you can put questions into our shared document for us to discuss at the end.

Part 2: databases

- Choose bibliographic databases appropriate for your project based on scope, features, and price

Factors to consider when choosing DBs

Scope

Disciplinary focus

Geographic focus

Document types

Date coverage (inception and update schedule)

Features

Export of structured citations

Citation networks

Full text searching

Subject indexing

Multilingual searching

Price and paywalls

Does your institution subscribe?

Access via a professional society membership, or in return for peer review service?

Georgia is a Research4Life Group B country; many institutions are already registered.

Some great resources are free!

Some of my favorite free databases

PubMed -- biomedical journal articles; inclusion depends on journal/funder

Lens -- great visualizations of results sets

OpenAlex -- sort by citation *percentile*

EuropePMC -- great coverage of preprints

Global Index Medicus -- but for recent papers, you may need to search the regional component databases separately. There's an excellent external guide

LILACS -- health information from Latin America and the Caribbean

Google Scholar -- relies heavily on relevance ranking

Harvard Kennedy School Think Tank Search -- for grey lit

Part 3: searching

- Translate an information need into a “concept table”
- Use Boolean operators and database syntax to retrieve relevant documents
- Evaluate search results and iterate to improve sensitivity or specificity

Concept table

Substance use disorder	Medication-assisted treatment	Telemedicine
Substance use OR opioid use OR illicit drugs OR addiction OR PWUD OR PWID OR….	Medication-assisted treatment OR medication-assisted therapy OR buprenorphine OR suboxone OR….	Telemedicine OR telehealth OR virtual OR mhealth OR M-health….

Synonyms? (Sometimes older, pejorative terminology)

Acronyms?

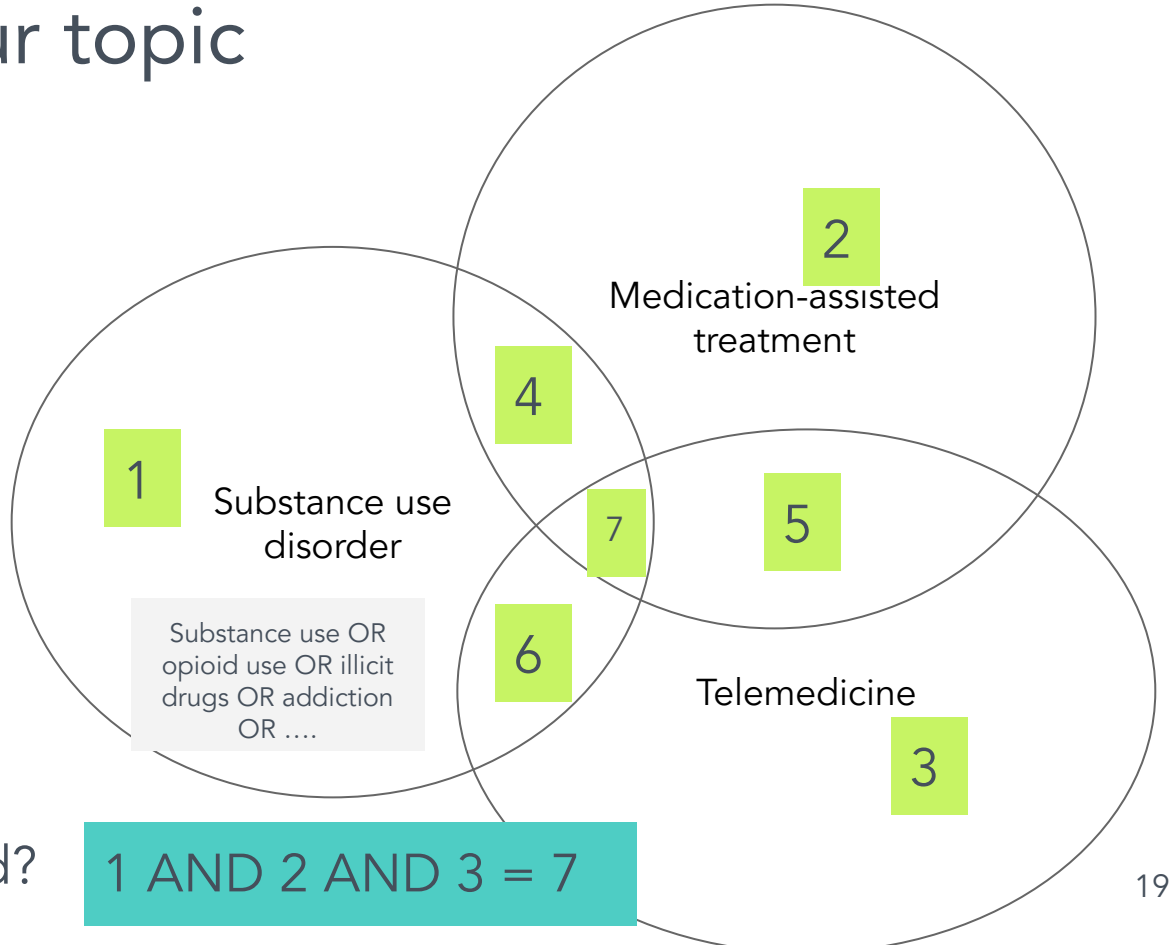
Different levels of granularity?

Read documents that address *all* the aspects of your topic

This Venn diagram has three concepts, but your query might have more or fewer concepts.

Each *concept* is operationalized by multiple *terms* connected by OR.

Which set will you read?



1 AND 2 AND 3 = 7

What if set 7 is too big?

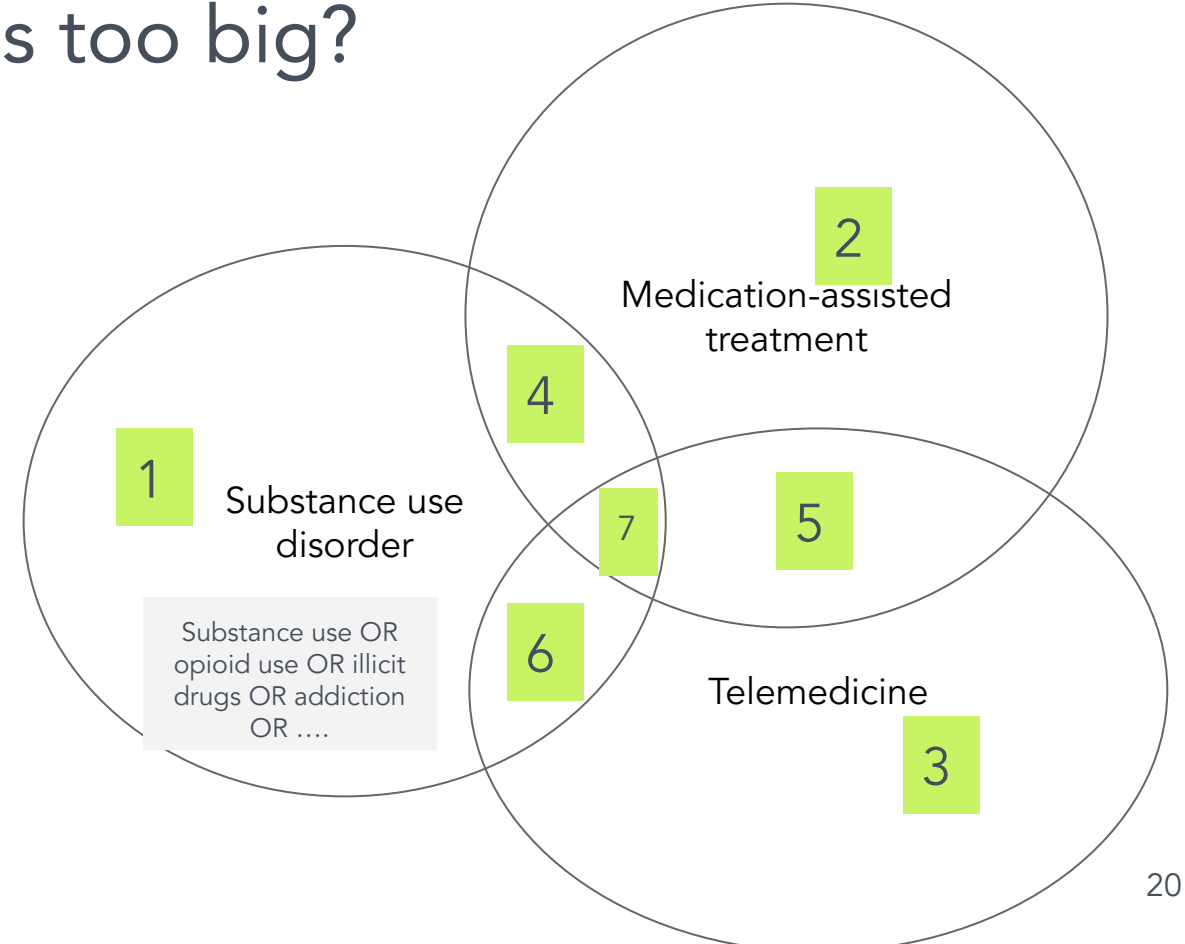
You could filter set 7: just show me reviews, just show me papers by authors based in country X, just show me papers from the last five years.

You could change sets 1, 2, or 3 to be smaller and more specific, by looking for those words *only* in the title, not the abstract.

You could change sets 1, 2, or 3 to be narrower: e.g., not SUD in general, but OUD in particular.

You could add another circle to your Venn diagram: these three concepts PLUS qualitative methods.

You could look at sets 1, 2, and 3 and consider removing some of the OR statements.



What if set 7 is too small?

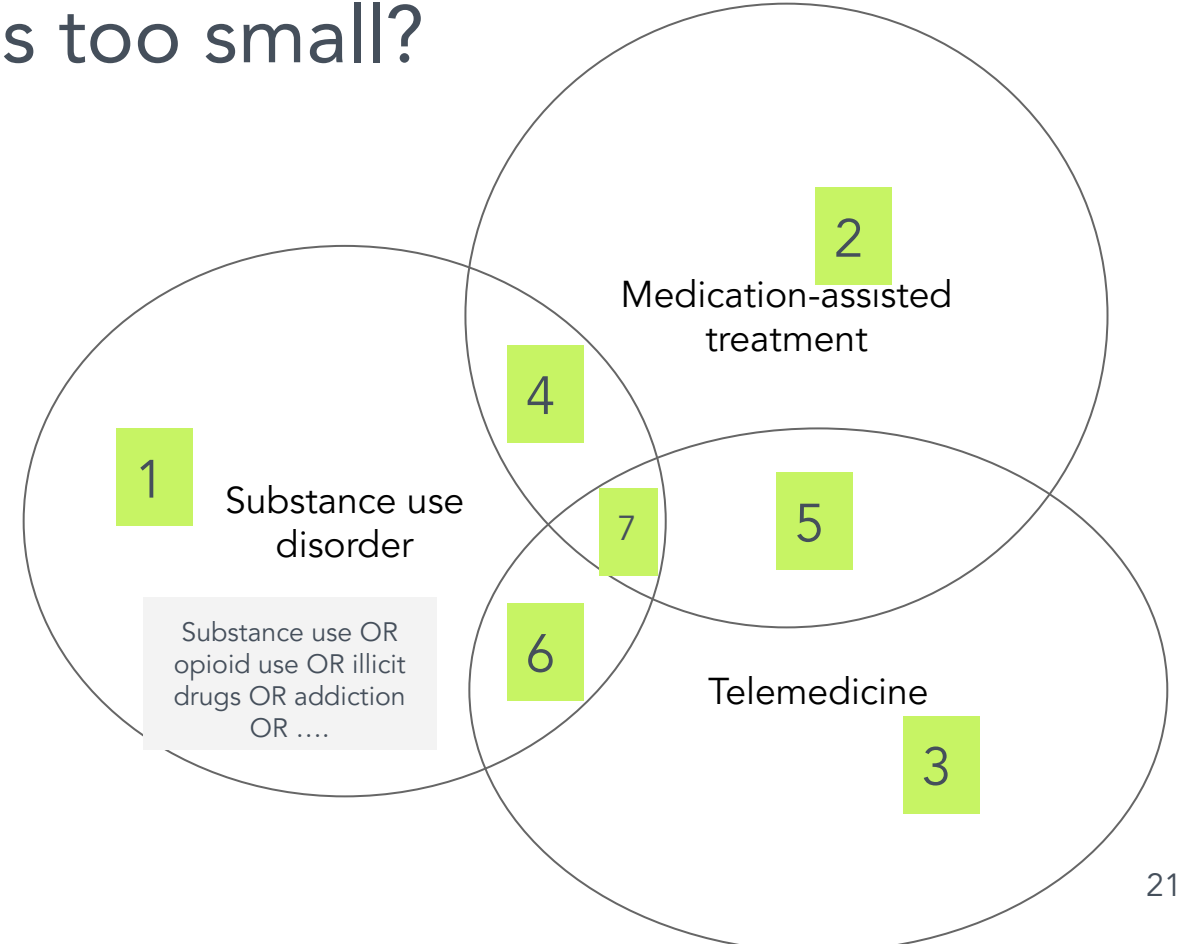
You could change sets 1, 2, or 3 to be larger and more sensitive, by adding additional words to the query.

You could skip one of the circles in your Venn diagram; look at sets 4, 5, or 6 in addition to set 7.

You could start with the papers in set 7 and use snowballing techniques to find more papers (and more search terms).

You could switch to a bibliographic database that is bigger, includes different journals, or allows full text searching.

You could change sets 1, 2, or 3 to be larger and less specific, by looking for those words in the full text as well as the title/abstract.

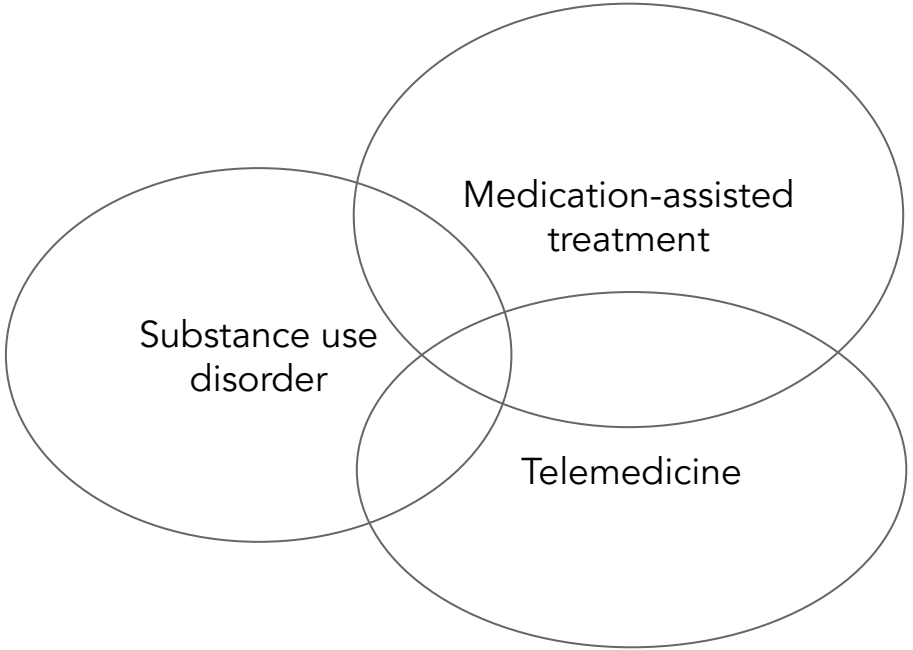


Boolean operators

Connect words about the same concept with OR.

Connect different concepts with AND.

Use parentheses or line references to control the order of operations.



Show works where:

1 fulltext includes "("substance use" OR "opioid use" OR PWUD) AND ("medication-assisted treatment" OR MAT OR buprenorphine) AND (telehealth OR telemedicine)"

Database syntax tips

Usually, put phrases into “quotation marks.”

Some databases automatically “stem” search terms to search for plural forms and related words. In databases that don’t, you might want to truncate terms with an asterisk: treatment*

PubMed’s “automated term mapping” feature can work really well, or poorly; look at Advanced → History → Search Details to check.

Think about which fields you want to search. Usually I search title/abstract/keywords; sometimes I search full text; sometimes I just search in the article title.

PubMed’s [All Fields] search = all the fields in a PubMed record, including author institution and journal name; it doesn’t mean full text of the article.

Should you filter for free full text in bibliographic databases?

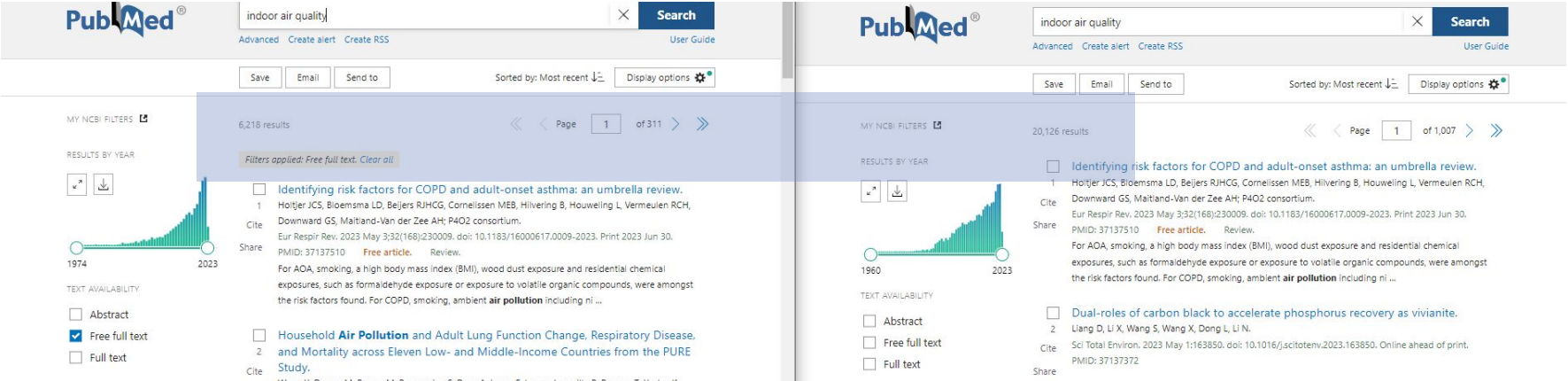
In PubMed: maybe….

PubMed's Free Full Text filter relies on two data sources:

- Publishers telling the National Library of Medicine about free full text availability
- NIH public access policy compliance

A paper might be free to read via other means, but PubMed will never know.

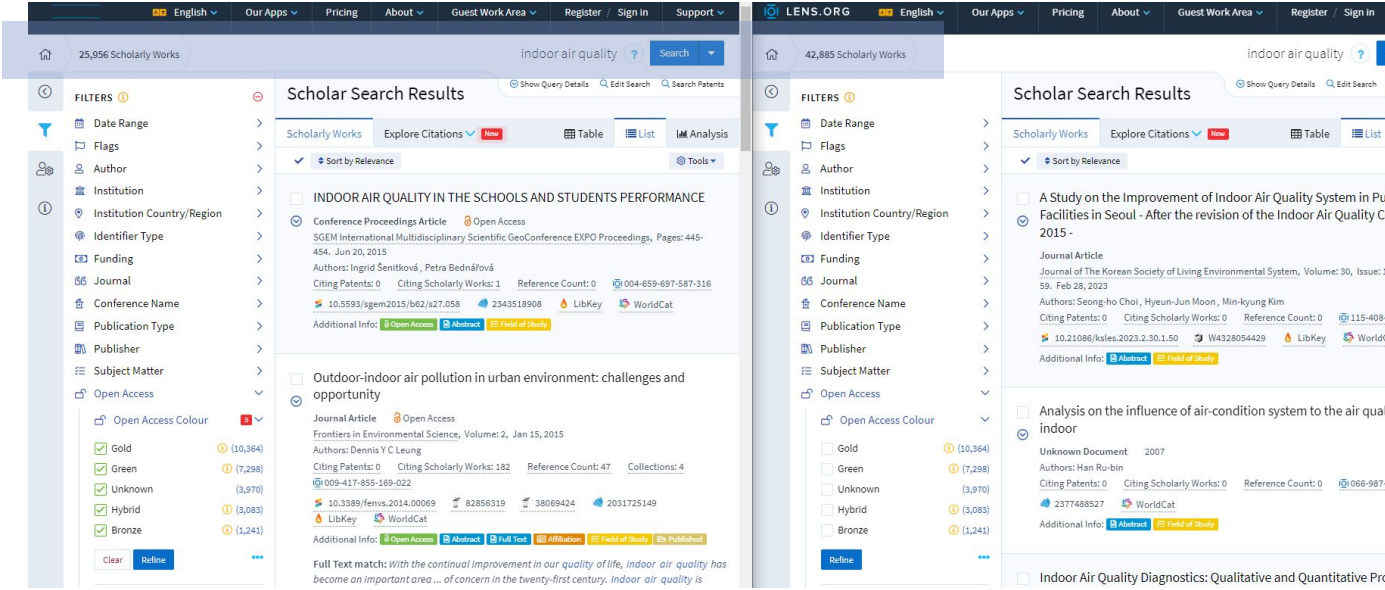
So the PubMed free full text filter is reliable, but not comprehensive.



In Lens: maybe :)

The Lens open access filter uses data from PubMed Central, Unpaywall, DOAJ, and other sources.

This is more comprehensive info about OA status than PubMed's free full text filter. But it's not 100% comprehensive either.



Part 4: you found some articles -- what next?

- Export search results and manage them in Zotero
- Deal with article paywalls
- Find more papers via “snowballing”

Stay organized with a citation manager

I use Zotero (free software) to organize articles and documents that I've read or intend to read.

Zotero can often get the PDF for me automatically.

I also use Zotero to insert formatted citations into manuscripts, and also my CV.

Setup

- Download Zotero on your computer and install it
- Add the Zotero extension (aka plugin, connector, bookmarklet) to all your browsers
- Create an account for syncing and sharing
- Get the Zotero iPad app
- Add Zotero to Microsoft Word and Google Docs
- Start adding records to your Zotero library
- Organize them in groups or with tags
- Questions? Ask in the Zotero Forum

Three ways to add records to your Zotero library

- Click the Zotero extension to add the webpage you are on to your library
- Export .ris files of database search results and import to Zotero -- great for batches of search results
- Drag PDFs into your Zotero library and Zotero will probably be able to find the article metadata for you

Bonus: if your collaborator uses Zotero, they can share a Zotero group with you.

Snowballing

This paper is interesting… so what about other papers

- By the same author (senior author, first author)
- In the same theme issue
- Using the same datasets or instrument or theoretical framework
- Related to the same grant
- That were cited in this paper
- That cite this paper
- That are cited by another paper that also cites this paper
- About the same topic
- About the same topic, but slightly tweaked

How will you access the articles you want to read?

Easy situations

1. Maybe it's free to read on the publisher's website.
   Great!
2. Maybe it's paywalled on the publisher's website, but it's free in PubMed Central.
   PubMed, Lens, and Google Scholar all have obvious PMC links for these.
3. Maybe it's paywalled on the publisher website, but it's free in an institutional repository of an author, or a preprint server, or another random website.
   Life is too short to search random websites one by one, so use browser plugins like Unpaywall, the Open Access Button, and the Google Scholar Button.

Harder situation: paywalled on the publisher website, and not available for free anywhere else.

4. Does your employer have HINARI/Research4Life access? Can they register and get access?
5. Ask your library to get the article through Interlibrary Loan.
6. You can contact the author. Usually people are delighted that readers are interested. You may have to look for the author's current affiliation + contact info.
7. You could give up and read something else – maybe some papers that cite and discuss the hard-to-find paper, or papers recommended by the "similar" tool in Google Scholar or PubMed.
8. Some readers use the pirate website Sci Hub – read more at https://www.science.org/doi/10.1126/science.352.6285.508

Part 5: more resources

JBI Critical Appraisal Tools

https://jbi.global/critical-appraisal-tools

Worksheets to evaluate different study designs, with a checklist and detailed explanations.

Equator Network database of reporting guidelines: https://www.equator-network.org/

PAHO-Equator Network course: Enhance the visibility and value of your research for health with reporting guidelines:

https://campus.paho.org/en/course/researchreportingguidelines

Campbell Collaboration systematic reviews and meta-analysis training

https://oli.cmu.edu/courses/systematic-reviews-and-meta-analysis/

Free (for now) online course

Ask yourself:

From the Cite Black Women Statement:

What does my perspective add to what we know? Who has contributed to what I know and what I do not know? And who am I in conversation with—or who should I be in conversation with—to carry this knowledge forward?

Smith, C. A., Williams, E. L., Wadud, I. A., & Pirtle, W. N. L. (2021). Cite Black Women: A Critical Praxis (A Statement). Feminist Anthropology. https://doi.org/10.1002/fea2.12040

Thank you

Want to save this slidedeck?
https://bit.ly/2025-07-31-lit-reviews

Please take this quick survey

Q&A

We'll discuss your questions -- live and from our shared document.

Resources that come up during Q&A

Starting here, there are extra slides that might be useful if some frequently-asked questions arise

PubMed's special feature: subject indexing

J Clin Ethics. 2020 Winter;31(4):303-317.

Developing a Triage Protocol for the COVID-19 Pandemic: Allocating Scarce Medical Resources in a Public Health Emergency

Benjamin Tolchin [1], Stephen R Latham [2], Lori Bruce [3], Lauren E Ferrante [4], Katherine Kraschel [5], Karen Jubanyik [6], Sarah C Hull [7], Jennifer L Herbst [8], Jennifer Kapo [9], Ernest D Moritz [10], John Hughes [11], Mark D Siegel [12], Mark R Mercurio [13]

Affiliations + expand

PMID: 32991327

Abstract

The coronavirus disease-2019 (COVID-19) has caused shortages of life-sustaining medical resources, and future waves of the virus may cause further scarcity. The Yale New Haven Health System developed a triage protocol to allocate scarce medical resources during the COVID-19 pandemic, with the primary goal of saving the most lives possible, and a secondary goal of making triage assessments and decisions consistent, transparent, and fair. We outline the process of developing the triage protocol, summarize the protocol itself, and discuss the major ethical challenges encountered, along with our answers to these challenges. These challenges include (1) the role of age and chronic comorbidities; (2) evaluating children and pregnant patients; (3) racial, ethnic, and socioeconomic disparities in health; (4) prioritization of healthcare workers; and (5) balancing clinical judgment versus protocolized assessments. We conclude with a review of the limitations of our protocol and the lessons learned. We hope that a robust public discussion of such protocols and the ethical challenges that they raise will result in the fairest possible processes, less need for triage, and more lives saved during future waves of the COVID-19 pandemic and similar public health emergencies.

MeSH terms

- Betacoronavirus
- COVID-19
- Child
- Coronavirus Infections
- Emergencies
- Female
- Health Care Rationing / ethics*
- Health Resources / supply & distribution*
- Humans
- Pandemics / ethics*
- Pneumonia, Viral
- Pregnancy
- Public Health
- SARS-CoV-2
- Triage / ethics*

Most articles in PubMed have subject indexing terms describing the contents of the articles.

You can use subject headings to make your searches more sensitive or more specific.

Headings can have subheadings (like /ethics or /supply & distribution).

The subject headings are arranged in a hierarchical ontology:

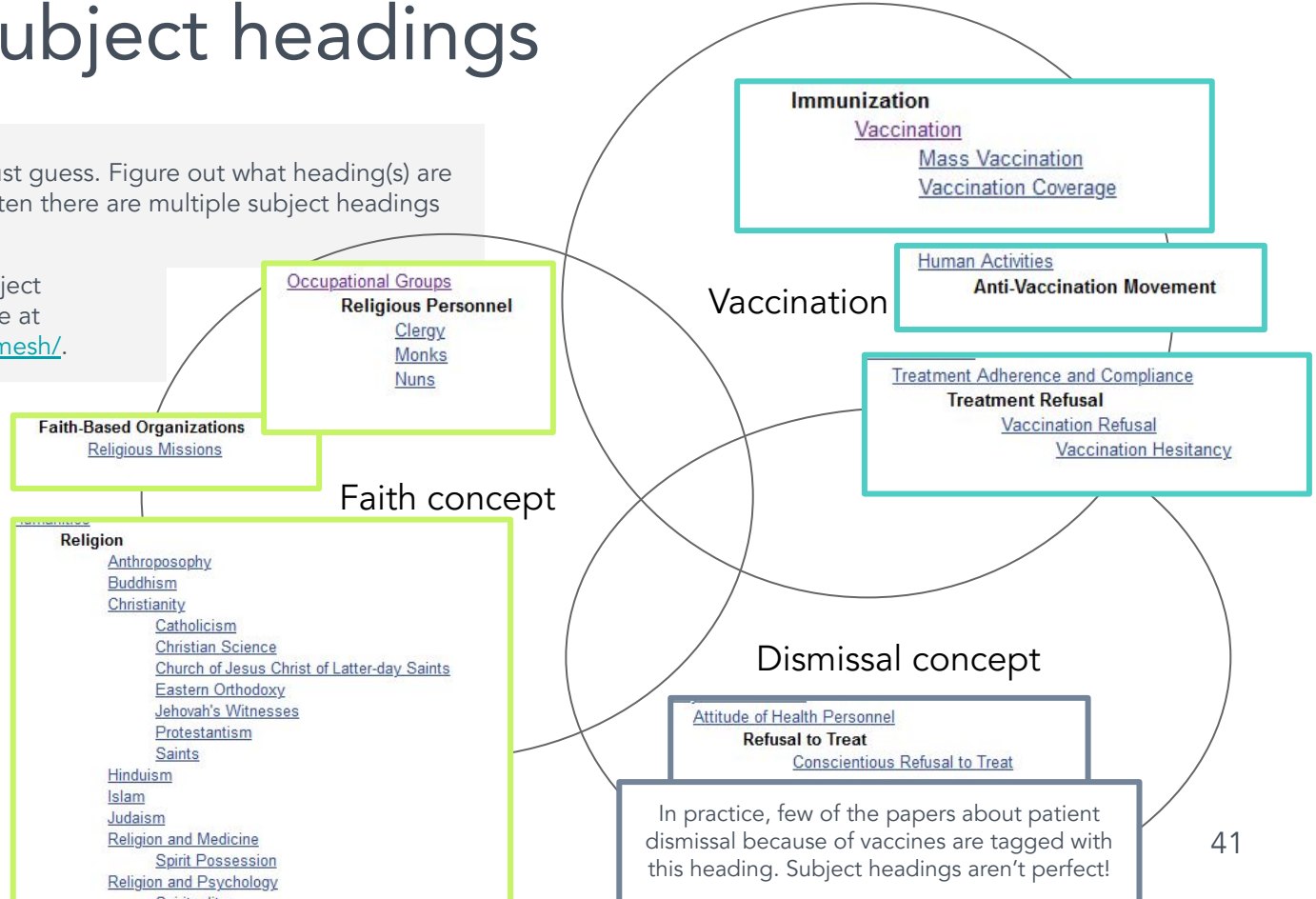
All MeSH Categories
- Phenomena and Processes Category
  - Reproductive and Urinary Physiological Phenomena
    - Reproductive Physiological Phenomena
      - Reproduction
        - **Pregnancy**
          - Gravidity
          - Labor, Obstetric
            - Cervical Ripening
            - Labor Onset +
            - Labor Presentation +
            - Trial of Labor
            - Uterine Contraction
          - Maternal-Fetal Exchange
          - Parity
          - Parturition
            - Birth Setting +
            - Natural Childbirth
            - Term Birth
          - Placentation
          - Pregnancy in Adolescence
          - Pregnancy Maintenance

PubMed subject headings

With subject headings, don't just guess. Figure out what heading(s) are a good fit for your concept. Often there are multiple subject headings that you'll want to use.

You can search for relevant subject headings in the MeSH database at https://www.ncbi.nlm.nih.gov/mesh/.

You can also check the indexing of articles you already know about -- scroll all the way to the bottom of the PubMed article page to find them.



PubMed's default: ATM

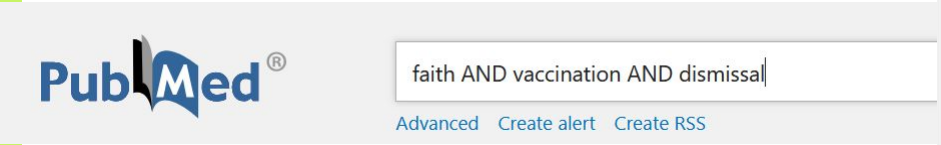
Automated Term Mapping happens in PubMed when you enter a query with no quotation marks and no field tags.

It adds some alternative word forms and some subject headings to your query.

Sometimes it works great; sometimes is doesn't work well.

You can see the ATM in the PubMed history, on the Advanced Search page.

How well does PubMed ATM interpret this query?



History and Search Details Download Delete

Search	Actions	Details	Query	Results	Time
#22	•••		Search: **faith AND vaccination AND dismissal** ("faith"[All Fields] OR "faithful"[All Fields] OR "faithfulness"[All Fields] OR "faiths"[All Fields]) AND ("vaccin"[Supplementary Concept] OR "vaccin"[All Fields] OR "vaccination"[MeSH Terms] OR "vaccination"[All Fields] OR "vaccinable"[All Fields] OR "vaccinal"[All Fields] OR "vaccinate"[All Fields] OR "vaccinated"[All Fields] OR "vaccinates"[All Fields] OR "vaccinating"[All Fields] OR "vaccinations"[All Fields] OR "vaccination s"[All Fields] OR "vaccinator"[All Fields] OR "vaccinators"[All Fields] OR "vaccine s"[All Fields] OR "vaccined"[All Fields] OR "vaccines"[MeSH Terms] OR "vaccines"[All Fields] OR "vaccine"[All Fields] OR "vaccins"[All Fields]) AND ("dismiss"[All Fields] OR "dismissals"[All Fields] OR "dismissed"[All Fields] OR "dismisses"[All Fields] OR "dismissing"[All Fields] OR "dismissive"[All Fields] OR "employment"[MeSH Terms] OR "employment"[All Fields] OR "dismissal"[All Fields]) **Translations** **faith:** "faith"[All Fields] OR "faithful"[All Fields] OR "faithfulness"[All Fields] OR "faiths"[All Fields] **vaccination:** "vaccin"[Supplementary Concept] OR "vaccin"[All Fields] OR "vaccination"[MeSH Terms] OR "vaccination"[All Fields] OR "vaccinable"[All Fields] OR "vaccinal"[All Fields] OR "vaccinate"[All Fields] OR "vaccinated"[All Fields] OR "vaccinates"[All Fields] OR "vaccinating"[All Fields] OR "vaccinations"[All Fields] OR "vaccination's"[All Fields] OR "vaccinator"[All Fields] OR "vaccinators"[All Fields] OR "vaccine's"[All Fields] OR "vaccined"[All Fields] OR "vaccines"[MeSH Terms] OR "vaccines"[All Fields] OR "vaccine"[All Fields] OR "vaccins"[All Fields] **dismissal:** "dismiss"[All Fields] OR "dismissals"[All Fields] OR "dismissed"[All Fields] OR "dismisses"[All Fields] OR "dismissing"[All Fields] OR "dismissive"[All Fields] OR "employment"[MeSH Terms] OR "employment"[All Fields] OR "dismissal"[All Fields]	5	13:15:00

PubMed's default: ATM

OK, how does PubMed interpret the query if we use all the terms from our concept table?

Search	Actions	Details	Query	Results
#23	•••		Search: **(faith OR doctrine OR religious beliefs OR prayer) AND (vaccines OR public health OR herd immunity OR anti-vaxxers) AND (physicians OR health care OR denial of care OR provider behavior)**	19,481

Translations

faith: "faith"[All Fields] OR "faithful"[All Fields] OR "faithfulness"[All Fields] OR "faiths"[All Fields]
doctrine: "doctrinal"[All Fields] OR "doctrine"[All Fields] OR "doctrine's"[All Fields] OR "doctrines"[All Fields]
religious beliefs: "religion"[MeSH Terms] OR "religion"[All Fields] OR ("religious"[All Fields] AND "beliefs"[All Fields]) OR "religious beliefs"[All Fields]
prayer: "prayerful"[All Fields] OR "religion"[MeSH Terms] OR "religion"[All Fields] OR "prayer"[All Fields] OR "prayers"[All Fields]
vaccines: "vaccin"[Supplementary Concept] OR "vaccin"[All Fields] OR "vaccination"[MeSH Terms] OR "vaccination"[All Fields] OR "vaccinable"[All Fields] OR "vaccinal"[All Fields] OR "vaccinate"[All Fields] OR "vaccinated"[All Fields] OR "vaccinates"[All Fields] OR "vaccinating"[All Fields] OR "vaccinations"[All Fields] OR "vaccination's"[All Fields] OR "vaccinator"[All Fields] OR "vaccinators"[All Fields] OR "vaccine's"[All Fields] OR "vaccined"[All Fields] OR "vaccines"[MeSH Terms] OR "vaccines"[All Fields] OR "vaccine"[All Fields] OR "vaccins"[All Fields]
public health: "public health"[MeSH Terms] OR ("public"[All Fields] AND "health"[All Fields]) OR "public health"[All Fields]
herd immunity: "immunity, herd"[MeSH Terms] OR ("immunity"[All Fields] AND "herd"[All Fields]) OR "herd immunity"[All Fields] OR ("herd"[All Fields] AND "immunity"[All Fields])
physicians: "physician's"[All Fields] OR "physicians"[MeSH Terms] OR "physicians"[All Fields] OR "physician"[All Fields] OR "physicians's"[All Fields]
health care: "delivery of health care"[MeSH Terms] OR ("delivery"[All Fields] AND "health"[All Fields] AND "care"[All Fields]) OR "delivery of health care"[All Fields] OR ("health"[All Fields] AND "care"[All Fields]) OR "health care"[All Fields]
denial: "denial, psychological"[MeSH Terms] OR ("denial"[All Fields] AND "psychological"[All Fields]) OR "psychological denial"[All Fields] OR "denial"[All Fields] OR "denials"[All Fields]
provider: "provide"[All Fields] OR "provided"[All Fields] OR "provider"[All Fields] OR "provider's"[All Fields] OR "providers"[All Fields] OR "provides"[All Fields] OR "providing"[All Fields]
behavior: "behavior"[MeSH Terms] OR "behavior"[All Fields] OR "behavioral"[All Fields] OR "behavioural"[All Fields] OR "behavior's"[All Fields] OR "behaviorally"[All Fields] OR "behaviour"[All Fields] OR "behaviourally"[All Fields] OR "behaviours"[All Fields] OR "behaviors"[All Fields] OR "pattern"[All Fields] OR "pattern's"[All Fields] OR "patternability"[All Fields] OR "patternable"[All Fields] OR "patterned"[All Fields] OR "patterning"[All Fields] OR "patternings"[All Fields] OR "patterns"[All Fields]

Warnings

(faith OR doctrine OR religious beliefs OR prayer) AND (vaccines OR public health OR herd immunity OR anti-vaxxers) AND (physicians OR health care OR denial **of** care OR provider behavior)

Stop word: of

When ATM doesn't work well in PubMed, you can tweak it or do it yourself

Search	Actions	Details	Query	Results
#30	•••	›	Search: **#26 AND #27 AND #28**	8
#28	•••	›	Search: **dismiss*[tw] OR refusal to treat[mh]**	12,424
#27	•••	›	Search: **vaccine*[tw] OR vaccinat*[tw] OR unvaccinat*[tw] OR vaccination[mh] OR anti-vaccination movement[mh] OR vaccination refusal[mh]**	493,755
#26	•••	›	Search: **#24 OR #25**	133,545
#25	•••	›	Search: **religion[mh] OR religious personnel[mh] OR religious missions[mh]**	69,069
#24	•••	›	Search: **faith*[tw] OR religio*[tw] OR spiritual*[tw] OR prayer*[tw] OR doctrin*[tw]**	115,268

PubMed syntax tips

Asterisk = truncate = I don't care how the word *ends* as long as it starts like this

[field tag] comes after each word or phrase to tell PubMed which "index" to check for that term

[tw] = textword, including title, abstract, author keywords, subject heading words

[mh] = MeSH term and all the narrower MeSH terms on that "branch"

More syntax tips, not shown in the screenshot:

If you want to search for a phrase that PubMed doesn't recognize as a phrase, put it in quotation marks

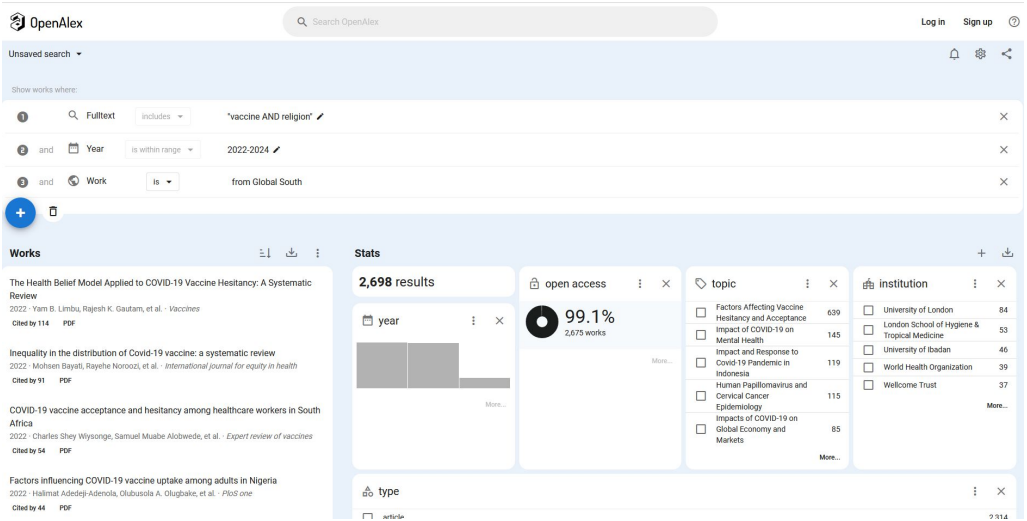
If you want to use AND and OR in the same line, use parentheses to control the order of operations

OpenAlex tips

You won't use subject headings like you might in PubMed. Instead, you like browse OpenAlex "topics."

If you search Google-style, use the relevance ranking and filters to find the best results.

Or, you can use parentheses and Boolean operators to control exactly what gets retrieved. In this style of searching, put quotation marks around a multi-word phrase, even if the words are connected by a hyphen.

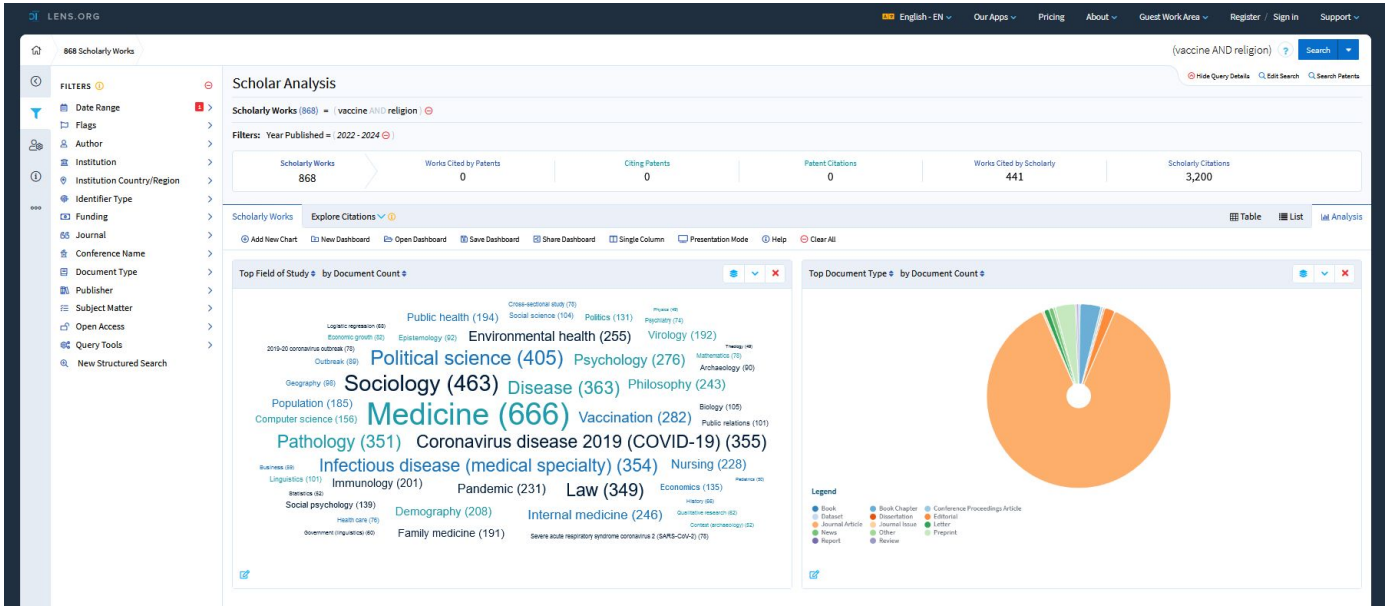


Lens tips

You can use parentheses and Boolean operators to control exactly what gets retrieved; put quotation marks around a multi-word phrase, even if the words are connected by a hyphen.

You can filter your results in the visualizations.

Make sure you are searching Lens *Scholar* instead of Lens *Patents*.



If you really want to learn about searching for evidence synthesis, start here:
https://docs.google.com/presentation/d/14L26F2bEcKmFAWmPZIHbKkfBtmC76jL4/edit#slide=id.p1