AGENDA

• How do I get started?
• How does a literature review differ from other types of papers and database searches?
• How can I keep my search and sources organized?
• When do I stop searching and start writing?
• How do I structure the written part of the review?
• Slides & recording available at http://researchguides.uic.edu/phlitreviews
• Questions welcome throughout
• Online participants: type questions in chat box (no audio participation)
• Chat box will be recorded
GETTING STARTED
WHY WRITE A LITERATURE REVIEW?

• Give credit to other scholars.
• Provide the context for the rest of your work – for instance, describe the population, describe the setting...
• Depth and focus may change depending on the review, but ALL literature reviews must provide context.
• Review basic facts necessary for understanding your topic.
• Some literature reviews need to stand alone: They are a complete document (e.g., systematic reviews)
WHY WRITE A LITERATURE REVIEW?

• As students, especially in the context of a capstone, the literature review has two main purposes:
  • Provides the context for your project, justifies the reason for your research
    • Explains public health relevance
    • Identifies gaps in knowledge
  • Warrants your mastery of the topic, i.e., demonstrates that you know the field
1. Part of the introduction in a larger document.
   - Cut to the chase.
   - Expect it to be short and dense with citations.
   - Still has to be organized – the methods section will probably be 3-5 sentences.
   - The results (article summaries) and analysis sections (synthesis, thematic presentation) will vary in length depending on the topic.
2. Standalone document

- Needs to be well organized – IMRAD is helpful
- Introduction has to defend selection of the topic.
- Saturation comes into play . . .
  - How do I know if I have enough information?
  - How in-depth does it need to be?
- Have you been given parameters for your capstone literature review?
3. Systematic review

- Most in-depth version
- Usually a standalone document
- Very detailed methods section; follows strict, established research protocol (meet with a librarian)
- Sets inclusion/exclusion criteria for literature reviewed
- Describes the database[s] used
- Discloses keywords/MeSH terms
BEFORE YOU START
CRAFTING THE QUESTION IS KEY.

• Questions are posed at the beginning of a project – even when the project is the literature review.

• A good question supports your larger capstone project and guides your search for resources.

• Do not ask a question for which you already know the answer – unless you are going to elaborate and describe the answer further.

• Is anyone writing a literature review as the sole element of their capstone?
BEFORE YOU START
CRAFTING THE QUESTION IS KEY.

- New knowledge depends on the question the researcher asks. E.g., we know that Black women with breast cancer are more likely to die from their disease. Why is this?
- Do Black women have a genetic pre-disposition to more virulent breast cancer?
- Do Black women have equal access to screening opportunities?
- Do Black women follow doctors’ treatment recommendations differently than non-Black women?
GETTING STARTED

• Who has a topic? Please share.
• What problem(s) are associated with your topic?
• Need to ask a question or questions.
• REMEMBER: The literature review describes the state of the knowledge.
EVERY PROCESS HAS A METHOD.
Your goal is to find evidence.

- Peer-reviewed literature
- Government websites: CDC, SEER, EPA
- News outlets
- Grey literature
  - "That which is produced on all levels of government, academics, business and industry in print and electronic formats, but which is not controlled by commercial publishers."
- Dissertations
SEARCHING FOR INFORMATION
GOALS OF A LITERATURE REVIEW SEARCH

• Get a thorough lay of the land = cast a wide net with your search by:
  • Searching multiple databases
  • Use long search strings to search every possible combination of synonyms and related terms

Search ((("community health workers" OR "community health services" OR "home visits" OR "home care services" OR "in-home" OR "home visiting"))) AND (("prenatal care" OR "prenatal education" OR "maternal health services" OR "antenatal care"))) AND (("low income" OR "poverty" OR "socioeconomic status")))
BEFORE YOU SEARCH

- Is your topic clearly defined?
- Can you explain what you’re looking for in a single sentence?

**PICO**
- Population/Problem
- Intervention
- Comparison
- Outcome

**SPIDER**
- Sample
- Phenomenon of Interest
- Design
- Evaluation
- Research Type
Research Question → Search Terms

Is distributing educational materials to pregnant women an effective means of increasing Tdap uptake?

- **P:** pregnant women
- **I:** educational materials
- **C:** (no intervention/current standard)
- **O:** Tdap vaccine uptake
How do pregnant women perceive Tdap vaccination?

• Sample – Pregnancy/pregnant women
• Phenomenon of Interest – Tdap vaccination
• Design – Interviews/grounded theory/phenomenological
• Evaluation – barriers/perceptions/attitudes
• Research Type – qualitative
BEFORE YOU SEARCH

• Do some planning:
• Choose databases to search
• Decide where you will save citations
  • Citation management software (RefWorks/Endnote/Zotero etc.)
  • Excel
• Other strategies?
CHOOSING DATABASES

• PubMed and…
• PAIS
• EconLit
• Sociological Abstracts
• ERIC
• PsycINFO
• Several others to choose from…

Which databases will be most fruitful? It depends on your topic. Find a list of recommended databases at researchguides.uic.edu/publichealth or ask a librarian for help selecting databases.
Keywords vs. controlled vocabulary

Controlled vocabulary = terms added by the database to indicate major concepts in an article

Most databases have their own controlled vocabulary

- e.g. PubMed = MeSH (Medical Subject Headings)
- Often found below the abstract when viewing an article in a database
FINDING THE BEST SEARCH TERMS

- Search by controlled vocabulary to find all articles tagged with a certain concept
- Search by keywords to locate articles not yet indexed/tagged
- The most comprehensive searches will include both keywords and controlled vocabulary terms
- For example…
FOR EXAMPLE…

Are Local Wellness Policies effective in improving physical activity among school-aged children, esp. those from low-income families?

Search PubMed:

local wellness policy AND physical activity AND low-income
Local Wellness Policy 5 years later: is it making a difference for students in low-income, rural Colorado elementary schools?

Belansky ES¹, Cutforth N, Gilbert L, Litt J, Reed H, Scarbro S, Marshall JA

Wellness Policy (LWP) was intended to promote student health in schools. This article focuses on the health practices of rural elementary schools in Colorado.

The LWP mandate, a survey was administered to a random sample of principals, physical educators, and students in 45 rural, low-income elementary schools in Colorado. Response rates were high (81% of schools, 71% of principals, 75% of teachers, and 64% of students).

In general, there was no significant change in school policies, nor did offerings of fresh fruits and vegetables increase, nor did recess increase, nor did offerings of fresh fruits and vegetables. More schools adopted policies that allowed for detentions or missed recess activities (3.2% in 2005 vs 28.2% in 2011, P = .03). More schools scheduled recess increased (0.4% in 2005 vs 1.4% in 2011, P = .04) and developed policies for vending machines (42.9% in 2005 vs 65.7% in 2011, P = .004).

While the increase in recess is modest, and arguably the most important school practices such as increased PE and recess activities in the lunch line have not changed in the 5 years since the mandate went into effect. Further investigation is needed to identify the knowledge, skills, and attitudes as well as financial and physical resources required for school administrators to make changes in school practices.
MeSH terms that retrieve this & other relevant articles:
- Health Policy
- Poverty
- Exercise
<table>
<thead>
<tr>
<th>Wellness</th>
<th>Low-income</th>
<th>“Physical activity”</th>
</tr>
</thead>
<tbody>
<tr>
<td>Health Promotion [mesh]</td>
<td>Poverty [mesh]</td>
<td>Exercise [mesh]</td>
</tr>
<tr>
<td></td>
<td>SES</td>
<td>Recess</td>
</tr>
</tbody>
</table>
FINAL PUBMED SEARCH STRING:


[mesh] or [mh] = MeSH term

[tw] = text word (searches most fields except journal title & author name)

[tiab] = title, abstract, and keywords only
BOOLEAN REFRESHER

AND

OR

NOT
POVERTY AND WELLNESS
POVERTY OR WELLNESS
POVERTY OR WELLNESS OR MORTALITY
POVERTY AND WELLNESS AND MORTALITY
BOOLEAN OPERATORS: TAKEAWAYS

• AND focuses/narrows your search results
• OR gives you MORE
• Any time you use more than one term to describe the same concept:
  • Separate terms with OR
  • Use parentheses around related terms
What are the most common barriers and facilitators to breast cancer screening in rural settings in the U.S.?
What are the most common barriers and facilitators to breast cancer screening in rural settings in the U.S.?

• **Breast cancer screening** = 106,331 results in PubMed

• **Breast cancer screening rural barriers facilitators** = 5 results
<table>
<thead>
<tr>
<th>Breast cancer</th>
<th>Screening</th>
<th>Rural</th>
<th>Barriers</th>
</tr>
</thead>
<tbody>
<tr>
<td>“Early detection of cancer” [mesh]</td>
<td></td>
<td></td>
<td>“Healthcare Disparities” [mesh]</td>
</tr>
<tr>
<td>“Mammography” [mesh]</td>
<td></td>
<td></td>
<td>Insurance</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Cost</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>“Health Knowledge, Attitudes, Practice” [mesh]</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Cultural</td>
</tr>
</tbody>
</table>
START SEARCH WORKBOOK

• New tab for each database
• Separate column for each concept
• Use spreadsheet to track # of results and where you saved them
• Downloadable template available at researchguides.uic.edu/phlitreviews

= 236 results
SAVE YOUR RESULTS

- In PubMed:
  - Use a MyNCBI account
  - Save to RefWorks or another citation manager
- One approach:
  - Save all results to citation manager
  - Create separate “Yes” and “No” folders
  - Review articles later
Log in to RefWorks

RefWorks allows you to keep track of citations and to automatically generate a bibliography using a variety of citation styles.

Create an account

Sign up or log in with your NetID. RefWorks is also offering a new beta version that is still in development, which you can try out.

Log in to RefWorks ➔ Try the new RefWorks ➔
Save references on the web

Use Save to RefWorks to add references and full-text to RefWorks from any website.

Install Save to RefWorks

Cite in Microsoft Word

If you use Microsoft Word for writing papers, you'll love the tools RefWorks provides you. It's a plugin that allows you to quickly insert and edit citations, adding them to your bibliography as you go.

Download & install Office 32-bit version

Other Windows and Mac Versions
“TRANSLATING” SEARCH FROM PUBMED

• Use PubMed search as starting point for next database
• Each database will have its own controlled vocabulary; find alternatives to your MeSH terms
• Look beside search results for suggested terms (often labeled “Subjects” or “Subject Headings”)

CITATION TRACKING

• If a literature review is a summary of the scholarly conversation happening around your topic, citations are a record of that conversation.

• Follow citations backwards and forwards from the articles you find to track the conversation.

• Find highly cited articles – most impact

• Web of Science, Scopus, and Google Scholar – tell # of times an article has been cited
THREE MAIN PATHS TO LITERATURE

1. Search for articles in databases
   - “Find It @ UIC” button searches for full text
   - Submit requests through Interlibrary Loan
THREE MAIN PATHS TO LITERATURE

• 2. Look in reference lists/bibliographies of articles for authors writing on the same topic

• Use Library **Bookmarklet** off campus to access full text

researchguides.uic.edu/phlitreviews (library browser button)
THREE MAIN PATHS TO LITERATURE

• 3. use Scopus, Web of Science, and Google Scholar to find newer articles that cited a particular work

Association between breastfeeding and intelligence, educational attainment, and income at 30 years of age: a prospective birth cohort study from Brazil

By: Victora, CG (Victora, Cesar G.) [1]; Horta, BL (Horta, Bernardo Lessa) [1]; de Mola, CL (de Mola, Christian Loret) [1]; Quevedo, L (Quevedo, Luciana) [2]; Pinheiro, RT (Pinheiro, Ricardo Tavares) [2]; Gigante, DP (Gigante, Denise P.) [1]; Goncalves, H (Goncalves, Helen) [1]; Barros, FC (Barros, Fernando C.) [2]

View ResearcherID and ORCID
STAY ORGANIZED!

- As you search, keep track of:
  - Databases searched
  - Search terms used
  - Where articles were saved
  - RefWorks/Zotero/EndNote/Mendeley
  - Use the cloud as backup
HOW DO I KNOW I’VE FOUND EVERYTHING?

• Reaching “saturation”
• Have you searched in more than one place/database?
• Have you developed a comprehensive search string, using synonyms and avoiding bias?
• Have you used citations to follow the scholarly conversation?
  • “Similar articles” or “Articles viewed together” features
HOW DO I KNOW I’VE FOUND EVERYTHING?

• Is there one journal in particular that specializes in your topic? Search its Table of Contents.
  • Web of Science and Scopus will display the top 10 journals that publish on a search topic—click “analyze results.”

• Have you consulted with a librarian?
• Are you seeing the same author/study names/themes repeated again and again and again?
WHEN CAN I STOP?

• It’s your own judgment call; there’s no definitive cut-off.
• Remember: only true systematic reviews must guarantee that every piece of relevant literature has been located.
• Choose a certain # of databases & build single search strings to keep the process contained.
• If context permits, be transparent about your methods; this helps your reader understand your approach.
WHEN CAN I STOP?
THE SNOWBALL/FALLING DOWN THE RABBIT HOLE EFFECT

• Set inclusion/exclusion criteria for yourself if you fear the “snowball effect.”
  • e.g., I’m looking for primary studies from the last 10 years that evaluate a particular intervention
  • Take notes on these results, then remark on what you’re missing
    • Background/theory
    • Systematic reviews/meta-analyses
    • A single component of your question rather than all variables together
TIPS FOR SUCCESS

• Expand your search to be as thorough as you can in the time you have
• You’ll probably find more irrelevant results than relevant
• Take notes so you can retrace your steps
• Think creatively – seek input from others
NEXT STEPS:
SYNTHESIS & WRITING
EVALUATING INDIVIDUAL ARTICLES

After you have assembled a collection of readings:

• Read through them all—more than once
• Take notes in a notebook or separate document
• Main points to note for each article:
  • Strengths
  • Weaknesses
  • What it contributes to your research/topic
CODING/FINDING THEMES: MATRIX METHOD

- In a table, create one row for each article and columns for article themes, topics, methodology & findings, etc.
- Garrard & Aveyard books linked from phlitreviews page.

<table>
<thead>
<tr>
<th>Author/date</th>
<th>Aim of study/paper</th>
<th>Type of study/information</th>
<th>Main findings/conclusions</th>
<th>Strengths and limitations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Brown (2006)</td>
<td>To explore student views of campus life</td>
<td>Questionnaire study</td>
<td>35% of students preferred campus-based universities</td>
<td>Random sample of students not obtained. Very low response rate</td>
</tr>
<tr>
<td>George (2005)</td>
<td>To express opinion on campus life</td>
<td>Expert opinion</td>
<td>Campus-based universities prevent integration into the community</td>
<td>Anecdotal opinion only</td>
</tr>
</tbody>
</table>

Aveyard, p. 129.
LITERATURE SEARCH WORKBOOK

- Final sheet can be used for matrix/coding/notes
ORGANIZE BY THEMES

• This will help you see the conversation as a whole
• Notice names of researchers that reappear
• Identify gaps
  • Is it missing because it doesn’t exist, or because you didn’t find it?
• Stand-alone lit reviews: use these themes as section headings
STRUCTURE OF ACADEMIC WRITING

Introduction
Methods
Results
And [analysis]
Discussion

* Confine your comments to these sections.

INTRODUCTION

• The introduction should set the tone for the rest of what you write. Are you going to compare and contrast published authors? Are you going to evaluate evidence? Are you going to enumerate gaps in the research? Are you going to delineate a specific policy change or advocacy approach?

• Be prepared to revisit the introduction when you finish writing the paper. The introduction and the conclusion should reinforce each other.
• This paper discusses two issues related to parental compliance with recommended childhood vaccinations. Parental compliance with the established childhood vaccination schedule ensures individual-level and community-level protection against a wide variety of diseases and thus, is an important public health issue. The specific issues discussed in this paper are: To what extent is lack of compliance related to parental preferences? Or, is lack of compliance more strongly related to parental understanding and knowledge of the requirements?
METHODS

• The process you followed to select the materials you are including is reported in the Methods section.

• “Using the xx databases and search terms related to the concepts of “smoking cessation” and “Latinos,” I found xx articles, xx of which were published in the last five years.”

• “In preparing this literature review, I consulted the xx website and, using the search term “immunization,” I found xx articles concerning federal policy related to immunization.”
RESULTS – WHAT DID YOU FIND?

• This section presents the findings. It includes facts and figures – anything that will explain to the reader what was learned.

• Think of this section as, “Just the facts, ma’am.”

• In academic writing, the author takes the role of the narrator. It is your job to let the data tell the story – in a literature review, the data points are your articles.
“Of the 13 articles retrieved using the search terms “smoking cessation” and “Latinos,” seven focused on adolescents; in three, the sample spanned all adult age groups; the remainder focused on narrow age ranges.”

“According to the xx website, immunization policy related to xx clearly states xx.

Of course, neither of these examples is complete! They represent possible first sentences of a paragraph.
ANALYSIS – WHAT DO THE FINDINGS MEAN?

• This is the tricky one. The distinction between results and analysis is most clear in statistical research. In statistical research, we can separate things like frequencies into results and tests of interaction into analysis.

• In a literature review, we write an analysis section when we need to show the relationships between the topics discussed in the results section.
ANALYSIS – WHAT DO THE FINDINGS MEAN?

• Use this section to summarize the findings and present an analysis of their meaning.

• “In these 13 studies, it was found that it is most difficult to impact the smoking behavior of the xx-xx age group.”

• “Federal immunization policy clearly states xx; however, this does not match with state-level policies in the majority of states.” citation

• Do not state your opinion! However, the points you choose to highlight will reflect your understanding of the topic and give the reader an idea of your opinion.
DISCUSSION (CONCLUSION)

• This is where you get to say in your own words, “What does this all mean?” The first sentence plays a key role and describes the main findings. The final sentence should be conclusive and provide a clear message.

• This section often includes comments regarding gaps found in the present research and/or the need for further research.

• Tie your comments into the way you set up the introduction and the substance of your capstone.