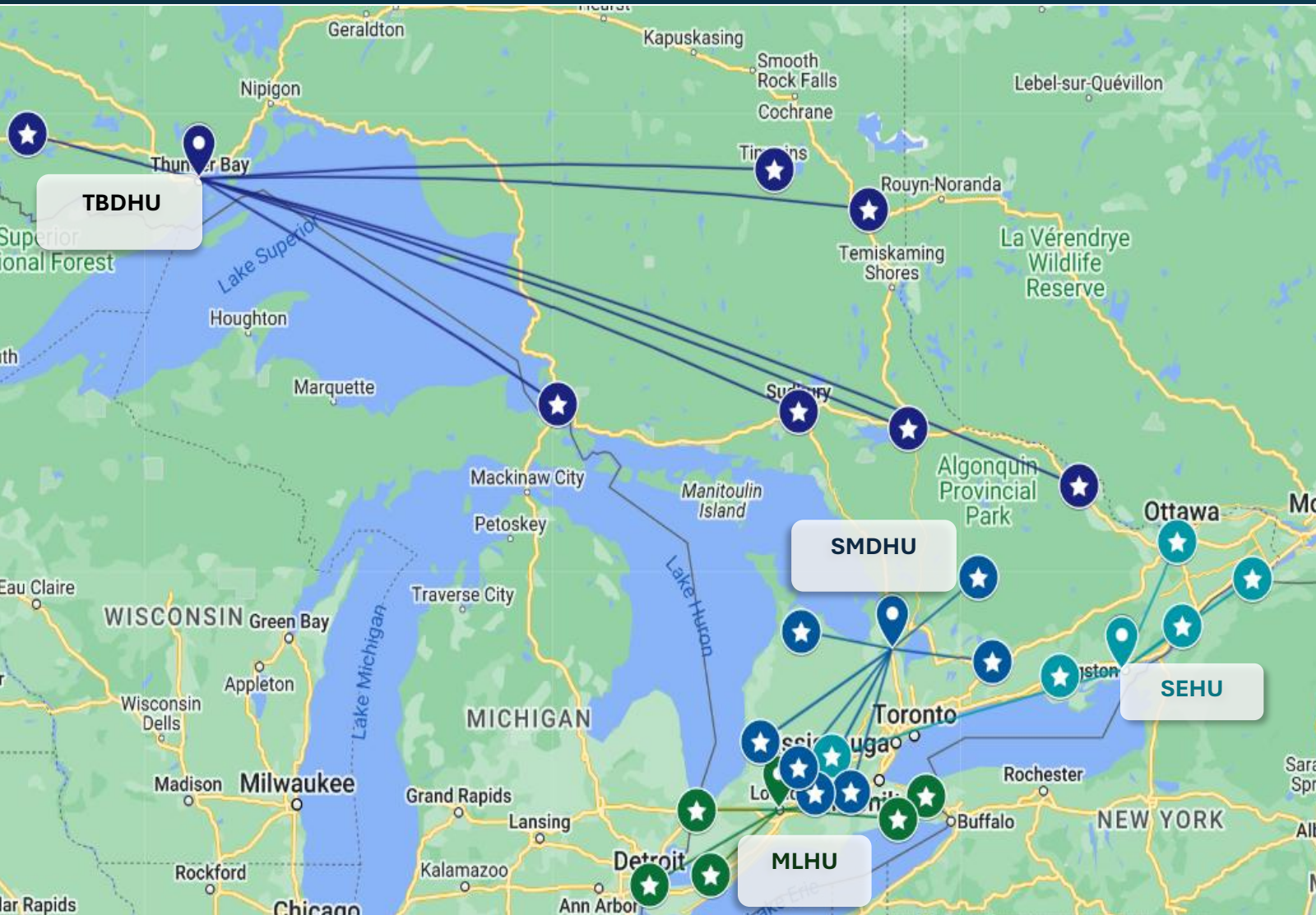




Question Development

Shared Library Services Partnership

About Us



We are a remote centralized library team based out of 4 public health units

Want to learn more?

Check out <https://slsp.ca/about-us>

Agenda

1. Before you start
2. Why question development?
3. Tools:
 - a) Generative AI
 - b) Concept Mapping
 - c) Frameworks



1. Before You Start ...

Before starting, ask yourself the following questions:

1. What has been done/is being done on this topic? *(Ask your librarian to check with other health units provincially)*
2. Is the scope of the question matched to the timeframe?
3. Do I have the necessary resources? *(Enough staff or access to software?)*
4. Do I have the skill level required? *(Do I need support or training? Who else might be able to assist with this project?)*
5. What is this review trying to answer? *(To describe, analyze, or explore?)*
6. How will this research impact health unit activities?
7. What will the final product be? Who is the audience? *(Am I writing a Briefing Note, submitting an Article, creating a Presentation, other?)*
8. Will the final product be disseminated? *(How widely? Forwarded to colleagues provincially? Where will the information live internally?)*
9. What type of data will be included? *(Local statistics? Peer reviewed articles? Grey literature? Graphics?)*
10. What happens if there isn't any research available? Is the research generalizable to your population?
11. What happens if the research is in opposition to (community, health unit, individual) beliefs?
12. What is the risk? *(RAFT: Reputation? Academic Publication? Financial ? Time?)*
13. Do I have any preconceived ideas or biases?

Equity Informed Approach

Ontario Agency for Health Protection and Promotion (Public Health Ontario). [Overview of equity informed approaches to evidence synthesis](#). Toronto, ON: King's Printer for Ontario; 2024.

Evidence Synthesis Step	Equity Considerations	Suggested Tools, Frameworks and Examples
Scoping: Setting the research agenda and Formulating the research question	<ul style="list-style-type: none">• Develop governance structures, such as Advisory Groups or engage Community Research Partners (CRPs) to enable people with lived experience to inform scope, methods, and provide ongoing guidance.^{10,17,18,19}• Plan adequate compensation and resource allocation for participation, meeting costs, travel, and training for synthesis team, Advisory Groups and CRPs.¹⁸• Conduct training on power imbalances, implicit bias, and building trust and respect to create an environment where the synthesis agenda can be collaboratively and reciprocally set.²⁰	<ul style="list-style-type: none">• The <i>Cochrane Collaboration</i> identifies the following steps to formulate the research question for equity-focused reviews: (i) define health equity; (ii) articulate hypotheses about equity; (iii) identify appropriate study designs to assess equity; (iv) consider appropriate outcomes for equity; and (v) unpacking social, political, and cultural context of planned and implemented programs/services.²¹• <i>PROGRESS-Plus</i> is one means to identify and further refine specific factors related to the social determinants of health in the scoping phase.²²⁻²⁵ This framework should be interpreted contextually and is not exhaustive of all determinants of health (i.e. structural determinants).

Image from: Ontario Agency for Health Protection and Promotion (Public Health Ontario). [Overview of equity informed approaches to evidence synthesis](#): Table 1: Considerations for Equity-Informed Approaches to Evidence Synthesis. Toronto, ON: King's Printer for Ontario; 2024. pp. 3

2. Why question development?

Your research question is a roadmap – it guides the work that you and your team are doing, the aims and scope of your institution, and builds a foundation for future publications.

An ill-formed question can result in:

- An inconclusive answer
- Irrelevant results
- A biased answer
- Confusion during title/abstract screening
- Inconsistent team approaches to synthesizing the literature
- Wasted time
- Poor final product



What's the Difference?

What public health interventions have been implemented to affect the rate of gun violence?

- This question does not require the literature to 'evaluate' the intervention. Articles may discuss:
 - How the intervention was structured
 - What resources were required to implement the public health intervention
 - Who the intervention targeted
 - What was the outcome
- This question is broad and scoping in nature

Do public health interventions affect the rate of gun violence?

- This question requires the literature to 'evaluate' the public health intervention
- It narrows the results to studies which have measured gun violence rates before and after an intervention was implemented
- This question is narrow and focused in nature

A Question Should Be...

Answerable Be sure you ask an answerable question (*do not make a statement*)

Precise Is each concept in your question clear? (*i.e., what do you mean by “best practice”?*)

Singular Ask one question at a time (*larger projects may have sub-questions*)

Definable Consider the type of question are you asking (qualitative, quantitative)?

Feasible The question can be answered within the scope of your resources, timeframe, and methods available

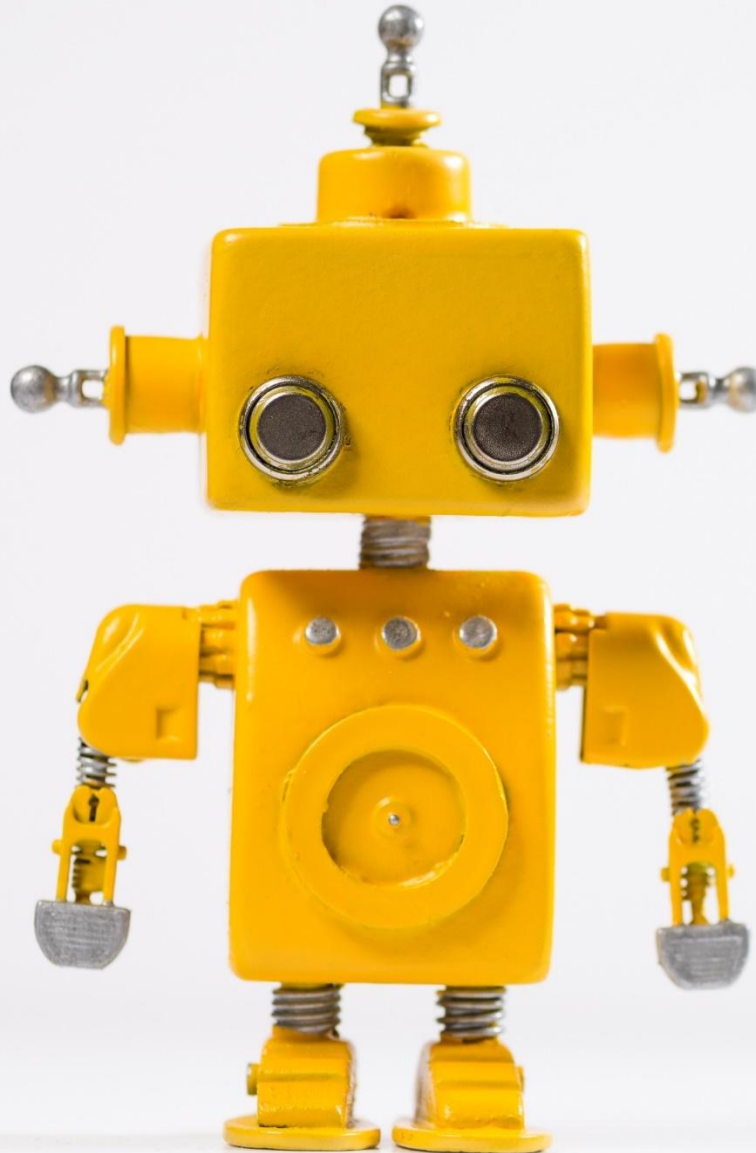
Relevant it should address a significant issue within the field, contributing to existing knowledge

If you could describe the perfect article that answered your question, what would it be about?



3. Tools: Generative AI

- To Brainstorm
- To Edit



Just a sec...

1. Check your AI guidelines / policies
2. There are **different versions of AI** (e.g., Copilot, Chat GPT, Anthropic, etc.)
3. Treat AI as public facing





How will you set the stage for questioning?

Is there anything you need to omit from your prompting questions to ensure you aren't posting identifying or private information?

If AI isn't providing you with appropriate suggestions, how can you simplify and reword your questions?

Prompting



AI for Question Development

Be Specific: Start the conversation by explaining your purpose and give context

Ask: Ask for what need help with

Refine: Use examples and scenarios to guide AI's answers

Adaptive: if you aren't getting the answer you need, ask follow-up questions

Inspirational: AI suggestions may not be perfect, but using AI can help you get started

! Remember: AI may hallucinate & requires human validation

3. Tools: Concept Mapping

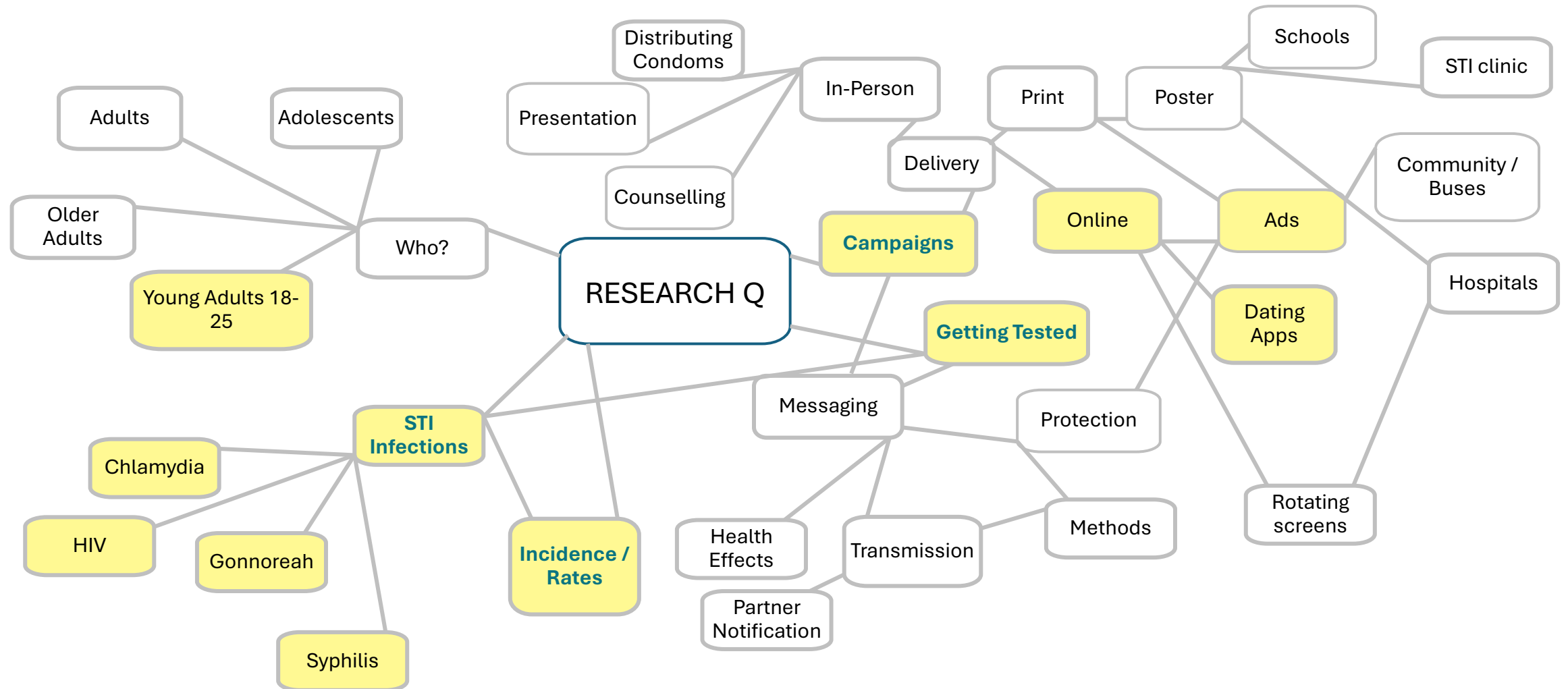
- Can be applied to any question
- Helps focus your question and parameters
- Generates group discussion & consensus
- Brainstorming tool – get creative!



Do campaigns impact rates of testing for sexually transmitted infections?



Do 'get tested' campaigns on dating apps increase the rates of STI testing in young adult populations?



3. Tools: Frameworks

- Manage and break down research questions
- Help identify key concepts in your question
- Determine your inclusion and exclusion criteria
- Set the foundation for your search strategy

What is PICO?

P Patient or Population

I Intervention

C Control/Comparison/Comparator

O Outcome



PICO Example

Is adherence to the mediterranean diet associated with reduced risk of myocardial infarction for adults aged 45+?

Concept 1	→	Patient or Population	Adults aged 45+
Concept 2	→	Intervention	Mediterranean diet
Concept 3	→	Control	Typical diet / no comparison
Concept 4	→	Outcome	Risk of myocardial infarction

The Many Variations of PICO

FRAMEWORK	COMPONENT
PICO.....	Population, Intervention, Control/Comparison/Comparator, Outcome
PICOT.....	Population, Intervention, Comparison, Outcome, Time
PICOC.....	Population, Intervention, Comparison, Outcome, Context
PO.....	Population/Phenomena Outcome
PESICO.....	Population, Environment, Stakeholders, Intervention, Comparison, Outcome
EPICOT.....	Evidence, Population, Intervention, Comparison, Outcome, Timestamp
PICOTT.....	Population, Intervention, Comparison, Outcome, Type of question, Type of study design
PICOTS.....	Population, Intervention, Comparison, Outcome, Study type
PECODR.....	Problem, Exposure/Intervention, Comparison, Outcome, Duration, Results
PISCO.....	Population, Intervention, Setting/Comparison, Outcome
PIPOH/S.....	Population, Intervention, Professionals, Outcome, Healthcare/Setting
PCC.....	Population, Concept, Context

Adapted with permission from:

Pach B, Massarella S, Sharma M. **To PICO or not to PICO: what is the question? Frameworks for developing answerable research questions** [Internet]. Presented at: PHO Grand Rounds. 2016 Jun 7 [cited 2018 Nov 8]; Toronto, ON.

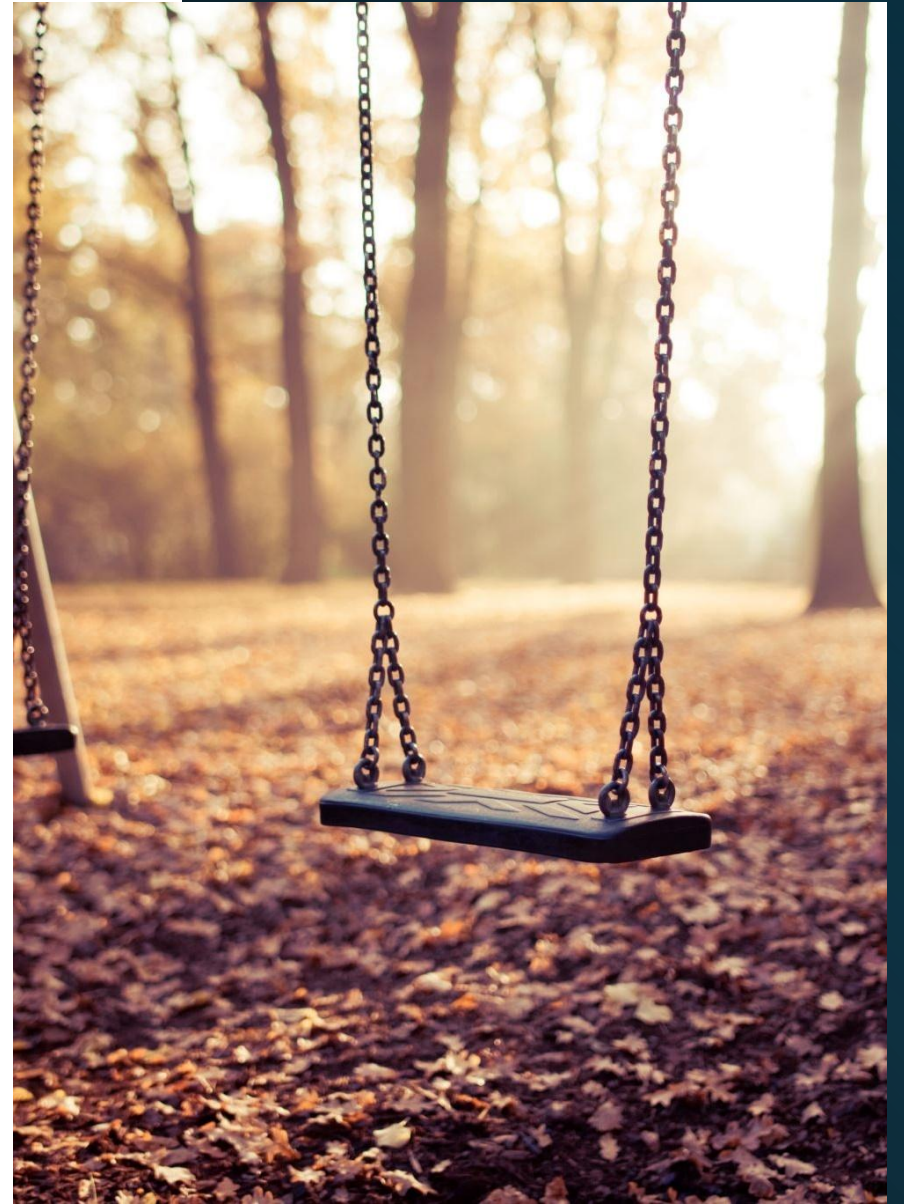
What is PISO?

P Population

I Intervention

S Setting

O Outcome you would like to measure



PISO Example

Does access to parks in cities impact the amount of physical activity of older adults (65+)?

Concept 1 →	Population	Older Adults 65+
Concept 2 →	Intervention	Access to Parks
Concept 3 →	Setting	Cities
Concept 4 →	Outcome	Amount of Physical Activity

What is PS?

P **Population**

S **Situation** (*phenomenon or situation you want to find out more about*)



PS Example

What are the perceptions of individuals aged 35-45 who attend prenatal classes?

Concept 1	→	Population	Individuals aged 35-45
Concept 2	→	Situation	Perceptions of Prenatal Classes

Even More Frameworks

Framework	Components
ECLIPSe (formerly CLIP)	E xpectation, C lient group, L ocation, I mpact, P ractitioner/Professional S ervice
SPICE	S etting, P erspective, I ntervention, C omparison, E valuation
SPIDER*	S ample, P henomenon of I nterest, D esign, E valuation, R esearch type
CIAO	C lient characteristics, I ntervention, A lternate intervention, O utcome C ontext, I nteraction, and O utcome
PEO	P opulation and their problem, E xposure, O utcome and themes
PS	P opulation, S ituation
MIP	M ethodology, I ssues, P articipants
PIE	P atient/Problem/Population, I ntervention/Issue, E ffect/Evaluation
CIMO	C ontext, I ntervention, M echanism, O utcome
PCC	P opulation, C ontext, C omparison

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Pach B, Massarella S, Sharma M. **To PICO or not to PICO: what is the question? Frameworks for developing answerable research questions** [Internet]. Presented at: PHO Grand Rounds. 2016 Jun 7 [cited 2018 Nov 8]; Toronto, ON.

Frameworks by Discipline / Study Type

Framework	Discipline	Type of research
PICO, PICOTT, PICOT, PICOC, PECODR, EPICOT, PO, PS, EPICOT	Various (largely based on clinical settings)	Quantitative
PIPOH	Guidelines	Quantitative
PESICO	Speech Language Pathology	Quantitative
PISCO	Public Health	Qualitative/Mixed methods
ECLIPSE (formerly CLIP)	Health policy & management	Evaluation
Concept mapping	Any	Any
SPIDER, PIE	Social Sciences	Qualitative
CIAO	Social Work	Qualitative/Mixed methods
SPICE	Social Sciences	Mixed methods
PEO, PO, PS	Various	Qualitative
CIMO	Management / organization	Qualitative / Mixed methods
MIP	Medical ethics	Qualitative

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What if I hate frameworks?

Start by using a simple table, pull the main concepts from your question into it:

	Concept 1	Concept 2	Concept 3	Concept 4	Concept 5
Main Concept					



Review

1. Why question development?
2. Tools:
 - a) Generative AI
 - b) Concept Mapping
 - c) Frameworks
 - d) **Your Librarian**



How do we reduce duplication?

When staff engage an SLSP librarian to support a project, research questions may be sent to Ontario Public Health Library Association (OPHLA) members to see if:

- a) another health unit is working on a similar request,
- b) there is potential to build on a previous project, or,
- c) staff may be able to collaborate and share resources.

For an automated list of Ontario Health Unit publications, please visit the [SLSP Homepage](#) - [New Articles](#)

Contact us at <https://www.slsp.ca>

MLHU

Address: 110-355 Wellington St., London,
ON N6A 3N7
Email: library@mlhu.on.ca
Phone: 877-663-5320 ext 2561

SEHU

Address: 221 Portsmouth Ave Kingston,
ON K7M 1V5
Email: library@kflaph.ca
Phone: 800-267-7875 ext 1659

SMDHU

Address: 15 Sperling Dr. Barrie, ON L4M
6K9
Email: hublibrary@smdhu.org
Phone: 877-721-7520 ext 7368

TBDHU

Address: 999 Balmoral St. Thunder Bay,
ON P7B 6E7
Email: dlLibrary@tbdhu.com
Phone: 807-625-5901

Bibliography

1. Ontario Agency for Health Protection and Promotion (Public Health Ontario). Overview of equity informed approaches to evidence synthesis. Toronto, ON: King's Printer for Ontario; 2024.
2. Pach B, Massarella S, Sharma M. To PICO or not to PICO: what is the question? Frameworks for developing answerable research questions [Internet]. Presented at: PHO Grand Rounds. 2016 Jun 7 [cited 2018 Nov 8]; Toronto, ON.
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