Research Question Development Guide

A good research question should be of interest in the scientific community and/or the public, have clinical relevance, further current knowledge in the field compliant with local ethical standards, and should specify the population of interest.

☐ **Perform a systematic literature review. Learn about current trends and technological advances on the topic.**

Knowledge and familiarity with the topic will assist in your question development. This review may include a thorough examination of literature databases and citation indexes for relevant papers and may use statistical techniques to score or rank the relevance of the identified articles.

If your project is designed to examine a therapeutic intervention, you can check applicable systematic reviews in;

- The University of Alberta Library Systematic Review Resource
- The University of Calgary Library Systematic Review Resource
- The Cochrane Library

Some key questions to expand upon include;

1. In this field, what are the important questions?
2. What has already been done/found?
3. What are the areas of greatest need for additional exploration?
4. Does the proposed study contribute to, or fill a gap in existing knowledge?

☐ **Use the FINER criteria in the development of the research question.**

FINER = Feasible, Interesting, Novel, Ethical, Relevant;

Table adapted from http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2912019/

	Criteria	Considerations
F	Feasible	• Affordability (time and money) • Scope • Available technical expertise • Availability/number of subjects
I	Interesting	How exciting the question would be for you, researchers, and the clinical research community?
N	Novel	Does the question extend, confirm or refute previous findings?
E	Ethical	Would the study of this question conform to standards of the applicable research ethics board?
R	Relevant	Relevance to future research, clinical and health policy, and to scientific knowledge.

☐ **Use the PICOT format for your research question.**

PICOT = Population, Intervention, Comparison, Outcome, Time;

Table adapted from http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2912019/

	Criteria	Considerations
P	Population	Availability of subjects to be recruited for the study.
I	Intervention	Treatment that will be provided to the study subjects.
C	Comparison	The group of participants who will be used as a reference or control group for comparison to the treated or test group.
O	Outcome	The result that will be measured to examine the effectiveness of the the intervention (ie. validated outcome measurement tools).
T	Time	Duration of data collection.

☐ **Develop a research hypothesis from the research question**.

Many articles are freely available on-line to help researchers develop research questions including;

- Farrugia, Patricia et al. "Research Questions, Hypotheses and Objectives." *Canadian Journal of Surgery* 53.4 (2010): 278–281. Print.

☐ **Develop clear and well-defined primary and secondary (if needed) objectives.**

☐ **Review your research question to ensure the question and the objectives are answerable, feasible and clinically relevant.**

☐ **Seek careful input from experts, mentors, colleagues and collaborators to refine your research question as this will aid in developing the research question and guide the research study.**

Some key topics to discuss include;

- Does the research question address an unmet need in the field or does the question seem innovative or exciting to researchers, clinicians or patients?
- Review the study primary and secondary objectives.
- Sample size estimation
- Time and resources (funds, people, services, tools) needed for the research
- Study design considerations (type, complexity, relevance, data collection)