

10 Step Guide to Research



THE UNIVERSITY OF BRITISH COLUMBIA

Department of Emergency Medicine

Faculty of Medicine

Introduction

This guide was developed in 2018 to provide a template for UBC Department of Emergency Medicine (DEM) faculty members and trainees, particularly those without prior experience, in the steps, sequence, and resources for carrying out EM research in BC. The guide is based on a similar publication developed in 2002 by the VGH Emergency Department Research Division, and we gratefully acknowledge the permission granted to use and expand upon this work. We hope that this guide will be useful in outlining an organized sequence of approaching a project, identifying local resources, and clarifying where and how the DEM can assist the process.

Even for experienced researchers, projects can take years. Many steps will proceed more slowly than anticipated, while some advance more quickly. At times progress may be made “out of sequence” to what is listed here, or even simultaneously for more than one item. Don’t become discouraged if things become challenging—this happens frequently, solutions are almost always found, and it’s part of the process. [We welcome your feedback on the Guide.](#)

1. Identify the Area of Research Interest

This often arises through exposure to cases, personal areas of interest, or influential mentors. It is frequently helpful to informally speak to colleagues to determine relevance, feasibility, and applicability of your idea. An initial brief literature review can clarify existing knowledge. The project will have the greatest chance of success if the following criteria are met:

- a) You find the topic interesting.
- b) The area (process/condition/outcome) of study is relatively common.
- c) The data is easy to obtain.

2. Review the Literature on the Subject Area

A literature search is essential to determine where knowledge gaps exist, build on existing work, and clarify where you want to put your energy. The use of [PubMed](#), [Medline](#), [Ovid](#), or other databases to search the literature is key. The [BC College of Physicians and Surgeons](#) or a medical librarian can assist you. The [UBC Library](#) has access to almost every English language medical publication.

Local Resources

[VCHRI Research Education Program Workshops](#)

One-on-One or Group Inservicing, Tour of Library Services - [Dean Giustini, Biomedical Librarian](#), encourages people to contact him to learn how to do literature reviews.

3. Initiate Informal Discussion with a Mentor and the UBC DEM Research Division

Approach potential mentors as early as possible. Even if they cannot help advance your project directly, they will likely be able to provide information or further contacts to facilitate your project. Some people may already have a mentor in mind—this person does not need to be at UBC or in emergency medicine, but they should be able to assist you in the next years as you follow through on your project. It’s never too early to informally mention your idea or area of Research to the DEM Research Director or Associate Research Director, and helpful guidance often arises from doing so. Broadening things out to assemble other key individuals (the “right team” for the project) can also be helpful early in the process. Members of the DEM research committee, [site research directors](#), and other [DEM researchers](#) can all be important contacts.

4. Formulate an Idea and Develop a Tight Research Question

Your development of a clear research question is a critical aspect of the process. Doing so will lead you to the correct research design, an appropriate sample size, and valid results. It may take some time to develop a clear question. When developing the question, keep in mind that data collection can sometimes be a limiting step in your project. For example, if you determine you need to access to an existing database (government data, for example) you may need special permission from regulatory authorities. If your question leads to the need to conduct a physician survey, you’ll

need to amass a sufficient representative sample. In contrast, if your question leads to the need to perform a prospective study, you may need research assistants to enroll participants (often patients) to collect data.

5. Finalize Study Proposal and have your Proposal reviewed internally by the DEM

Once you (and your mentor, if applicable) have an idea, you can discuss it with the DEM research director. It is an excellent idea to present your proposal at DEM monthly [Research in Progress Rounds](#). This allows peer review, identifies potentially correctable flaws at an early stage, and provides helpful guidance on any outstanding issues or challenges. Your project may require special support from individuals like statisticians and methodology experts. It is a good idea to involve such consultants early in the process, and the DEM Research Division can help identify where to go if this is needed.

6. Develop Protocol, Budget, and Timeline

You and your team should now be in a position to formalize and finalize your protocol. The DEM Research Division can provide examples or guidance on this. This is also the time to develop a budget if necessary and consider sources of funding if this is required. Costs, if any, vary with the nature of the projects. For example, a multi-center prospective study involving research assistants will have a larger budget than a chart review.

7. Identify Opportunities for Grant and Scholarship Funding

A number of possibilities exist here, from local hospital or health authority support to the Canadian Association of Emergency Physicians (CAEP) Research Awards, to traditional competitive grant funding. The DEM Research Division can provide guidance when pursuing the optimal source. Some local resources are provided below.

Local Grant Contact Person

[Manager, Research Grant Development](#)

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Local Grant Resources

[VCHRI Internal Competitions](#)

8. Submit Study for Research Ethics Board (REB) Approval

After you have completed the prior steps, REB approval is usually not too hard. The appropriate REB to apply to will vary with your location. It can be a good idea to telephone or meet the lead of your REB prior to submission to discuss any issues you might be concerned about. A few minutes of effort can save months of revisions.

A) UBC Ethics

[Tutorials on Ethics Submission](#)

UBC Clinical Research Ethics Board

604-875-4111 ext 68917

creb.rise@ors.ubc.ca

Behavioral Research

UBC Behavioural Research Ethics Board

604-827-5114

nadia.rad@ors.ubc.ca

B) Obtaining Approval to Conduct Research at Vancouver Coastal Health

[VCHRI Operational Approval of Research](#)

Wylo Kayle, Administrative Assistant, Clinical Trials Administration

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C) Patient Engagement

The BC SUPPORT (Support for People and Patient-Oriented Research and Trials) Unit provides services to researchers, patients, health care providers and health system decision makers, and facilitates initiatives identified as provincial priorities. The SUPPORT Unit regional centers are formal partnerships between a regional health authority and the corresponding university in that region.

9. Register and Commence Study

If applicable, clinical research should be formally registered before the study launch. This advance registration is required for publication by most major journals, and any changes to your protocol or processes will require addendums being submitted. Once you have REB approval, the study is registered, and all your data collection instruments are in place, you can start to collect data. Tracking your study progress, including an interim review of data if this is part of your design, is extremely important to be sure everything is proceeding as planned. Sometimes an adjustment of your protocol is needed, and such a change will need discussion and support of the entire study team. Ensure that you continue to have appropriate methodological and statistical support throughout the data collection period.

10. Communicate Findings

Many local opportunities across the DEM for communication of study findings including departmental rounds, and UBC EM Research Day, and through the BC Emergency Medicine Network. Once your study is completed, consider submitting an abstract to conferences such as CAEP. Your mentor can be a key asset in developing and abstract and composing a manuscript. Choose your conference (for abstracts) and journal (for papers) carefully. Most conferences and journals will have guides to help you identify whether your submission is appropriate. It is particularly important to follow formatting requirements.

UBC Department of Emergency Medicine Contact List

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DEM Research Committee

Dr. Riyad Abu-Laban (DEM Research Director)

Dr. Frank Scheuermeyer (DEM Associate Research Director)

Ms. Carolyn McKinnon (DEM Administrative Lead)

Dr. Jim Christenson (DEM Head)

Dr. Gary Andolfatto (Lion's Gate Hospital ED Research Director)

Dr. Rob Stenstrom (St. Paul's Hospital ED Research Director)

Dr. Floyd Bessemer (Prince George Regional Hospital ED Research Director)

Dr. Jeff Brubacher (VGH ED Research Director)

Dr. Devin Harris (KGH ED Research Director)

Dr. Neil Barclay (Fraser Health Academic Lead)

Vacant: (Vancouver Island representative)