

MACORTHO RESEARCH ELECTIVE GOALS AND OBJECTIVES

Introduction:

The successful application of evidence-based medicine to clinical practice requires research as an integral part of the orthopedic surgeon's training. As such, involvement in a research project is an important educational component of the residency training program.

It is the requirement of all residents completing the McMaster Orthopedic Surgery Residency program to produce one publication-ready manuscript by the end of residency training.

General Expectations

1. All residents are expected to complete one high-quality research project during the course of their training. Completion includes, at a minimum, presentation of results at one of the annual Resident Research Days.
2. Submission of abstracts for presentation at a national/international conference and submission of manuscripts for publication in a peer-reviewed journal are encouraged.
3. Works-in-progress (presentation of proposed methodology) at Research Day are welcomed, but do not fulfill the research requirements for a completed project.
4. Residents must be able to a) justify the rationale for the project; b) present a sound methodological approach; c) present data that answers the scientific question; and d) interpret the results and explain potential biases/limitations of their study.
5. Collaboration with other residents is encouraged. However, only one resident per project will be given credit for completing the program requirements. Exceptions can be made for large/multi-faceted projects, but approval must be sought from the Research Director prior to initiation of the project.
6. Case reports will not be accepted as research projects.
7. Systematic reviews/meta-analyses/guideline development are accepted research projects, provided universally accepted standards are followed (PRISMA, QUORUM, etc.). However, residents are encouraged to expand their project scope beyond systematic reviews, particularly of low-level evidence.

Application for Research Block Elective and Graduate Studies

Residents must submit a one page request for a research block elective. This must include specific goals and objectives for work to be completed during the time, justification for the amount of time requested, and how the research undertaken will support future career goals and objectives. A brief meeting with the Research Director will be conducted at the end of the research block to ensure that the goals and objectives were met. In some cases, a final one-page report summarizing the work achieved will be requested by the Research Director. Residents interested in obtaining a graduate degree must discuss a plan with the Program Director and the Research Director. Residents in good standing in the Program will be supported in this endeavour.

CanMeds Roles Related to Research:

1. **Medical Expert**
The trainee will demonstrate proficiency in:
 - Basic epidemiology

- Clinical study design
 - Evaluation of clinical practice
- 2. Communicator**

The trainee will demonstrate skill in conveying the objectives of the research project, the evidence supporting the proposal and the results of the study. Written and oral communication will be assessed by review of the final manuscript and by the assessment of the oral presentation at Research Day.
 - 3. Collaborator**

The trainee will demonstrate ability to work with team members to conduct the study or implement the change in practice.
 - 4. Manager**

The trainee will develop skills required to evaluate clinical practice and to evaluate the resources and barriers for a successful research project. The trainee will demonstrate skills in time management when working on research projects while also applying themselves to their clinical duties.
 - 5. Health Advocate**

The trainee will demonstrate skills required to optimize the delivery of clinically effective care.
 - 6. Scholar**

The trainee will develop skills to critically appraise clinical trial proposals, best evidence and knowledge translation techniques.
 - 7. Professional**

The trainee will demonstrate ethical and sound scientific judgment with respect to the conduct of research. The trainee will demonstrate an understanding of research integrity.
 - 8. Technical Skills**

The trainee will show proficiency in:

 - Critical appraisal
 - Preparation of a written proposal for each project
 - Preparation of written reports (abstracts, publications and internal reports) describing the results of the project

November 2022