Obstetrics & Gynaecology
UNIVERSITY OF TORONTO

Research TIPs for Residents

1. What are the steps of a research project?

1) **Problem/Obstacle/Idea**: The first step should be to express the idea in some reasonable, manageable form, even if preliminary.
2) **Hypothesis**: based upon previous experiences (of the resident, Department, or others in the literature), a preliminary proposition about the relationship between two or more variables is formulated, i.e., "If such and such occur, then so-and-so result."
3) **Design of the Approach/Test/Experiment**: If the problem is well stated, the hypothesis adequately formulated and the implications of the hypothesis carefully deduced — designing an empirical test to address the hypothesis should be evident. This step will involve identifying and securing needed resources, precisely defining experimental procedures, and consideration of appropriate statistical analysis of data that will be collected. Feasibility or pilot studies may be required. A detailed study proposal and protocol should be developed.
4) **Execution**: Following research ethics board approval, the next step is execution of the study. Meticulous recording of the data is essential.
5) **Interpretation/Conclusion**:
   On the basis of the research evidence, the hypothesis is either accepted or rejected. Furthermore, the data gathered should permit some conclusions regarding the operational implications of the hypothesis. Literature searches alone, however systematically done, do not denote research. On the other hand, a complete literature search of various studies addressing a particular problem together with a thorough data analysis of those studies, i.e., using techniques of meta-analysis — could be considered research.

2. Research *MENTOR*

Working with a research mentor can be invaluable. PGY1s can be assigned a research mentor on request. The mentor acts as a faculty contact for residents to help ensure that they do not experience unnecessary delays in finding a supervisory team to get their research underway. For an overview of the expectations/framework for working with a research mentor, see 10.3 under Resources.

3. Your Research *SUPERVISOR*

- Finding a research supervisor is one of the most important steps.
- The Research Supervisor must hold a University of Toronto appointment, and have no family relationships with the trainee..
- Often, you have an idea and approach someone who is interested in that area, or your mentor suggests someone, or you have a supervisor in mind, and you develop a question together.
- Speak to more senior residents about who they have worked with in the past.
- It is OK to ask a potential supervisor about the number of projects they have supervised, or are currently supervising/undertaking.
- Review research resources on OBGYN website: http://www.obgyn.utoronto.ca/research.htm.
- Read the "FAQ for Research Supervisors" (PORTAL) in advance of a first meeting with a potential supervisor – also, consider emailing the FAQ to the supervisor, or take with you to discuss.

4. Developing your Research Question

- Review the "Research Compendium for Residents" – available at http://www.obgyn.utoronto.ca/research.htm
- To get ideas, speak to other residents – they may have had someone approach them, or had some ideas after they committed to their projects.
- Review the Department Annual Research Day agenda from prior years.
- Participate in the Research Proposal Review sessions following AHD.

5. Research Requirements Checklist

- See the "**Research Requirements**" checklist document (posted on PORTAL and ObGyn website).
- This is a key document for residents; it outlines what is needed for achieving research Level 1 and Level 2.

6. Mapping your Timeline

It is important to start early, allot your time, and plan efficiently – see 10.4 under Resources for an example of what to do by when. Also, try to assess specific "task" time, e.g., if doing a chart review, assess how long it would take you to review one chart and multiply by the total number of charts you want to review, or if doing a survey, time per survey…

7. Funding and costs

- Consider your budget (remember printing costs for surveys/posters) and discuss with your supervisor:
  –Poster approximate cost – Laminated $150; Non-laminated $70.
  –Printing – hospital libraries will often allow you to print if you are registered at that site.
  –Ask your supervisor – they may have a printer code that allows you to copy/print large numbers.
  –Posters printed on fabric are an attractive option for those presenting at distant conferences. These are available at the University of Toronto Printers and can be directly delivered to you. For more information see www.utposter.com
- Your supervisor may have funding – ask about it.
- Do not forget about resident conference funding through the Program - you are eligible for up to $2000 to attend a conference if you are presenting, and $1000 for a conference if NOT presenting -- See "Resident Conference/Course Funding Guidelines" on PORTAL.
- FedEx/Kinko's offers a discount for hospital employees (remember to show your ID badge)
  –505 University Ave - Phone 416 979 8447
- Research grants – consider applying for grants. See "Funding" under 10.2 Resources.

8. Statistical Analysis

- Statisticians may be available through the Department or clinical site – ask your Research Supervisor.
- **Meet with a statistician BEFORE collecting data,** to ensure your analysis is feasible and affordable.

9. Evaluation

- Do not forget that you are being evaluated by your research supervisor over the course of your residency (not just the research block). See Research ITER #11353.
- The Residency Program Director reviews research progress at each Biannual meeting.

10. RESOURCES

10.1 Faculty Research Interests

"Research Compendium for Residents" – http://www.obgyn.utoronto.ca/research.htm

10.2 FUNDING: Sources of funding for resident research

This[2] should be considered in the early stages of project development.

1 Hospital ObGyn (and Divisional) practice plans --These typically offer small (<$10,000) start-up grants annually, and are very supportive of trainees, provided that the hospital is formally recognized in any presentation or publication. Know what your site has to offer.

2 University of Toronto

3 SOGC / Canadian Foundation for Women's Health

4 PSI. The Physicians' Services Inc. Foundation has at least two grant submission deadlines/year with a specific category for resident research.

5 APOG President's Grant for Resident Research

10.3 Framework for Research-Mentor Meetings

Reference: letter to research mentors, Sept 13, 2011:

"Mentorship includes a minimum of three meetings with the PGY1 in the first 18 months of training and then as needed. The mentor initiates the first meeting with the resident.

1. At the **first meeting**, you (the mentor) would:
   a. Introduce the resident to research in which you are currently involved
   b. Assess the resident's research experience/aptitude and interests. (Many residents at this point in their training will say things such as, "I don't have any idea" or "I'm interested in Gyne Onc or preterm labour".)
   c. Introduce the resident to colleagues whose research area may be more appropriate for the resident's specific interest. The *Research Compendium* will be helpful in this regard (available at http://www.obgyn.utoronto.ca/research.htm.)
   d. Set goals for the next meeting 3-6 months later.

2. At the **second meeting**, we expect the resident to have defined an area of interest. Discussion might focus on:
   a. Assessment of the quality of the literature review
   b. How to formulate a research question
   c. Issues of feasibility: is funding necessary? Is the time allotment realistic? Sample size and recruitment issues (Generally, we would advise residents not to undertake a project requiring a major funding agency.)
   d. Finding a research supervisor: This involves ensuring that the resident has an appropriate research supervisor; making introductions; and providing expert support to the chosen research supervisor, if necessary.
   e. Statistical analysis: The most common help a trainee needs is with statistical analysis, and defining sample size *a priori*.
   f. The timing of the resident's research proposal presentation at Academic Half-day.

3. The **third meeting** will not have a prescribed agenda. It will be to review progress to date."

10.4 Research Project Timeline

Name of Resident: _____

Name of Research Supervisor: _____

Project Working Title: _____

_____

Orientation Meeting Date: _____

An orientation meeting should be scheduled to review the following:

Time Lines	Date Set	Date Completed
1. hypothesis generation	_____	_____
2. literature review	_____	_____
3. study design	_____	_____
4. REB submission/approval	_____	_____
5. study implementation	_____	_____
6. data collection	_____	_____
7. data analysis	_____	_____
8. oral presentation complete	_____	_____
9. manuscript preparation/submission	_____	_____