Supervisor & Project Information Form

Please complete and return via email ONLY to gdip.hres@utoronto.ca by ***Monday September 30, 2019***

Supervisor Information

Name: Donald Redelmeier	**Email:** dar@ices.on.ca
SGS Department: School of Public Health	**Field of Research:** Hlth Pol Mgmt & Eval
Research Institution affiliation: Sunnybrook	**Location of Work:** Inst Clin Eval Sci (ICES)
Student contact time (number of hours per week YOU are available to the student): 2 hours per week (plus email and phone)	

Project Information

TITLE: Medical Decision Science

DESCRIPTION (MAX 500 WORDS):

My group conducts an eclectic program of research focusing on how people reason, formulate judgments, and make decisions. We have conducted multiple studies on errors in decision making with particular attention to general internal medicine. A secondary theme examines motor vehicle trauma, a domain where mistakes in reasoning can have irreparable consequences. The goal is to learn from mistakes to improve daily medical care.

Most projects are based on statistical methods and other dry-bench methodology. Recent projects with medical students explored physician warnings for unfit drivers (Chris Yarnell), traffic crashes during pregnancy (Sharon May), organ donation after traumatic brain injury (Jason Woodfine), optical illusions while driving (Sheharyar Raza), and how past concussions

contributing to future dementia (Fizza Manzoor). Future projects depend on the interests of the student and ongoing priorities.

The specific project for this student examines the role of online patient portals for transmitting information and reducing potential error. We choose this project because online medical records are a new idea for empowering patient care by communicating health data in a reliable and secure manner. Sunnybrook created the MyChart system a decade ago as a patient portal allowing access to online medical records.

We theorize that online medical records may enhance care, lessen confusion, and reduce minor emergency departments visits. Others hypothesize that online medical records have unintended downsides such as increasing patient anxiety from poorly timed bad news or worries over trivial blood test deviations. The purpose of this research is to test the study question: "Does patient access to Sunnybrook MyChart increase or decrease minor emergency department visits throughout Ontario?"

The methodology relies on a self-matched BigData analysis of emergency department visit rates for each patient before and after activating MyChart. The primary outcome is the subsequent rate of emergency department visits, distinguishing minor visits (primary end-point) and major visits (tracer end-point). Each person is his or her own control. We anticipate a sample size of 100,000 patients for sufficient power to identify an 8% increase or decrease in subsequent minor emergency visits.

The null hypothesis is that access to an online patient portal leads to no difference in subsequent minor emergency department visits. We hypothesize, in contrast, that access to an online patient portal leads to a significant reduction in minor emergency department visits. If true, the findings might increase uptake at Sunnybrook as well as encourage more consideration of online patient portals for patients at other hospitals throughout Ontario.

If human subjects are involved, have the appropriate Research Ethics Board approvals been obtained?

☐Yes

Do you expect this work will be published within the 20 months?

☐Yes

Student Roles & Responsibilities

The student will report directly to me. The student will be involved in all parts of the research including conception, design, literature review, ethics submissions, data collection, results interpretation, manuscript preparation, and scientific peer review. The student will also integrate with the full academic group, attend seminars, and give feedback to others on other projects. Of course, the student is welcome to interact with additional trainees, statisticians, and faculty at ICES.

The overall project for the student requires the full 20 months for completion (perhaps a bit longer due to vagaries of scientific peer-review medical journals). The project will be judged complete on publication of an article and addressing follow-up knowledge translation activities (scientific presentations, letters-to-the-editor, media interviews, academic dialogue, community outreach). Past students have seemed to enjoy their work here at ICES and I hope you will too.