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Alexiadis Brown (on Dr. Steeves’ retirement): Evaluating Dalhousie University’s Distributed Medical Training Programs in the Maritimes: What are the Outcomes?

**Introduction:** Dalhousie University has expended its undergraduate and post-graduate medical training over the last decade; however, it is not clear if this ‘local’ training also enhances settlement of these physicians in the Maritimes. We are submitting an application for funding to help prepare a national research grant which will be submitted to the Partnership for Health System Improvement (PHSI) Canadian Institutes of Health Research (CIHR) competition in the fall of 2015. There will be five key objectives of this national grant: 1) to understand the key factors influencing career (e.g., speciality) and practice location decisions of Dalhousie University Medical School graduates (2006-2014); 2) to understand the key factors that influence graduates to choose family medicine as a speciality; 3) to compare and contrast those choosing family medicine with those choosing other specialties on select socio-demographic characteristics; 4) to understand why family medicine residents/physicians choose particular practice locations (e.g., why they move to another province, why they practice in a rural location); and 5) to utilize the empirical data gleaned from 1-4 to inform a recruitment strategy for family physicians in the Maritimes.

**Objective:** To apply for a CIHR/(PHSI) grant which would allow for the effective evaluation of long term outcomes associated with distributed undergraduate and postgraduate programs and support evidence informed decision making in medical education and health human resource planning.

The living lab grant will allow this group of researchers to engage relevant stakeholders to be part of the CIHR/PHSI application. An invitation will be sent to government decision makers from NS, NB as well as medical school administrators to participate in the development of the CIHR/PHSI grant. Early engagement of key stakeholders will inform the PHSI grant objectives and to ensure its relevance to these stakeholders. As well, funding will be used to hire a research co-ordinator who will provide support in the grant writing process.

The funding from Dalhousie Faculty of Medicine’s Living Lab Grant is needed to prepare this national grant and ensure that the proposal is nationally competitive and thus has a high probability of being funded. More specifically, the Dalhousie Faculty of Medicine funding is needed to hire a research co-ordinator who will conduct an in-depth literature review for the grant proposal, will assist in organizing a workshop for all the proposal stakeholders (researchers and policy makers to develop the proposal in detail), will assist with co-ordinating the research close cooperation between policy makers and stakeholders team meetings in the writing of the proposal, and assist with preparing Common Curriculum Vita (CCVs) as well as other tasks related in the preparation of a commutative national research proposal. It is critical to engage a variety of key stakeholders in proposal development because the nature of the PHSI competition requires who will utilize the evidence produced from this study.
Alexiadis Brown: Understanding the fidelity of Dalhousie LIC programs: Are we fulfilling our social accountability objectives?

The goal of this study is to explore whether the LIC model of education at Dalhousie has been implemented as intended. Given the LIC program was implemented based on key principles and with specific goals in mind, two of which relate to community engagement, this study will explore specifically how these goals are being fulfilled.

**Research Questions**

- What are the perceptions of medical students on the role of LIC in meeting the social accountability mandate for Dalhousie Medicine?
- What are the experiences of community organizations participating in LIC with Dalhousie Medicine?

**Research Objectives**

- Explore students’ views concerning the impact of LIC on their experiences in community engagement
- Describe how community organizations are involved in decision making, policy development and education within the LIC programs
- Provide insights of ways to enhance engagement with stakeholders and students

Beatty: Critical Thinking Assessment in Dalhousie Final Year Medical Undergraduates in 2015

The purpose of the study is to establish baseline data on the class of 2015 who were the last class of Dalhousie medical undergraduates who were not exposed to the new CT Program. The ultimate goal is to evaluate outcomes of the new program in successive undergraduate classes:

- By comparing these data with future cohorts of Dalhousie medical undergraduates, we hope to be able to demonstrate that the present CT Program results in a significant change in critical thinking.
- We anticipate that improvements in CT will translate into improvements in clinical reasoning and hope to be able to demonstrate this in additional studies.
- We will examine the results of the sub-group analysis to determine if there are any potential areas of critical thinking that might be targeted by future educational interventions, especially in relation to medical decision making.
Bergin: Understanding how professional boundaries may influence the learning experience

The goal of this study is to explore preceptors’ and family medicine residents’ understanding of professional boundaries, how they maintain professional boundaries with each other in both longitudinal and traditional block-based training sites, and how doing so enhances or detracts from the residents’ learning environment. Evaluation questions are:

- How are professional boundaries between faculty and residents defined?
- What are the experiences of faculty and family medicine residents in navigating professional and personal boundaries in both traditional block-based and longitudinal training sites?
- What effects do these experiences have on teaching, learning and the learning environment?
- What effects do these experiences have on patient care?

Blake: Adolescents Feedback: Using the Structured Communication Adolescent Guide (SCAG) in Continuing Professional Development

The purpose of this study is to evaluate family physicians’ adolescent interviewing skills by using a validated tool called the Structured Communication Adolescent Guide (SCAG) and to further investigate if regular feedback improves family physicians’ communication skills with adolescents.

Bosma: Remediation in Postgraduate Medical Education: An Environmental Scan

A remediation task force was struck in February 2015 to explore current perceptions, practices, and challenges around remediation at Dalhousie; and to provide concrete suggestions for improvement of the remediation process.

Remediation has long been identified as a priority within postgraduate medical education at Dalhousie University. With funding from a 2013-2014 Living Lab grant, a preliminary file review of remediations that occurred between 2005-2013 has been conducted. This provided important contextual information, describing the rates, types of learner deficiencies, and outcomes of remediation. However, it did not identify or explain remediation strategies and processes currently in use, nor highlight best practices in the area of remediation such that improvements could be implemented. As such, further study is required.

In this study, we will address the following three questions:
1. How can we best identify specific learner deficiencies?
2. What are the best known strategies for remediating different types of learner deficiencies?
3. What remediation strategies (policies and processes) are in place at medical schools across Canada?
4. How is the process of remediation experienced by faculty, administration, and residents and what are their perceptions of the barriers and facilitators to successful remediation?

Connors: Using video recordings to improve residents’ teaching skills.

**Question:** Does a medical education intervention that involves video recording a resident’s teaching session to allow viewing of the recording and self-reflection and a formal feedback session improve the resident’s self-evaluation of their teaching skills and the audience’s evaluation?

**Brief Description:** Internal medicine residents at Dalhousie University seldom receive feedback regarding their teaching skills despite delivering the bulk of mandatory teaching sessions on the Medical Teaching Unit (MTU). The purpose of this study is to determine if video recording of a resident’s teaching, followed by formal feedback and reflective exercises improve a resident’s teaching skills. The intervention will include video recording of senior medicine residents during one of their initial teaching sessions of the block and having the audience (made up of junior residents, clinical clerks, and faculty) fill out an evaluation form. The resident will receive a formal feedback session regarding their teaching skills, including discussion on the resident’s self-reflections after watching their video. At a subsequent teaching session by the resident, the audience will complete a second evaluation form. The resident will also complete a reflective exercise regarding the utility of this intervention and a final self-evaluation of their teaching skills.

Epstein: A systematic review of best practices of resident interviews & resident selection for Internal Medicine

Interviewing prospective medical school graduates for post-graduate residency training positions can be time-consuming and expensive (for the interviewee and the program alike) and the process frequently is not evidence based. In this review, we intend to evaluate the current post-graduate interviewing practices by the Internal Medicine program at Dalhousie University with comparison to current practices from the literature.

To complete this study we will summarize our current process. We then propose a scoping review of the literature around best practices in resident interviewing. We intend to summarize this review, and conclude by making suggestions to improve the efficiency and utility of the interview.

Evans: Enhancing and Assessing the Effectiveness of PIER 2 Communication Skills Training on Explanation, Planning & Shared Decision-Making in the Medical Interview
Brief Description of Research/Evaluation Study
This program development and evaluation study seeks to enhance and assess the effectiveness of PIER 2 communication skills training related to “explanation, planning and shared decision-making in the medical interview” for Med 3 students. Specifically, the study will augment this training by adding new elements and assessing medical students’ perceptions of this blended learning initiative that includes:

1) engagement in a newly developed experiential, interactive, pre-session e-learning module on explanation, planning and shared decision-making; 2) structured teaching with expert physician faculty; 3) skills practice with simulated patients enacting four patient cases; 4) case-based feedback from simulated patients and peers based on the EPSCALE Assessment Guide; and, 5) a four-month follow-up survey of Med 3 students’ perceptions of the usefulness and applicability of the session in preparing them for clinical encounters with patients. This research/evaluation study aligns with the Living Lab criteria of PIERS transitions and the extent to which they consolidate student learning in preparation for their next phase of clinical learning (p8, Living Lab Research Fund Call for Proposals).

Study Objectives
The objectives of this program development/evaluation study are:

1. To develop and assess the effectiveness of a new communication skills interactive e-learning module as a supplement to the PIER 2 session focused on “explanation, planning, and shared decision-making” in the medical interview.

2. To assess learners’ perceptions of the effectiveness/utility of the EPSCALE guide (a validated communication skills instrument for explanation and planning) as an assessment and learning tool.

3. To determine, through the use of a follow up student survey, how well the PIER 2 communication skills teaching session on “explanation, planning and shared decision-making in the medical interview” prepared learners as they transition from the pre-clinical to clinical curriculum and engage in encounters with a variety of patients across clinical areas.

4. To elicit, through a follow up survey, clinical clerks’ actual experience of engaging in explanation and planning discussions with patients, including the topics and purpose of these discussions with patients – information which will better inform case development for the PIER 4 Communication Skills session.

Evans: Entrustment in the Operating Room: An Exploration of the Intraoperative Dynamic Between Surgery Residents and Surgeons

Research Purpose
To explore the intraoperative dynamic that exists between cardiac surgery residents and surgeons and how this dynamic affects a surgeon’s decision to allow a resident to perform part or all an operation.

Research Questions
What factors influence entrustment in the operating room and is there a shared perspective among surgeons and residents?

**Objectives**

1. Identify surgeons’ perceptions of those factors that determine their trust in a resident’s surgical competency.
2. Identify how perceptions of competency impact entrustment.
3. Identify residents’ perceptions of those factors they perceive to influence a surgeon’s trust in their operative ability.
4. Identify factors that could inform resident education and enhance a resident’s surgical preparation.
5. Inform faculty development with surgeons to enhance learner preparedness.

**Description**

This is an interpretive phenomenology study that will attempt to understand the intraoperative dynamic that exists between residents and surgeons and how this dynamic affects the surgeon’s decision to allow a resident to perform part or all an operation. It is a study aboutentrustment in the operating room. This phenomenon is dependent on both surgeons and residents and as such, we will interview both groups in an attempt to better understand and describe this relationship dynamic.

**Finkle: Teaching and Assessing the Communicator Role in the Postgraduate Clinical Environment at Dalhousie**

How is the CANMEDs Communicator Role currently being taught and assessed for Dalhousie University Residents?

Are our current methods of delivery and assessment sufficient for the Competency By Design framework?

**Garnier: On the road to CBME: Introducing a Narrative Assessment Tool for Diagnostic Radiology Faculty**

**Research Question:** Will the introduction of a narrative evaluation tool with formative feedback linked to CanMEDS competencies, used daily during resident diagnostic imaging rotations, assist faculty in giving constructive, timely feedback to learners? This question is important to answer as Diagnostic Radiology looks to transition to a Competency-based medical Education (CBME) curriculum in 2020, in which faculty will need to frequently provide narrative feedback on resident performance.

**Objectives:**

1. Introduce a formative feedback form linked to CanMEDS competencies that faculty will use to give residents frequent narrative feedback.
2. Determine whether or not the use of this tool assists faculty in providing regular narrative feedback to learners.
3. Determine whether or not the use of this tool enhances faculty comfort level with giving constructive feedback.

4. Revise the form based on our findings so it can be introduced to the remaining clinical sections in our department.

The feedback form will be incorporated into the clinical day and will allow for the evaluation of resident performance on actual clinical work in real time. The supervising faculty member will choose one patient case to review with the resident daily. Prior to reviewing the case, faculty will note one to four key features of the case that a resident at that current level (ie. PGY1, 2, 3, 4, or 5) must get. They will also identify one to four features of the case that the resident at that current level should get and note these items on the form. The faculty member will then ask the resident to review and present the case to them. Upon completion of the review, faculty will note which “Must Gets” and “Should Gets” were covered by the resident on the form and then determine whether or not the resident has passed the case. This information will then immediately be reviewed in person with the resident, allowing for discussion. With the help of a Research Assistant we will modify the form to include “Must Gets” and “Should Gets” from CanMEDS competencies.

Hayden: Research in Medicine (RIM) MicroResearch Pilot Project:
Helping support a culture of research in academic clinical practice

This project will share research knowledge and methods in an innovative way to improve evidence-informed clinical decision-making. The objective of this project is to implement and explore the feasibility of using novel teaching and mentoring in the new Dalhousie undergraduate medical education ‘Research in Medicine’ (RIM) Program to help support a culture of inquiry and research use in academic clinical practice. As a novel pilot initiative within the Dalhousie Class of 2018 Research in Medicine Unit, four medical students and one MSc student from the Department of Community Health & Epidemiology will be conducting individual, synergistic research projects all related to improving management of LBP in the ED setting. This approach is known as MicroResearch. Potential benefits of this collaborative research pilot within the RIM program include improved outcomes, efficient use of currently available resources, further engagement of clinical faculty to build local collaborations and capacity, and synergistic objectives with other local initiatives.

The specific objectives/outcomes of this Living Labs project are to:

1. Appropriately modify the MicroResearch concept for use in Dalhousie’s undergraduate medical education environment.
2. Develop materials and processes, while providing medical students with training and mentoring in a scholarly concentration project.
3. Provide students with a model for their potential collaborative involvement in clinical research as part of their future careers.
4. Evaluate the feasibility of this enhanced collaborative training model embedded within the new Dalhousie RIM Program.
Kyte: An exploration of student perceptions of evaluation in undergraduate medical education.

Program evaluation is an integral part of medical education. Evaluation of the medical program is essential to meet accreditation standards and ensure continuous quality improvement. Despite this, there is little evidence regarding student perceptions about the purpose and consequences of evaluations. At Dalhousie, students in all four years of the medical program are asked to complete numerous evaluations of their education experience. MED I and II students are asked to complete unit, case, and tutor evaluations for each block unit – Foundations, Host Defense, etc. They are also asked to complete unit, case and tutor evaluations for each unit as part of the professional competencies and skilled clinician curriculum. MED III students are asked to complete rotation, seminar, preceptor, resident, and unit evaluation for each of their four rotation units. The Undergraduate Medical Education (UGME) office has recently updated our evaluation instruments. The aim of this study is to better understand student perceptions of these evaluations in order to better interpret the results. It is also hoped that a better understanding of how students view our evaluations will ultimately increase participation which has been falling in recent years.

The specific research questions that will be addressed are:

1. What do medical students think is the purpose of evaluation?
2. What are the perceptions of medical students regarding the evaluation instruments currently used at Dalhousie?
3. What are the perceptions of medical students regarding the evaluation processes currently used at Dalhousie?
4. How do students arrive at an overall course rating?
5. What consequences do students think should result from the evaluations?
6. How do students think the results should be disseminated?
7. Do students wish to lead some evaluation activities?

This study will use qualitative techniques to assess student perceptions of evaluation in the undergraduate medical program. Separate focus groups will be held with students in all years of the undergraduate medical program. This will allow for comparison of perceptions among students of various years.

LeBlanc: Choosing Wisely: Continuing Professional Development

Choosing Wisely originated as an American Board of Internal Medicine initiative to encourage physicians to reduce unnecessary and potentially harmful medical interventions. There are currently 102 Choosing Wisely recommendations. While these recommendations emphasize clinical knowledge, the implementation of these messages will require specialized skills in critical thinking and communication. We will develop and evaluate a novel simulated patient intervention entitled “Try, Try, Apply”, for Acute Coronary Syndrome – a Choosing Wisely recommendation – and evaluate its impact on learner’s communication skills for Choosing Wisely. This program includes a flipped classroom model and simulated patient encounters for practicing physicians.
Living Laboratory Grant – 2015-16: 
Short Descriptions of Funded Research

Research objectives:

- To assess and compare the effectiveness of instructional methods on medical learners’ communication skills for Choosing Wisely
- To explore the characteristics of high and low performers
- To explore changes in practice and barriers and enablers to change in Choosing Wisely and,
- To document transferability of acquired skills to other clinical presentations after having completed the Try, Try, Apply program.

Research questions:

1. What is the impact of a multifaceted online module for Choosing Wisely on medical learners’ communication skills? (pre/post survey)
2. What is the impact of a flipped classroom approach (e-module, followed by a simulation with feedback) compared to a simulation with feedback only (no e-module) on learner’s communication skills? (communication skills measure)
3. What are the characteristics of high and low performers on a Choosing Wisely simulation? (comparison using survey, communication skills measure)
4. What are practicing physician’s changes in practice and what are the barriers and enablers encountered in achieving these changes following the Try, Try, Apply program? (follow-up survey, interviews)

MacLeod: Distributed Medical Education and Professional Identity

Using a sociomaterial theoretical frame and qualitative methods, our objective is to explore social, contextual and material influences on the development of professional identity in the distributed learning program in the Faculty of Medicine at Dalhousie University. We will focus on the 2015/16 Med II class which is divided into three groups: those based at the Halifax NS campus, those based at the Saint John NB, and those participating in Longitudinal Integrated Clerkships in community settings.

Our research question is: How do the social, material and contextual differences of communities influence the concept and/or development of professional identity?

In the long term, we hope this exploratory study will provide the basis for a future proposal to be submitted to the Social Science and Humanities Research Council of Canada exploring professional identity development.

MacLeod: Becoming a Physician in a Digital Age: Mobile Technologies and Critical Thinking
Medical education occurs in a highly technologized world. Even traditional forms of teaching and learning, such as lectures, lab notes and textbooks, are increasingly digitized and students have become highly dependent on computers, tablets, smartphones, simulations and Internet technologies to support the learning process.

Despite widespread digitization, the goal of undergraduate medical education remains unchanged: to graduate competent physicians who are capable of delivering safe and high quality health care. Certainly, it is in the best interest of Canadians to ensure that medical schools are graduating critical thinkers who engage in purposeful, self-regulatory judgment. Critical thinking is best accomplished by critical evaluation and includes the ability to: detect bias, examine the plausibility of specific assertions, weigh the evidence, judge the soundness of inferences, and develop counter arguments and alternative hypotheses. When critical thinking is applied to the cognitive and sociocultural aspects of patient care, it is called clinical decision-making.

The practice of medicine involves, among other things, managing ambiguity, interpreting context, and making decisions in the face of uncertainty. These uncertainties, amplified for novices, can be negotiated using critical thinking skills; however, the promise, efficiency and widespread availability of mobile technologies and clinical decision supports, tools like UpToDate™, make them a very appealing way to access knowledge and manage ambiguity and uncertainty.

We know that mobile technologies and clinical decision supports are becoming increasingly prevalent in medical education and in the practice of medicine. We also know that physician critical thinking skills lead to improved patient outcomes. What we do not yet understand is how tools available through mobile technologies interact with, and influence, the development of future physicians’ critical thinking skills.

Interventions at the undergraduate level have been consistently shown to be effective in influencing long-term practice patterns\(^1\). Overlooking how and why medical students are learning to use mobile technologies in the development of these critical thinking skills is an oversight as it may have significant unanticipated impacts on their ability to eventually function as independent clinicians. We must rigorously investigate educational practices in order to understand the development of critical thinking skills in an era of mobile technologies. Therefore, the objective of this proposed research is to explore the development of critical thinking skills in a group of medical students who are becoming physicians in a digital age.

Specifically, our research question is: Why and how do medical students use clinical decision support tools in clinical and non-clinical situations?

Our intended outcomes are to:

- contribute new knowledge on the role of mobile technologies in the development of critical thinking skills in medical students;
- provide practical guidance for mobile technology use and integration to medical educators responsible for Dalhousie’s undergraduate curricula; and,
Leverage our findings to apply to CIHR for funding to conduct a larger scale research project exploring the longer-term impacts of mobile technology use during training on clinical judgment and critical thinking.

Manos: Dalhousie Resident Burnout and Models of Support for Wellness

- What is the level of burnout among postgraduate trainees at Dalhousie University?
- How do levels of burnout vary by medical school location, subspecialty, and year of residency training?
- What are the protective and risk factors that contribute to resident burnout at Dalhousie?
- What wellness resources do Dalhousie residents perceive having access to?
- What additional wellness resources would Dalhousie residents access if available?

O’Hearn - Exploring risks and benefits of service learning for medical students and community organizations

Research Questions

1. What are the perceptions of medical students on the role of service learning to their medical education training?
2. What are the perceived risks and benefits for community organizations participating in service learning initiatives with Dalhousie Medicine?

Research Objectives

1. Explore students’ views concerning the impact of service learning on their subsequent learning experiences in classroom and clinical context
2. Describe the risks and benefits of both students and community groups in service learning
3. Provide insights that could benefit other students, faculty and community organizations engaging in service learning programs

Brief Description of Study
Living Laboratory Grant – 2015-16: Short Descriptions of Funded Research

In this proposed collaborative multi-site exploratory qualitative descriptive study, we plan to conduct individual and focus group interviews with a cohort of medical students and individual interviews with community organizations participating in the service learning program of Dalhousie’s MD program. The study will also have a questionnaire for first year medical students to gather baseline data on their perception of service learning in their medical education. While past students have volunteered with community organizations, Dalhousie Medicine is establishing a formal service learning program that will begin in September 2015. This study will inform the development of this program to ensure that we are meeting our social accountability mandate as well as maintain ethical partnerships with our community organizations.

Tang: Longitudinal Effect of Post-Graduate Surgical Foundations Boot Camp on PGY1 Skill and Knowledge

The purpose of the proposed study is to describe and evaluate the Dalhousie University Surgical Foundations Boot Camp (SFBC) in order to determine whether it is effective in improving resident performance in clinical, procedural, and communication-based skills. We will also describe the SFBC in detail as to allow replication at other educational institutions. The SFBC covers a wide range of topics beyond the technical skills that are most commonly covered in similar programs, including communication skills and ethical topics. We expect both skills and confidence to improve when baseline and post-boot camp scores are compared. Addressing additional gaps in the existing literature, we will also examine whether improvements are maintained 6 months after the boot camp has occurred. We will also gather follow-up information from residents to describe perceived benefits and areas needing improvement within the boot camp.

The research objectives of this study are:
1. To determine the level of PGY1 surgical residents’ clinical, procedural, and communication skills, and confidence in these domains prior to the beginning of their surgical residency training.
2. To evaluate the effectiveness of the SFBC in improving the clinical, procedural, and communication skills and confidence of surgical residents.
3. To analyze the maintenance of skills from an intensive boot camp six months following initial training.
4. To longitudinally assess resident opinion of the boot camp experience and its effect on their preparedness for residency.
5. To describe the Surgical Foundations Boot Camp as to allow recreation of the program by other medical education institutions.

Warren: Teaching Communication Skills for Value Added Care

One of the patient safety competencies outlined in the draft CanMeds 2015 competency framework\(^3\) is the ability to confidently discuss the risks and benefits (or value) of performing a given test, procedure, or treatment. However, there is variation in the comfort of physicians in foregoing unnecessary tests and procedures when challenged by patient requests.\(^4\)\(^,\)\(^5\)\(^,\)\(^6\) It is therefore important for postgraduate medical
education programs to include specific instruction and guidance on communicating the risks and benefits of tests, procedures, and treatments to promote Value Added Care (VAC). Building on a pilot study completed in 2014, and extending a proposed RCPSC study to family medicine residents, we will investigate the effectiveness of communications training for VAC. The objective of this study is to evaluate the effectiveness of online communication skills training module for Value Added Care with a sample of family medicine residents at Dalhousie University using online assessment tools as well as an OSCE.

The following research questions will be addressed:

1. What is the quality of family medicine residents’ communication skill for VAC?
2. Is the completion of an online training module on communication skills for VAC associated with greater resident confidence in communicating to achieve VAC and improved performance on an OSCE designed to elicit those skills?

In the study itself, Family Medicine residents will be randomized to complete an e-learning module either before or after an OSCE station designed to test their skills in VAC communication. OSCE performance will be assessed by trained simulated patients. Resident confidence and performance will be compared between the groups receiving the e-module before the OSCE against those receiving it after.