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Postgraduate trainee views on eHealth at a distributed medical campus

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Abstract

Purpose: e-Health is a rapidly evolving field that cuts across specialties. Graduating physicians are expected to use e health technologies to help their patients obtain specialized services that may not be available in their region of practice. Given that there are few if any formal curricula to teach eHealth practice in our region, we sought to understand the current level of comfort and learning needs in this field among post graduate trainees. This is a multicentre, collaborative effort among faculty from the departments of Psychiatry, Geriatrics and Internal Medicine in partnership with Ontario Telehealth Network to assess the current learning opportunities in eHealth and the needs of postgraduate residents to become competent in the practice of telemedicine.

Methodology: We conducted a needs assessment through an online survey to investigate the self-perceived knowledge, gaps and barriers to eHealth of medical resident physicians at the McMaster University DeGroote School of Medicine Waterloo Regional Campus (WRC), Kitchener, Ontario, Canada.

Results: Almost all respondents identified that they would be interested in education in telehealth and all of them felt that they would have to use telehealth in their future practices. However, 83.3% did not feel confident using telemedicine in clinical practice.

The authors do not have any conflicts of interest to disclose. This project received no funding. As all data were completely anonymized thought the internet survey and no patients were involved, this was not reviewed by an ethics board.

Introduction

Telemedicine has the potential to alleviate access barriers, such as geographical, scheduling, administrative, and financial issues.[1] This is pertinent to this region as a current priority for Ontario is to increase accessibility of specialist services in rural and remote settings as wait times to see specialists are longer in Canada compared to 11 other Commonwealth Fund (CMWF) countries [2] and one way to increase access to specialists is to increase the uptake of eHealth. [3]
The Royal College of Physicians and Surgeons of Canada identifies eHealth as a "hot topic" in their milestone search [4]. Numerous milestones are specified with the intention that physicians will be competent in these prior to practice. Examples include *"Use technology to facilitate consultation for patients who may have limited or delayed access to care"* [4] and *"Use technology to enhance collaboration in health care".* [4] While recent work has further defined telehealth skills in the CanMEDS framework, [5,6] there remains a need to develop training opportunities in telemedicine.[5]

One of the mandates of Canadian medical schools is to direct their education toward the priority health concerns of the community .[7] As there were no formal training experiences in telemedicine in our region, we sought to understand the learning needs and barriers to using telemedicine among residents at Waterloo regional medical campus as the first step to developing a local eHealth curriculum.

Methods

We conducted a needs assessment through an online survey to investigate the self-perceived knowledge gaps in eHealth education and barriers to future practice among medical resident physicians at the McMaster University DeGroote School of Medicine Waterloo Regional Campus (WRC), Kitchener, Ontario, Canada. The Waterloo Regional Campus is McMaster's first fully distributed site for medical education and was started in the year 2007.
In February 2017, we sent the open internet-based survey to a purposive sample of 46 residents (11 psychiatry and 34 family medicine). We chose family medicine residents as family physicians are the primary referrers in our medical system and their referral patterns would depend of whether they were comfortable with the modality, particularly with asynchronous consultation such as eConsults.[8] Psychiatry was chosen as the specialist group as tele psychiatry has been established as a feasible form of quality care with outcomes as good as in-person care.[9] Pragmatically, it was one of the specialty residency programs at this distributed campus. We obtained informed consent from participants. We indicated the length of the survey would be < 5 minutes and disclosed the investigators and the purpose of the needs assessment.

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We utilized the Google forms® online survey platform. Participant responses and personal information were de-identified. As no personal information was collected or stored and this was a voluntary survey, ethics review was not required.

Results

From our sample 25 residents (54%) responded. 12 residents (48%) answered that they definitely anticipated using telemedicine as part of their practice, and the other 13 (52%) answered that they may have to use telemedicine. (Figure 1) All of the resident respondents felt they would use telemedicine as part of their practice.

Figure 1: Trainee responses to anticipated need, confidence with an interest in ehealth training.

When asked about their comfort level with telemedicine; however, 83.3% did not feel confident using telemedicine in clinical practice. (Figure 1) Trainees were asked to provide qualitative feedback in a free text box about barriers to using telemedicine. Examples of barriers included operating equipment, billing, privacy, how to troubleshoot problems with connections, and, in general, a lack of exposure in postgraduate training. In analyzing the answers, four themes emerged (Table 1). These were lack of experience with technology and equipment, lack of practical exposure to this type of practice, medico legal concerns, and questions about how to integrate such practices into existing systems. 75% were interested in more telemedicine teaching in residency and 20.8% answered that may be interested. Only one respondent expressed no interest in engaging in further training in telemedicine.

Table 1 : Self-reported barriers to using telemedicine after graduation

Theme	Comments
Technology	• whether I can use my own computer • connection and technology issues • logistics of setting up technology • I am not a tech person • unfamiliar with technology • how to manage technology failures
Knowledge and practice	• lack of training • unaware of resources • how to best communicate with the patient/consultant in preparation and during consultation • need more practical experience • lack of experience, unsure when to use or how to access • little training on the practicalities of establishing this
Medico-legal	• medico-legal concerns regarding e-consult advice, responsibilities to the patient / consulting physician • whether there is different billing information • privacy issues
System coordination	• liaising with clinics to set up this type of system • ensuring that that it would be available in the patient's location and someone to set it up there • ensuring EMR would be compatible for it
General	• definitely plan on integrating this into my practice but limited exposure thus far to feel comfortable doing this

Discussion

This needs assessment demonstrated a significant interest but lack of comfort in using eHealth among resident physicians. Based on the feedback received on our needs assessment, we developed an elective rotation for Postgraduates in Psychiatry, Internal Medicine, Geriatric Medicine, Clinical Pharmacology and Toxicology and Family Medicine at our consultation service GeriMedRisk. We used the CanMEDs milestones in eHealth as our starting point and added learning objectives from work done by other groups in defining goals for such a rotation. [4,5,6,10] This training has taken place in the context of the clinical service, GeriMedRisk developed by two of the authors (JH and SB). GeriMedRisk is an interdisciplinary, technology-based geriatric pharmacology consultation service that aims to optimize a patient's medications to improve cognition, mobility, function, and mental health. Referring clinicians can easily access GeriMedRisk nurses, pharmacists, and physicians specializing in geriatric medicine, clinical pharmacology, and geriatric psychiatry by telephone or through telemedicine. Clinicians receive electronic consultation (eConsult) reports and concise, user-friendly drug information knowledge translation materials. When necessary, in-person or OTN videoconference consultations with specialist physicians are available. The feasibility of this model has been tested [11] and it is currently being scaled provincially in Ontario. Trainees have the opportunity practice various eHealth related skills in this clinical context. Since the initiation of this rotation in May 2017, we have had 15 residents train with us. Their clinical training programs

include family medicine, psychiatry, clinical pharmacology and toxicology, medical undergraduate and internal medicine. While majority of these residents were from the Waterloo Regional Campus, three were from a large urban academic health sciences centre. A proportion of their learning goals included learning about eConsults and their clinical and financial roles in the health care system and identifying patient cases suitable for eConsult compared to those who need to be seen either through videoconferencing or in person. We are continuing to refine the learning goals (Table 2) and develop new material in keeping with advances in the field. We hope to continue to gather feedback from trainees to further develop and modify this training experience that equip them to be proficient in telemedicine.

Table 2: Examples of Learning Goals:

1)	Identify appropriate cases that can be answered by electronic consultations
2)	How to make an effective electronic consultations referral
3)	How to draft an electronic consultations note that balances evidence contextual factors.
4)	Impact of electronic consultations on financial costs to the health system
5)	How to set up and conduct an eVisit to assess a patient remotely
6)	How to build and work within virtual interdisciplinary team

Our needs assessment has a few limitations. First, it is possible that our sample from a distributed medical campus are more interested in eHealth than resident physicians in general, since our graduates are more likely to choose rural or remote locations for practice. However, this issue further highlights the importance of including these types of curricula in distributed systems.

Conclusion: This medical education project developed from a Canadian Regional Medical Campus highlights the strong awareness of eHealth and self-perceived educational needs of resident physicians, and a pilot response to those needs. Ongoing support and future quality improvement projects regarding eHealth competencies among resident physicians are warranted to maximize eHealth's potential benefit to rural and urban communities.

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