DFM INNOVATIONS IN MedEd

DFM 2.0 Webinars: A collaborative approach
May 13, 2020 at 9:00am & 5:30pm

Presented by: Dr. Clare Liddy and Jeff Puncher
Who? DFM faculty, residents, UG students & peers at the Faculty of Medicine
Disclosure

We do not have any conflict of interests to disclose and we are not affiliated with any commercial entities or organizations that serve to profit from this presentation.
Indigenous affirmation

We pay respect to the Algonquin people, who are the traditional guardians of this land. We acknowledge their longstanding relationship with this territory, which remains unceded.

We pay respect to all Indigenous people in this region, and from all nations across Canada.

We acknowledge the traditional knowledge keepers, both young and old. And we honour their courageous leaders: past, present, and future.

Nous rendons hommage au peuple algonquin, gardien traditionnel de cette terre. Nous reconnaissons le lien sacré de longue date l’unissant à ce territoire qui demeure non cédé.

Nous rendons également hommage à tous les peuples autochtones qu’ils soient de la région ou d’ailleurs au Canada.

Nous reconnaissons les gardiens des savoirs traditionnels, jeunes et âgés. Nous honorons aussi leurs courageux dirigeants d’hier, d’aujourd’hui et de demain.
What are some of your issues?

• What keeps you up at night?
  – How can we deliver the curriculum remotely?
  – Loss of faculty development opportunity and building a community practice
  – Loss of feeling part of a team when working remotely – social aspect
  – How will the new cohort coming in on July 1st operate?
  – Quantity and quality of what they have done in clerkship this past 3 months
  – Virtual care without having even met incoming residents – capabilities
  – Increased remediation in the future?

• Availability of clerkship positions for UG – Bruyère/Primrose re-open?
• Licensing of new residents – did they get enough training?
• New CaRMS timeline
Background

• Covid-19- pandemic in 2019 created a need to shift med ed to virtual/online programming

• Impact at all levels of MedEd
  – Undergraduate
  – Postgraduate
  – Faculty level- continuing professional development activities
Preliminary needs assessment & gap analysis

- Online/Digital Curriculum for events like Academic Day
- Impact of COVID-19 on program delivery in UG MedEd in Canada
- A systematic review of the literature of gamification in MedEd
  - SIM City Ottawa?
Project #1 – online/digital curriculum for events like Academic Day

Migrate a minimum of 25% of current academic teaching to online teaching methods

This could provide us the opportunity to include additional topics/curriculum to be delivered or be available to residents that the current 2 year cycle is not able to accommodate:

- First Nations Medicine
- Mental Health
- Francophone
- Other specialty subjects

The goal would be to work with the stakeholders to determine those courses that would best benefit from being provided online. Then we would down-select to one or two easy courses to develop and deliver a quick win – proof of concept.
Project #1 – cont’d

The remaining course will be projected on a roadmap of delivery.

In the future is there the ability or need to have some courses delivered through either Augmented Reality (AR) or Virtual Reality (VR)?
Virtual reality in MedEd

Queen's University Launches Canada's First VR Medical Training Centre
Tue Oct 9th 2018, 10:00 am

Collaborating with SimforHealth and HTC VIVE, Queen's is Training the Physicians of the Future

Queen's University has partnered with virtual reality innovators SimforHealth and HTC VIVE to build Canada's first medical virtual reality training centre. The centre will allow medical students and residents the opportunity to gain experience caring for patients in a realistic but completely safe environment.

“There was a time when physicians performed their first procedures and did the majority of their learning on

https://healthsci.queensu.ca/administration/announcements/queens-university-launches-canadas-first-vr-medical-training-centre
The baby’s head is easily visible now and with your support the baby is rapidly delivered. The remaining liquor is clear.
Project #2 – Impact of COVID-19 on program delivery in undergraduate MedEd in Canada

• What impact/changes did COVID-19 have on undergraduate medical education in Canada?

• Method/design-Environmental scan of programs
  – online search supplemented by a national survey?

• A simple descriptive, narrative analysis guided by xx framework
  – is there an educational framework to guide us?

• Is there a difference between programs that already had a more distributed program (BC ?) linguistic differences?

• Results/impact: Canada has 17 medical schools across PTs with xxx students. (figure 1 map of programs)

• Timeline figure: when did the programs stop/start online programming?
THALES AND UNIVERSITÉ LAVAL TO IMPROVE ASTRONAUTS’ MEDICAL AUTONOMY FOR FUTURE MISSIONS TO MARS

A team of scientists from Université Laval’s Faculty of Medicine and experts from Thales Research and Technology (TRT) have been selected by the Canadian Space Agency (CSA) to develop a computerized medical condition knowledge base and mission-planning support tool. This tool will provide guidance to the CSA on technology needs to improve astronauts’ medical autonomy in preparation for future missions to Mars.

Due to distance, a radio signal between Earth and the crew of a ship en route to Mars can be delayed by as much as 22 minutes. It is crucial for the crew to be able to rely on a decision support system that will guide them in diagnosing, treating and managing emergency medical conditions independently from the medical team on the ground. This tool will help define the requirements for such a system.

“The first phase of the project involved developing a list of medical emergencies to be prioritized,” said project collaborator Dr. Neal Pollock, professor at the Faculty of Medicine at Université Laval, researcher in hyperbaric medicine at the Hôtel-Dieu de Lévis hospital, CISSS Chaudière-Appalaches. “We developed a grid taking into account factors such as the probability of occurrence, the importance of rapid management, the potential impact on the continuation of the mission and the level of contagion.”

Over 100 medical conditions have been assessed, including heart attack, septic shock, pulmonary embolism, detachment of the retina, and perforation of an eye. “We’ve also included pathologies that have a higher probability of occurring in space, such as kidney stones and vision deficits caused by increased intracranial pressure,” explained Dr. Patrick Archambault, professor at the Faculty of Medicine at Université Laval and emergency physician at Hôtel-Dieu de Lévis Hospital, CISSS Chaudière-Appalaches.

Project #3 – A systematic review of the literature of gamification in MedEd

Background - MedEd is still mostly delivered in a traditional university, classroom type of environment (we think)

What types of educational innovation/gamification are being delivered in MedEd?

What is the effectiveness of non-traditional med ed approaches

How is the impact measured?

Methods- a systematic (scoping?) review of the literature

Databases? (need to be broad so we include other disciplines)
Course assignments were unusual as well. For their final project, students could choose between writing a paper, producing a 40-minute podcast or creating a 20-minute YouTube video.

Jonathan Degnan, an active learning technologist at the library, says the course was a good fit with the Tinkering Lab’s intended purpose. The library created this room in CRX to be a rich learning environment that allows students and teachers to use cutting-edge technology to engage with their material in new ways.

“It’s a unique space on campus, and we’re really happy to see how Peter has taken full advantage of what our Lab can do,” Degnan says. “With the 16-foot, 8K video wall, multiple virtual reality and gaming stations, and flexible seating, teachers and students can explore in a space where the only limitation is their imaginations.”
The virtual simulation advantages

Enhance patient safety through healthcare medical simulation

Role playing simulators allows learners in graduate or continuing education to develop, refine, and apply knowledge and skills in a realistic situation. By interacting with patients and objects in a situation close to everyday life, virtual simulation improves critical thinking, acquisition of automatisms and clinical decision-making skills.

Collaborative Education

Realistic and Immersive

Medical Relevance

Dialogue with the virtual patient
The goal is to create a serious game based upon the simulation game SIM City. This would have residents of the virtual city of Ottawa visit the new doctor in town for routine and troublesome medical consults.

Communication with the patient

Taking proper history and events leading up to medical event

Ordering tests – how many, costs to the system, necessary or unnecessary, wrong one

Rendering diagnosis and next steps – right? Wrong?

As patients recover or do not, referrals increase or decrease giving higher scores.
Your doctor may be playing medical video games at work. That could be good for your health

Edward C. Baig  USA TODAY
Published 5:01 a.m. ET Jun. 12, 2019 | Updated 7:19 p.m. ET Jun. 12, 2019

Adds Dr. Jacqueline Morano, a neurosurgical anesthesiologist and assistant professor at the University of Chicago School of Medicine, “People who are good at video games are actually good at some aspects of clinical medicine.”

Doctors earn extra credit for playing

The Level Ex games are based on actual and sometimes rare cases that have been submitted by physicians. And however unorthodox it may seem, by playing them doctors can earn CME or continuing medical education credits toward maintaining their licenses.

“It is super important for us to have access to continuing medical education,” Morano says.

How can you get involved?

- Join project teams
- Send feedback on your personal experiences
- Communicate with other faculty members whom are on the team or management
- Send an email to the Chair, Dr. Clare Liddy:
  - dfmchair@uottawa.ca
Questions?
Ideas?
Feedback?
Thank you