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## Achieving CanMEDs competencies through virtual visiting electives

### L'acquisition de compétences CanMEDs dans le cadre des stages à option pour étudiants visiteurs

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## Introduction

The COVID-19 pandemic forced medical education to pivot to online platforms.<sup>1</sup> While pursuing a subspecialty match, the primary author pursued a virtual visiting elective (VVE), providing opportunities to hone CanMEDs competencies over Zoom. Table 1 reviews a typical day in an outpatient VVE. Drawing from the primary author's experience, we believe that CanMEDs roles can be taught and assessed virtually while acknowledging certain limitations. The ability of VVEs to teach CanMEDs competencies is supported by social constructivism—the educational theory that learners acquire knowledge through social interactions.<sup>2</sup> Specifically, VVEs facilitate opportunities for learners to easily become acquainted with clinical teams they may not have had the opportunity to work with in person and consequently developed a shared learning environment by debriefing clinical cases. Furthermore, VVEs can promote equity, diversity, and inclusivity by increasing accessibility for learners with barriers to participating in on-site electives.

Table 1. Overview of a typical day during a virtual visiting elective

Time:	Activity:	Comments:
Day Before	Patient assignments	Patients are assigned to learners the day before
8:00AM-9:00AM	Review patient charts	Review patient charts in advance of seeing patients including previous documentation and relevant investigations
8:50AM-9:00AM	Log on to Zoom meeting	Log on to Zoom meeting before patient joins to discuss the plan for the day with the staff physician
9:00AM-12:00PM	Patient assessments over Zoom	Interview and conduct physical exams in Zoom breakout room Review case with staff to create management plan in separate breakout room Staff meets the patient with the learner to review the plan and provide counselling
12:00PM-1:00PM	Lunch break	Eat lunch and catch up on documentation Staff may review slides with the "share screen" function or discuss a relevant topic
1:00PM-4:00PM	Patient assessments over Zoom	Same as 9:00AM-12:00PM
4:00PM-4:30PM	Post-clinic debrief	Meet with the various learners and staff in the clinic to review learning cases pertinent to various CanMEDs roles
4:30PM-5:30PM	Complete documentation	Finish remaining documentation

## Medical expert

In a VVE, the Medical Expert role is achieved through a flipped classroom model, where trainees asynchronously learn prior to clinics.<sup>3</sup> During the primary author's VVE, online modules offered opportunities to review medical topics prior to seeing the relevant presentations in clinic. Furthermore, VVEs allow for direct teaching through the "share-screen" function. For example, during this VVE, preceptors reviewed slideshows on common clinical presentations between appointments. Domb et al. describes how virtual teaching clinics can effectively facilitate synchronous learning through real-time supervision, feedback, and mentorship.<sup>4</sup> Limitations of VVEs include fewer opportunities to practice procedural skills and physical exams, although data is emerging on implementing physical exams virtually.<sup>5</sup>

## Communicator and Collaborator

Learners can practice communication skills with patients through interviews, and with faculty via case presentations. A systematic review found no statistical difference when comparing virtual and in-person methods to teaching medical students communication skills based on post-intervention skills, attitudes, and satisfaction outcomes, suggesting that VVEs could have similar efficacy to in-person electives for teaching patient communication skills.<sup>6</sup> Other studies have described differences in virtual medicine such as clinicians needing to pay more attention to their own speech, body language, and camera position.<sup>7</sup> VVEs would allow trainees to receive feedback on these aspects of "webside" manner, which includes eye contact, body language, privacy considerations and having a professional background.<sup>4</sup> During the primary author's VVE, faculty-led post-clinic rounds facilitated collaboration with colleagues through the presentation of patient encounters.

## Leader and Health Advocate

Virtual medicine reduces patient barriers to care, including reducing costs associated with time missed from work, childcare, and transportation.<sup>8</sup> However virtual care also introduces patient barriers: costs of an electronic device and internet, as well as limited digital literacy.<sup>8</sup> Similarly, VVEs provide opportunities for trainees to learn how to navigate virtual appointments so that they can offer a similar quality of care as in-person visits, while also benefiting from its ability to increase access.

Specific skills trainees could develop include using a translator virtually for a patient with a language barrier or learning to conduct physical exams virtually.<sup>5</sup>

## Other benefits

In-person electives confer significant housing and transportation expenses while increasing students' carbon footprint. The widespread adoption of VVEs could ease the financial and environmental strain of medical training while increasing accessibility for learners with disabilities or health concerns.

## CanMEDs 2025 update

Virtual medicine is integral to most CanMEDs roles. The existing framework could clarify which competencies may be achieved virtually. We also propose the inclusion of a new key concept in the Communicator role which could be readily achieved through a VVE: "effective use of virtual healthcare to communicate with patients and increase healthcare access."

## Conclusion

Virtual health care delivery will persist post-pandemic. VVEs provide an alternative option to in-person electives to gain unique competencies. The CanMEDs 2025 update should outline specific competencies related to the online work environment such as virtual communication skills or using technology to collaborate with colleagues. VVEs have limitations including limited opportunities for procedures and physical exams, patient barriers to accessing technology, and potentially increased workload for the supervising physicians. While further research is required on assessing effectiveness, VVEs offer learners the ability to develop many unique competencies in the digital era.

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