

LETTER TO THE EDITOR**To THE EDITOR****Implementation of a Virtual Rapid Access Epilepsy Clinic**

Keywords: Rapid access, Virtual medicine, VEC, COVID-19, Epilepsy

Prolonged wait times to visit a specialist physician are a significant limitation of Canadian medicine.¹ The median wait time to see a neurologist in Southwestern Ontario is 60 d,² and 32% of neurologists in Canada reported a mean wait time of 24.1 weeks for nonurgent consultations.³ Increased morbidity, mortality, and costs to the healthcare system are a consequence of these delays.⁴ In epilepsy, delay to diagnosis and treatment produces greater risk of increased number of seizures, seizure-related injuries, or death.⁵

The expansion of virtual medicine services has been one potential solution. Between 2008 and 2014, the Ontario Telemedicine Network (OTN) provided 652,337 visits.^{6,7} However, despite expanded access to specialists, wait times have remained unchanged as practitioners have merely shifted time spent in clinic to time spent seeing patients virtually.

In order to achieve both expansion of access and reduction of wait times, the delivery of virtual medicine needs to be rethought with a perspective that the virtual visit compliments the traditional consultation and does not replace it.

In certain subspecialties such as pediatric epilepsy, models of care conceived from this perspective can reduce the duration of the patient visit without sacrificing quality of care.⁸ The resultant, additive downstream effect is an overall reduction in time from referral to specialist consultation diminishing morbidity, mortality, and costs as patients undergo more specific investigations, more accurate diagnoses, and more appropriate treatments in a timelier manner.

With this approach in mind, the team at the Neurology Centre of Toronto (NCT) – a community-based, multidisciplinary neurology practice for adults and children – established and piloted an innovative virtual method to deliver epilepsy care in Ontario that expands access and reduces wait times while being met with high patient satisfaction. The pilot ran from April 4 to June 21, 2020, during the COVID-19 pandemic. We will be presenting brief patient-level survey data on the pilot later in this letter.

The Virtual Rapid Access Epilepsy Clinic (VEC) is an online, “walk-in” style clinic, where appointments are conducted by video conference over OTN. The Virtual Care Team consists of an epilepsy specialist, a preliminary assessor (physician assistant (PA), or a nurse with specialized training in epilepsy), and a social worker from Epilepsy Toronto – a patient advocacy organization with an extended reach throughout Ontario.

After obtaining a referral, patients register online (Figure 1). An email is sent with the time of their appointment, instructions, and a link to connect to their Virtual Care Room. Appointments are booked every 20 min. Patient intake is conducted by a Preliminary Assessor (Nurse/PA) in the Virtual Care Room. Case review occurs in a separate Virtual Conference Room with the Virtual Care Team (Epileptologist, Social Worker & Preliminary Assessor) to discuss

the treatment plan. The team returns to the Virtual Care Room to communicate with the patient, answer questions, connect the patient to community resources, and refine the treatment plan. Any further action taken is based on the needs of each patient. After each visit, a treatment plan with follow-up instructions and an emergency contact protocol is sent to the patient via email, while a comprehensive note is sent to the referring physician.

In NCT’s model, a triage process eliminates cases that likely require a physical examination. Members of the Virtual Care Team are trained to identify patients in whom a physical exam would necessitate a change in management. All referrals are triaged by a PA who applies the following exclusion criteria: (1) new onset focal neurologic deficits and (2) new non-neurologic issues without a diagnosis (e.g. new onset arrhythmia, acute infection, symptoms/signs of COVID-19, etc). Excluded patients are booked into a traditional, in-person assessment. The decision of the PA is not definitive, if the virtual care team later discovers details about a patient’s case that would necessitate an in-person assessment, they may still recommend one even if the patient has “passed” the initial triage.

Post-visit surveys were conducted and responses indicated that the VEC promoted a patient-centered care model and provided high patient satisfaction (51% responder rate; 44/86 patients). Wait times at NCT for standard appointments in April 2020, prior to the development of the VEC, were 4–6 months. Following the initiation of VEC, patients were consistently seen less than one week from referral. Most patients were “very likely” or “likely” (34/44, 77%) to use the virtual clinic over a traditional in-person appointment assuming that COVID-19 limitations are not in place.

The goal of this report was to demonstrate proof of concept of the VEC’s novel model of care. Focus of this initial analysis was placed on the VEC’s success in shortening the time interval from referral to consultation, while ensuring patient perception of quality of care remained intact. No clinical health outcomes were assessed. Patient satisfaction survey results were overwhelmingly positive. The authors appreciate there is an inherent bias, given the lack of a control group; however, these results provide some signaling evidence for success of the implementation of this type of model of care. Given that this report is descriptive in nature, it supports proof of concept and next steps are clear: (1) concerted analysis that addresses safety and outcomes in comparison to traditional, in-person visits utilizing time to consultation as a quantitative metric and (2) analysis of specific patient concerns to demonstrate and optimize quality.

Given the high patient satisfaction with this model, the VEC currently plays an intricate role in the delivery of NCT’s services. This model is easily scalable within epilepsy and other areas of neurology. NCT is piloting similar virtual clinics for treating patients with headaches, concussion, tics and Tourette syndrome, multiple sclerosis, and medical cannabis for neurological disorders. These clinics become particularly important during times of unforeseen healthcare crises, such as the COVID-19 pandemic, when healthcare resources and access to specialist care become limited. It is our goal that these virtual clinics will drive the improvement of access to specialist care, reduce wait times, and promote health equity for patients in Ontario and Canada.

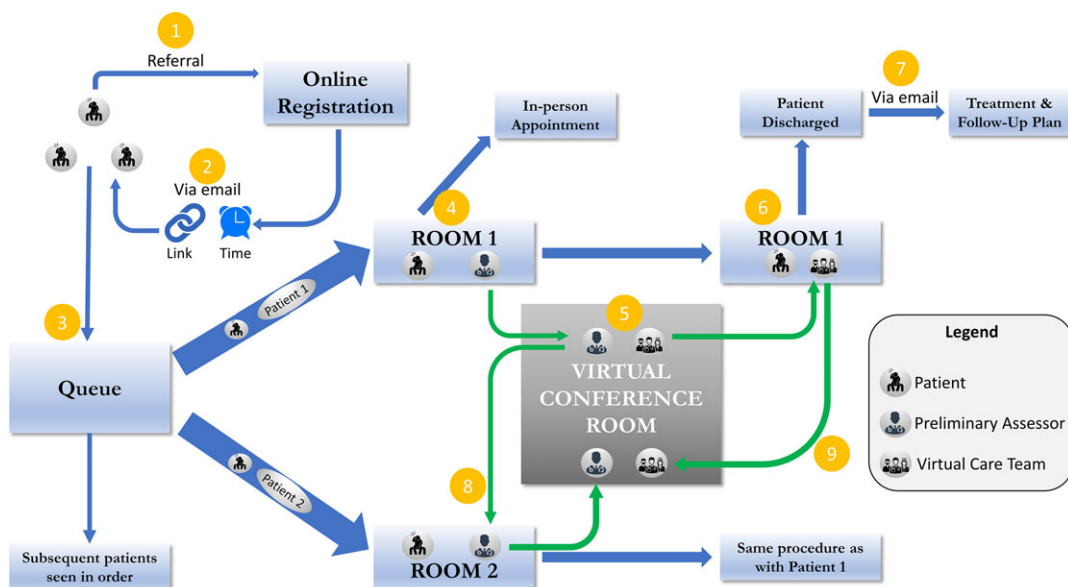


Figure 1. Patient and practitioner flow through the virtual rapid access epilepsy clinic: (1) Patients are referred to the clinic and register for an appointment via an online portal. (2) A link and appointment time are sent via email. (3) Patients use link to access the clinic; they are placed in a queue. (4) Patients are seen by a preliminary assessor (PA), at this point the PA may flag patients who need to have their visits converted to an in-person assessment. (5) The PA confers with the rest of the virtual care team (VCT) in a virtual conference room. (6) The PA meets with the patient to discuss their case and formulate a treatment plan. (7) Patient is discharged and sent treatment plan via email. (8) During steps 6–7, PA moves on to screen next patient, and (9) VCT meets with PA to discuss next patient, procedure repeats until all patients are seen. Appointment times are staggered by 20 min to reduce waiting time in queue.

ACKNOWLEDGEMENTS

The authors would like to acknowledge educational grant support from the Jamaican Medical Cannabis Corporation (JMCC) and all of NCT's patients and families who continually inspire NCT to improve patient access and quality of care.

DISCLOSURES

The authors report no disclosures relevant to the study.

STATEMENT OF AUTHORSHIP

KL, EL: Conceptualized and designed the study. RF, AB, KL, EL: Collected and analyzed the data. RF, AB, PD, EL: Drafted the manuscript. RF, AB, KL, PD, EL: Reviewed the manuscript for intellectual content.

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