



Co-RIG Project

Innovating Concussion Assessments: A concussion exam tool for virtual visits in family medicine

Project lead: Sharon Johnston, MD, LLM, CCFP, Clinician-Investigator Institut du Savoir Montfort and Bruyère Research Institute

Project location: Ottawa, Ontario

Summary

The virtual concussion exam tool supports family physicians in the rapid assessment of concussion, during non-face-to-face patient encounters. It provides comprehensive instructions to identify concussion symptoms and recognize when emergent care or imaging is required. It helps patients receive timely care and reduces strain on the health system.

Faces of COVID-19

A timely concussion diagnosis

Teresa is 34 years old and lives in a rural area outside of Ottawa. She hit her head when she slipped on the ice in her driveway. Severe dizziness made it unsafe for her to drive to work or seek medical attention. Having no feasible public transit options, Teresa was worried she would have to rely on others to get to work.

Teresa was able to get a virtual appointment with her doctor that afternoon. He conducted a virtual concussion exam, confirmed the diagnosis, and was able to rule out the need to go for emergent assessment or imaging at the emergency department. A management plan based on her symptoms was started that same day without Teresa having to find transportation to her primary care clinic. Four days after her concussion, Teresa was cleared by her doctor and was able to begin driving again and return to her priority activities.

Project detail

Early in the pandemic the CFPC partnered with Canadian Medical Association and Royal College of Physicians and Surgeons to launch the *Virtual Care Playbook*¹ to help physicians introduce virtual care into practice.

Given the complexity of conducting a virtual concussion assessment, Dr. Sharon Johnston, a clinician investigator at Institut du Savoir Montfort and Bruyère Research Institute, recognized the need to provide more concrete guidance for family physicians.

With Co-RIG funding Dr. Johnston worked with a team of international experts to adapt existing concussion guidelines into an innovative virtual concussion exam (VCE). The tool provides comprehensive instructions for family physicians to diagnose a concussion during a virtual appointment by guiding patients through examination manoeuvres.

There are 200,000 concussions reported annually in Canada,² and timely treatment helps reduce the risk of persistent post-concussion syndrome and improves patient outcomes. Traditionally concussion assessment is done through a series of hands-on physical manoeuvres, which typically can take 30 minutes. The VCE protocol can easily be conducted in 15 minutes, a modification that has helped increase its value to the primary care community.

Impact

- **Enhancing family medicine:** The VCE tool helps family physicians identify concussion symptoms virtually, identify the best care, and recognize when emergent care or imaging is required. A web-based education module will also help family physicians enhance or refresh virtual concussion assessment and treatment skills.
- **Person-centred approach:** A concussion can be stressful and being able to receive timely care from a trusted care provider helps patients. Quick assessment can minimize disruption to daily life and help people get back to routine.
- **Improving access:** In the long term, Dr. Johnston expects this innovation will help patients living in rural and remote communities who are significantly more likely to experience a concussion, and where ready access to primary care may be more of a challenge.
- **Building capacity:** The VCE has benefits for the health system by identifying patients who need emergent care. At a time when the hospital system is being stretched to capacity, this helps alleviate a pressure point in the system.

Results to date

- Thirteen family physicians participated in VCE training and rated their comfort with virtual concussion care. They provided feedback on the training, and 10 provided additional feedback a few months later:
 - » All participants reported an increase in comfort level in diagnosing and managing concussion patients during virtual encounters. Most directly attributed this to the additional education/training.

» When considering the value of the training, 80 per cent of respondents felt that the training would adequately prepare family physicians to conduct a VCE.

» One participant felt that the VCE exam was too long to conduct in a clinic setting

• Based on feedback received, the team revised training manuals and videos and posted on the Brain Injury Guidelines website.³

Methodology

- Adapt national concussion exam best practices to enable virtual assessment.
- Refine the VCE based on feedback from family physicians.
- Assess the feasibility and acceptability of the VCE to patient and provider through iterative cycles of testing and improving.
- Validate the VCE by testing at a family physician-staffed concussion clinic.
- Partner with two family medicine practices to embed a VCE into the electronic medical record.
- Disseminate through national brain-injury and injury-prevention organizations targeting family physicians and health care professionals.



“Concussions need rapid assessment so that patients get emergent care if necessary and are equipped for optimal recovery. Many patients will need guidance and/or medical clearance to return to their sports and activities. This flexible and adaptable approach means family physicians across Canada can gain the necessary skills to conduct virtual concussion assessments.”

– Dr. Sharon Johnston, project lead



¹ Dermer M. *Virtual Care Playbook*. Ottawa, ON: Canadian Medical Association; 2020. Available from: https://www.cma.ca/sites/default/files/pdf/Virtual-Care-Playbook_mar2020_E.pdf. Accessed May 19, 2021.

² Brain Injury Canada. Concussion website. <https://www.braininjurycanada.ca/en/statistics-brain-injury#Concussion>. 2020. Accessed May 19, 2021

³ Ontario Neurotrauma Foundation. Brain Injury Guidelines website. <http://braininjuryguidelines.org/>. 2019. Accessed May 19, 2021.

Project team

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