

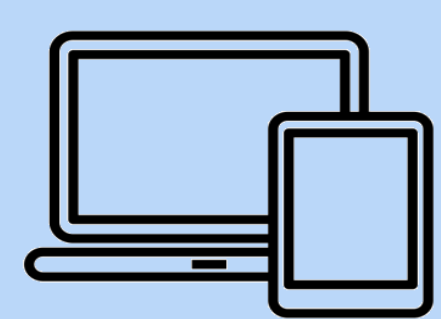
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Introduction

- Project ECHO (Extension of Community Health Outcomes) is a guided practice model that increases workforce capacity to provide best-practice specialty care and reduce health disparities.
- Concussions, a form of mild traumatic brain injury, are diagnosed in 150,000 Ontarians annually, resulting in disruptions to work, school, and sport.
- Concussion management is complex: addressing and correcting misinformation, variable onset of symptoms, urban/rural health service disparities, and the number of healthcare and non-healthcare professionals involved in case management. However, there is often a lack of communication and continuity between professionals, necessitating an integrated approach to concussion management.
- ECHO Concussion began in 2019 with the aim to teach a comprehensive approach to concussion diagnosis and symptom management across the continuum.

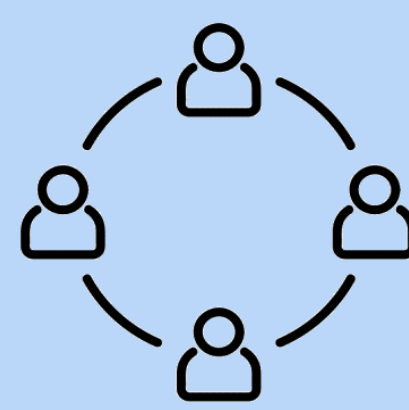
How ECHO works



1. Live weekly videoconference sessions



2. Interactive didactic lecture + patient case presentation



3. Peer-to-peer learning and discussion

4. #allteachalllearn

- Nine health professions are represented on our ECHO Concussion hub team: chiropractic, clinical psychology, family medicine, neurology, neuropsychology, occupational therapy, pediatrics, psychiatry, physiotherapy.

Objectives

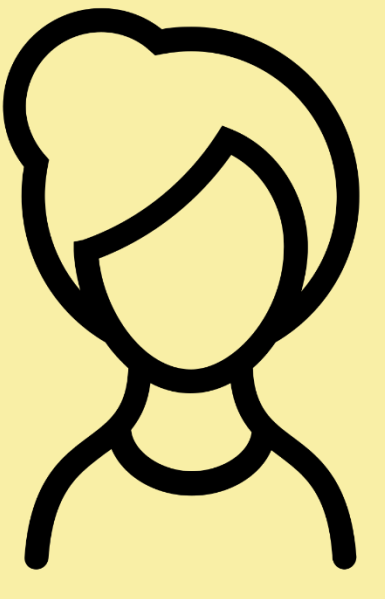
- To illustrate how ECHO Concussion supports complex concussion management in participating primary care providers in Ontario, Canada.

Methods

- An in-depth case study of ECHO Concussion was performed through analysis of video-archived weekly session case presentation and recommendation forms, as well as program implementation and evaluation documents.
- All documents were reviewed for content relating to complex concussion management, navigation of the healthcare system, & interprofessional collaboration.
- Thematic content analysis was conducted for all documents in order to develop themes related to complex concussion management.

Findings

- From November 2019 to June 2022, ECHO Concussion has run 5 cycles of education with 80 sessions.
- 91 patient cases were presented. Two composite cases are below:



Demographics

- 42 yo female
- Married with two children
- Lives in Northern Ontario
- Was working as teacher but now working part-time

Description of the injury

- Motor vehicle accident 6 months ago
- Hit head on window twice
- Brought into ER and CT was done
- No prior history of concussion

Current complaints

- Still experiencing severe headaches
- Reduced attention + "Fogginess"
- Dizziness
- Nausea
- Anxiety- generalized and situational in car
- Sleep disturbances

"What is the prognosis for this patient, given her medical history?"

ECHO Recommendations	
Referrals	<ul style="list-style-type: none"> Neuropsychology Psychiatry
Investigations	<ul style="list-style-type: none"> Sleep study Neuroimaging Blood work
Pharmacologic management	<ul style="list-style-type: none"> Reassess medications for headache and sleep Medication review
Non-pharm management	<ul style="list-style-type: none"> Sleep hygiene handout Daily exercise, gradual activity Headache cocktail (Mg, Riboflavin, CoQ10)
Psychosocial management	<ul style="list-style-type: none"> Social work Online Women's Brain Injury group Church group
Follow-up recommendations	<ul style="list-style-type: none"> Use Rivermead Questionnaire to document symptoms Encourage patient to take small steps Ongoing litigation resolution SMART goals to review what is meaningful for her



Demographics

- 16 yo male
- High school student living at home with parents
- Lives in urban city

Description of the injury

- Hit from behind into boards during hockey game
- Reported headache but played rest of the game
- Past history-prior concussion (also from sport)
- Hit again during another hockey game 14 d later
- Unable to play remainder of game 2nd time
- Now 6 weeks following first concussion

Current complaints

- Moderate headaches
- Dizziness, blurred vision, "fogginess"
- Constantly feeling "out of it"

"Recommendations for vestibular symptoms? Suggestions on how to support this patient in making accommodations in his school setting?"

ECHO Recommendations	
Referrals	<ul style="list-style-type: none"> Vestibular therapist Optometrist/Ophthalmologist
Investigations	<ul style="list-style-type: none"> Buffalo Concussion Treadmill Test
Pharmacologic management	(none)
Non-pharm management	<ul style="list-style-type: none"> Sleep hygiene handout Dietary counselling
Psychosocial management	<ul style="list-style-type: none"> "Keep him in school!"
Follow-up recommendations	<ul style="list-style-type: none"> Link with school for note-taking accommodations (typically the Special Education teacher) Return to contact sport – minimum 2 weeks post-injury; should NOT return to sport on same day of concussion
Other resources	<ul style="list-style-type: none"> Parachute Canada return to play Holland-Bloorview return to play w link to hockey protocol Rowan's Law: Concussion safety

It doesn't matter which clinical setting you're working in – you are going to work with somebody who has sustained a concussion or they're living with persistent symptoms from concussion. [...] There is so much misinformation out there and if people could just have the opportunity to learn some more about what to do. If they come away with just one clinical pearl, that's a huge win."

- ECHO participant, physiotherapist, urban centre

Concussion management is complex because of the interplay of physical, emotional and cognitive symptoms and a telemedicine education program like ECHO Concussion may be beneficial for frontline primary care providers.

ECHO Concussion uses case-based learning to teach providers how to manage symptoms and navigate the return-to-work and return-to-school challenges. The sessions facilitate interprofessional collaboration and address concussion misinformation, while fostering a community of practice.