Linking Physiotherapists to Rural, Remote and Indigenous Teams using Technology

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Learning Objectives

After this session, participants will be able to:

1. Describe teams and technology exemplars that facilitate physiotherapy access in rural and remote communities.

2. Discuss facilitators and barriers to providing physiotherapy through a teams and technology approach.

Outline

- Clinical and Research Journey
- Access Disparities
- A ‘Team and Technology’ Approach
- Indigenous Community Engagement
Low Back Disorders

- Public Health Problem
  - Leading cause of morbidity worldwide compared to 289 conditions (Vos, 2012)

- High Costs
  - $4-6 billion health care costs in Canada (Bone & Joint Canada, 2011)
  - Indirect costs 2-3 x healthcare costs

- Physician Care Utilization
  - 14% of all encounters with GP (25% for MSK in general) (Jordan, 2010)
  - High proportion of ortho/neuro surgeon caseload (Mackay, 2010)
Wall Street Spinal Assessment Service
Referral, Assessment & Clinical Pathways

Primary Practitioner Referral

Surgeon
- Expedited surgical review of urgent cases

Spinal Assessment Service
- Physiotherapy assessment/consultation
  - Further investigations
  - Recommendations to primary care provider
- Referral to other health care providers
- Follow-up/Review
Inspiration for our research...

Primary Care

Spinal Triage

Secondary/Tertiary Care (Primary Care)
65% of triage service users from “rural” communities

93% classified as “mechanical spine”

70-80% surgical yield – proportion of patients referred to surgeons who had surgery
Research Article

A Biopsychosocial Profile of Adult Canadians with and without Chronic Back Disorders: A Population-Based Analysis of the 2009-2010 Canadian Community Health Surveys

Brenna Bath,¹,² Catherine Trask,² Jesse McCrosky,³ and Josh Lawson²

- Approximately 1/5 (20%) Canadians report having CBD (>6 months)

- Rural residents are nearly 30% more likely than urban dwellers to report having CBD
"I only have access to rural services and this can be very frustrating..." (patient)

"The recommendations sometimes do not take restrictions and lack of services that we have to deal with in rural practice into consideration.”

(health care provider)
11% of PTs practice in “rural” communities

>30% of the population resides there

Rural PTs more likely to be “generalists”

(Physiotherapy Canada, 2015)
Inclusion criteria:

- Adults with MSD > 3months
- PT delivered through live videoconferencing
- English only
- 2003-2016
- Designs: RCT, cohorts and case control studies

895 total articles → 15 included
Systematic Review Findings

- Only 3 RCTs
- 2 studies that examined economic measures
- 2 studies examined patient experience
- 1 study examined hybrid programming (some telehealth, some in-person)
- No examples of PT in interprofessional practice models in managing musculoskeletal disorders
  - no trained team member located with patient
- Only limited aspects of spinal exam studied
What is the main perceived *barrier* (among PTs) for the use of telehealth for chronic back pain?
Research Objectives:

1. What is the **clinical validity** of a team assessment session with a PT and NP performed through videoconferencing compared to a PT or NP only in-person assessment?

2. What are the **short, medium and longer-term impacts** and **cost effectiveness** of these 3 care models?

   (JMIR Res Protocols, 2016)
A Physiotherapist and Nurse Practitioner Model of Care for Chronic Back Pain using Videoconferencing: Diagnostic and Management Concordance
Assessment by Health Care Provider Groups

N= 27 participants

Intake questionnaire

NP in person*

PT in person*

PT + NP team*

Diagnostic/Management Tool

*participants not assessed in any particular order
Concordance Findings

- PT alone and PT/NP team
  - 93% similar decisions on back as source of problem
  - Strong agreement for urgent surgical referral
  - Strong agreement for need for PT follow up

- NP alone and PT/NP team
  - Agreed on source of problem
  - Did not agree on follow up management needs

- PT alone and NP alone
  - Moderate agreement on overall diagnosis
  - Good agreement on urgent surgical referral

- Identification of complex medical concerns in unique to the NP/PT team
Use of Teams and Technology to Improve Access to Care for Back Disorders in Rural Communities
People with CLBD in a rural community

Recruitment and Baseline Measures

Randomization

Telehealth PT & NP Assessment (N=20)

PT face to face Assessment (N=20)

NP face to face Assessment (usual care “control” group) (N=20)

Short Term Measures (1-2 weeks post assessment)

PT in-person treatment (N=40)*

Medium/Long term Measures (3 months & 6 months post intake)
Experience of Patients and Practitioners with a Team and Technology Approach to Chronic Back Disorder Management

- NP/PT\textsubscript{Team}: Urban PT joined rural NP and patients using laptop based secure videoconferencing system (VIDYO)

- Experience survey (quantitative and qualitative), n=19

- Semi-structured interviews (qualitative) n=2 practitioners, n=6 patients
Experience Survey

- Very satisfied (62.1%) or satisfied (32.6%)

- Comparable (42.1%), somewhat comparable (36.8%), not likely comparable (5.3%)

- 5.3 % audio quality rated as “unsure” and visual quality “not really clear”
Qualitative Themes

**Enhanced Clinical Care for CBD**
1. Holistic
2. Expertise in CBD

**Access**
1. Less Travel
2. Community-Based
3. Availability of PT

**Teams**
1. IP Communication
2. Patient-Centered Care
3. Team Functioning
4. Capacity Building

**Technology**
1. AV communication
2. Challenges and Considerations
Health Care Provider Quotes

“I think not only does it (VC team assessment) enhance our assessment and improve access to the patient, but I think then the treatment portion of it will result in the patient seeing the right person and receiving the right treatment.” (NP)

“Understanding of pain management (re medication use and history of management)- that was quite enhanced because of the presence of the team versus when I do assessments on my own” (PT)
Patient Quotes

- “I wouldn't have probably ever had this chance if it wasn't for this. When you have these problems you don't know where to go.”

- “So you've got a physiotherapist trained as a physiotherapist and you've got a nurse practitioner. So when they work conjoined like that it's good. It has two pairs of professional hands in one room.”
Do different modes of videoconferencing have an effect on patient and practitioner experience in delivery of an interprofessional CBD assessment?
“...I was very pleased with our ability to assess everything we needed to with both technologies. Clinically, I could get the answer I needed to.”

-Urban-based PT

“It works for me, it works for them, and I think it works for our clients wonderfully”

-In-person NP
RP-7 Remote Presence Robot

- Class II medical device, US FDA
- Realistic head / screen movements
- Excellent camera, audio and visual functionalities
- Robust security and privacy
Delivery of telerehabilitation using an RPR and NP/PT team was feasible to assess and manage a case of chronic back disorder in a remote community.

Objective improvement in range of motion and straight leg raise, 1 week after 1st session

2 sessions were delivered via RPR, and final follow up was with a local generalist PT who flew in to a neighboring community once per month.  

(Physiotherapy Canada, 2017)
Patient:

- After this experience, I definitely feel less anxious and that I have more confidence re. my prognosis. I am also enjoying less pain and progress with my range of motion.

Nurse Practitioner:

- The mentorship of being able to work with the PT and sort of merging our strengths, skills, and expertise is really helpful and beneficial for the patient
Informing an Interprofessional Chronic Back Pain Clinic in Partnership with a Northern Saskatchewan First Nation Community
Community Needs

1. How does back pain impact people’s lives in Pelican Narrows?
2. What does the community want care for back pain to look like?
What have we done so far...

- 2 Community visits April & August 2018
  - Lunch for 50!
  - Meeting with 8 Elders!
- Interviews:
  - 7 Elders and 1 Knowledge Keeper (sharing circle)
  - 1 individual Elder interview (Cree speaking, with translator)
  - 8 health care providers/administrators
  - 7 community members with chronic back pain
Robot Demo with Elders!
[back pain] is probably the most frequent complaint we get in the clinic.

most of the people who are referred to physio don’t actually go because it is a long trip out of the community. And that’s a huge deterrent to going.
We cover all these drugs that... cause addiction. 
...due to the lack of access to physiotherapy and other resources... the reliance became on medications. 
...we know deep in our hearts it’s not really probably the right thing, but it’s the only thing we have.
...they can come and have a clinic here for chronic back pain, or back pain with access used from the robot, would be phenomenal. To save all the transport, the travel, the pain maybe of traveling, disruption to family life, would be a huge impact.

Certainly physiotherapy within the community... via some sort of telemedicine modality would be really, really, really appreciated and effective
Community Members

When I go in a taxi [for PT] I usually come here like 9:30 am, by the time I get home it’s always different, sometimes we have a couple patients in the taxi or sometimes a full load, at 4:00 maybe, 5:00

Sometimes I see the doctor here, he give me pills, few pills. I got about four kinds of different pills at my home

In my community, we could establish more resources like physiotherapy, physical exercise, those kind of supports. Those would really help my people and their lives would be much easier and not cut so short.
Elders

I used to walk lots. Get out on the trap line. I liked it. But now I can’t walk.

I wish we had somebody here, an interpreter to talk Cree And we could tell them exactly what we want.

I find it very sad in the community when people don’t...what do you call it? Depend on the culture way of healing like we used to years ago.

When I see my people today now, the way they suffer, the way they are here and barely moving. I’m saying to myself, I could have been that if I didn’t start opening my eyes and started working on my life. Because a lot of your sickness comes from here (head) too.
Feasibility Pilot

1. How can we facilitate access to care for back pain using teams and technology?

2. What measurements of the new model are meaningful for communities?
What Have We Learned So Far??

- Feasible model of care
- Technology Considerations
  - Hardware, software, local and remote support
- Interprofessional Practice
  - Team members
  - Staff and technology
- Enhanced Clinical Care for CBD
- **Stakeholder Relationships & Community Engagement are Key**
Next Steps

- Explore feasibility of a hybrid PT model in Pelican Narrows, developed in partnership with community
  - Hub & Spoke (air strip, funding?)
  - Multidisciplinary local and remote team
- Evaluate process and system outcomes
- Engage with other rural, remote & Indigenous communities to tailor model
- Expand to other areas of PT practice
  - Other MSK
  - Home care
  - Pelvic health
Acknowledgements