Virtual Care in Prairie Mountain Health: An Interdisciplinary Project

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Home for the Summer Program - June 2020

Brandon, Manitoba

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Outline

Background

1.1 Introduction

Virtual care is expanding rapidly but the number of established virtual health care models in Canada is limited. Given Canada's geographically spaced population, and the increased prevalence of chronic diseases that require regular management, virtual care may increase the efficiency of the health care system. Virtual care is any interaction between patients and/or their circle of care occurring remotely, using any form of communication (Shaw et al, 2018). The terms virtual care, virtual visits, telehealth, tele-rehabilitation, and telemedicine have been used interchangeably to reference the same concepts in the literature.

Overall, Canadians are supportive of integrating virtual care with standard care. A 2018 survey showed approximately 4 in 10 Canadians would like to have the option of virtual visits with their health care provider (Canadian Health InfoWay, 2018). These results are supported by a more recent 2018 survey conducted by the Canadian Medical Association where approximately 7 in 10 patients reported they would take the opportunity to have a virtual visit if the option was available, and 37% responded they would use virtual care for either all or more than half of their health care visits (Ipsos, 2019). However, in 2018, only 4% of Canadian health care practitioners offered virtual care (phone, video, or app) as an option (Canadian Health InfoWay, 2018).

Recent statistics show that with the onset of COVID-19, approximately 60% of health care visits in PMH were conducted through virtual care. A hybrid model that combines virtual care with standard care has implications at the societal, organizational, and individual levels. Proponents of virtual care note that at the societal level, virtual care can mitigate public health challenges such as unequal geographic distribution of health care resources. At the organizational level, virtual care has the potential to improve continuity of care for patients and increase interdisciplinary collaboration. To illustrate, an at-home consultation done by a nurse may benefit from virtual access to a dietitian or physiotherapist. At the individual level, the most commonly cited benefits of virtual care is reduced travel time, transportation costs, and opportunity costs (i.e. lost wages from missed work, lost time spent with family or friends) for

the patient. Vulnerable patients that require frequent and close monitoring may benefit greatly with more reliable virtual access to care that allows for more consistent follow-up visits, resulting in better health outcomes.

Despite clear benefits, the literature also cites concerns with virtual care. At societal level, virtual care has the potential to magnify existing health disparities in marginalized populations. Populations such as those with cognitive impairment, sensory deficits, minimal technological literacy, or those living below the poverty line may be disproportionally excluded from virtual care options. At the organizational level, there exists regulatory and logistical challenges, since current health care procedures and traditions are rooted in face-to-face interactions. Many organizations are also concerned about patient privacy and security risks. At the individual level, health care providers have concerns around missed clinical clues and concerns around establishing and maintaining rapport with patients. Synchronized readiness between patients, healthcare providers, and managers has been cited as integral to the successful implementation of virtual care programs (Gagnon et al, 2012). The literature suggests health care providers have more nuanced perspectives and hesitant attitudes towards virtual health as compared to patients (Whitten & Love, 2005).

Given the numerous challenges and benefits that exist with virtual care, careful consideration is necessary before the implementation of a region wide virtual care program that is sustainable. This report aims to report the attitudes of health care providers and managers as and the factors that contribute to the uptake and sustainability of virtual care in PMH.

1.2 Virtual care in Prairie Mountain Health

Prior to the onset of COVID-19, MBTelehealth was the only form of remotely delivered virtual care offered to Manitobans. Established in 2001, MBTelehealth is a secure virtual video conferencing system that's active across 186 sites in Manitoba, 32 sites in PMH, and services 73 communities. MBTelehealth is a form of virtual care that allows physicians to interact with patients remotely. In 2019-

2020, there were 29,713 MBTelehealth appointments across Manitoba (MBTelehealth, 2020). In 2018-2019, the oncology department utilized the most MBTelehealth, followed by psychiatry and general surgery. In the same time span, Dauphin, Brandon Cancer Center, and Swan River were the top three locations for utilization of MBTelehealth. Over the past five years, there was a 37% increase in the use of MBTelehealth (MBTelehealth, 2020).

In late 2019, Manitoba's Clinical and Preventative Services (CPSP) plan emphasized specific plans for connected care using a combination of virtual support and in-person care for better care and services. The plan focuses on improving access and quality of care for patients and improving support and tools for health care providers across rural, remote, and urban Manitoban communities (Shared Health Manitoba, 2019).

In January of 2020, PMH began to offer virtual care to keep up with the demand of services during the pandemic. This differed from the MBTelehealth program because patients can consult general practitioners and specialists using their own computers and smartphones from their home, instead of a designated MBTelehealth site. As of June 2020, virtual care is offered with telephone calls, videoconferencing, secured texting, and data monitoring across various fields including rehabilitation therapy (physiotherapy, occupational therapy, speech and language therapy), nursing, and medicine.

1.3 Virtual care in rehabilitation therapy

Virtual care in rehabilitation therapy, or telerehabilitation, is a new and rapidly growing area of research. Several studies have reported high patient satisfaction (Cason et al, 2018) and comparative clinical outcomes between therapy services provided face-to-face versus virtually. Services such as wheelchair assessment (World Federation of Occupational Therapy, 2014), pre-admission consultation for prosthetics and orthotics (Sarfo et al, 2018), rehabilitation after stroke (Sarfo et al, 2018), and post-operative total joint arthroplasty rehabilitation (Cason et al, 2018) were reported to have comparative efficacy and functional outcomes as compared to in-person visits.

1.4 Virtual care in nursing

Virtual care in nursing is rooted in holistic person-centered care and falls broadly into four categories including: the monitoring of conditions such as diabetes, heart disease, pain or mental health; education on medications, health conditions and strategies for self-management; screening/triage; and lastly patient and family support and access to resources. Education through virtual care is one aspect of nursing that has extensive supporting evidence. For example, lactation consulting in first time mothers is a component of post-partum education that could be offered through virtual care. One study found that breast feeding coaching done by a maternity trained registered nurse or midwife for a 4 month period by telephone consultation improved the duration of breast feeding for first time mothers and their infants. Rate of exclusively breast feeding were also improved with this type of coaching (Fu et al, 2014).

1.5 Virtual care in medicine

There are some conditions in medicine that have had success with virtual care. Currently, the majority of the literature published in virtual care in medicine is on chronic heart failure, and chronic progressive disease. Both these conditions lead to disproportionately high rates of hospitalizations and are very costly for the health care system to treat (Ambrosy et al, 2014). Several meta-analysis and one Cochrane review found virtual care through home monitoring reduces mortality and hospital admission in heart failure (Gensini et al, 2017; Dierckx et al, 2017). Randomized controlled trials have also shown high patient satisfaction with virtual care in psychiatry (Gros et al, 2018; Opris et al, 2012) and high diagnostic accuracy with virtual care in dermatology (Opris et al, 2012). Less consistent evidence exists for diabetes and respiratory conditions such as asthma and chronic obstructive pulmonary disease (Wootton, 2012).

2. Objectives

The objective of this project is to provide decision makers within Prairie Mountain Health (PMH) with a broad overview on the collective experiences and recommendations of health care workers and managers on the implementation and sustainability of virtual care in PMH. The specific objectives include:

- To determine health care provider attitudes on virtual care in PMH

- To determine factors that may affect the uptake and sustainability of virtual care in PMH

3. Methods

This project is an environmental scan conducted through a synthesis of online survey responses, telephone interviews, and in-person interviews, from health care providers and managers across Prairie Mountain Health (PMH).

Setting. The project was conducted in Brandon, Manitoba in PMH. PMH is a large, integrated health region that can be divided into 55 districts. PMH has 20 hospitals, 43 long-term care sites, and 9 transitional care sites. PMH employs approximately 7,800 employees to deliver care to 170,899 Manitoban residents. As of October 2019, there are 32 communities that provide MBTelehealth services (MBTelehealth, 2018).

Sampling. The goal of sampling was to capture the breadth of perceptions and experiences in various health care settings from various health care providers and managers. Providers and managers who have used virtual care since COVID-19 were asked to comment on their experiences and recommendations moving forward. Health care providers were given the choice of either (1) filling out an online survey, (2) conducting a telephone interview, or (3) conducting an in-person interview. Managers were asked to respond to a modified email survey. All four modalities addressed the same eight questions (Appendix B).

Self-administered survey of providers. A survey of eight questions was generated via SurveyMonkey.com (Appendix B). Three questions addressed previous clinical and virtual care experience. One question asked health care providers to report on attitudes towards virtual care on a Likert scale (1=strongly disagree, 5=strongly agree). Two questions were open-ended questions on the benefits and limitations of virtual visits. The remaining two questions were open-ended survey questions asking staff to describe factors they believe will contribute to clinical uptake and sustainability of virtual

visits in PMH. Survey results were analyzed qualitatively to look for patterns and common concepts (Appendix C). The self-completed survey gave participants anonymity which may improve the reliability of responses, and also reduces any potential bias introduced by the interviewer.

Telephone and in-person interviews of providers. Telephone interviews and face-to face interviews were semi-structured and supplemented the results in the self-administered survey. Telephone interviews allowed us to reach participants from a wider geographical area within PMH, specifically, providers from ten different PMH regions were offered the option of telephone interviews. Face-to-face interviews were offered to those who were working at the Brandon Regional Health Centre. The interviews allowed participants to elaborate and ask for clarification. Interview comments were summarized by health care profession (Appendix D) and used to supplement our self-administered survey findings.

Self-administered survey of managers. Managers from various departments were sent a modified version of the questions through email (Appendix B). Responses were analyzed qualitatively to look for patterns and common concepts (Appendix E).

4. Results

4.1 Health care provider perspectives

Of the 25 health care providers who responded to our survey using SurveyMonkey, slightly less than half (48%, n=11) have worked as a health care provider for more than 15 years, while 28% (n=7) have had less than 5 years' experience. The majority of respondents have either provided virtual care for less than 6 months (64%, n=16) or have not provided virtual care (24%, n=6) (Figure 1). Of the participants who provide virtual care, 36% (n=9) provided virtual care every day, 20% (n=5) provided virtual care 2-3 times a week, and 16% (n=4) provided virtual care once a week or less (Figure 2).

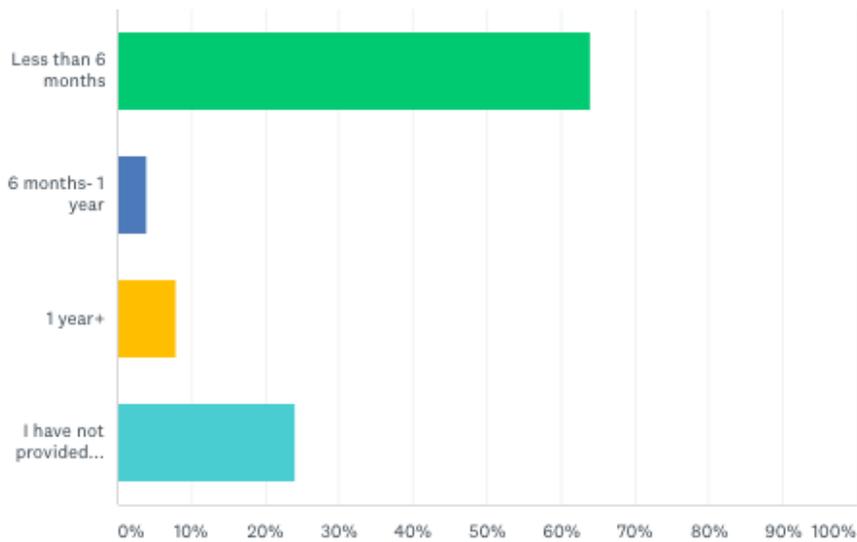Figure 1. Length of time health care providers have been using virtual care (self-report)
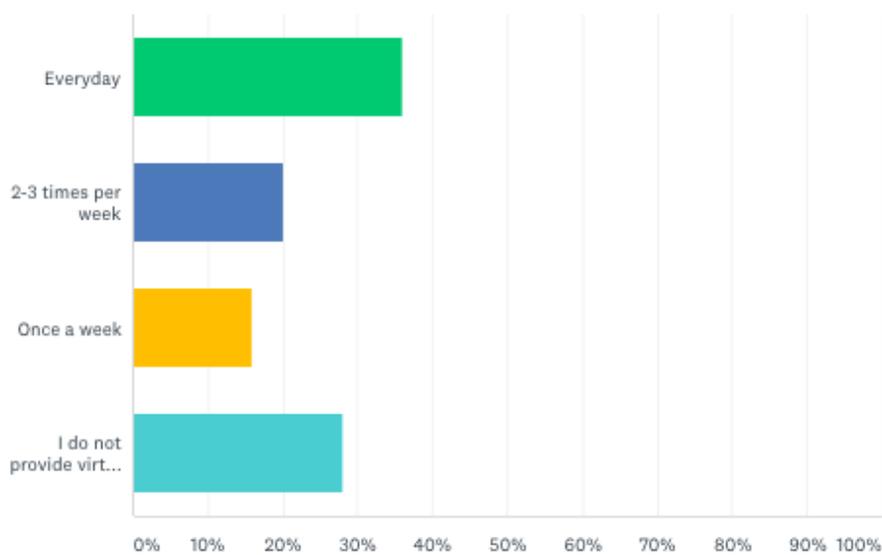
Figure 2. How often health care providers report using virtual care (self-report)

In our sample of 25 health care providers, 60% (n=14) answered "*agree*" or "*strongly agree*" to the question: "*generally, virtual health care is a good addition to medical services*". Approximately 8% (n=2) of participants answered "strongly disagree".
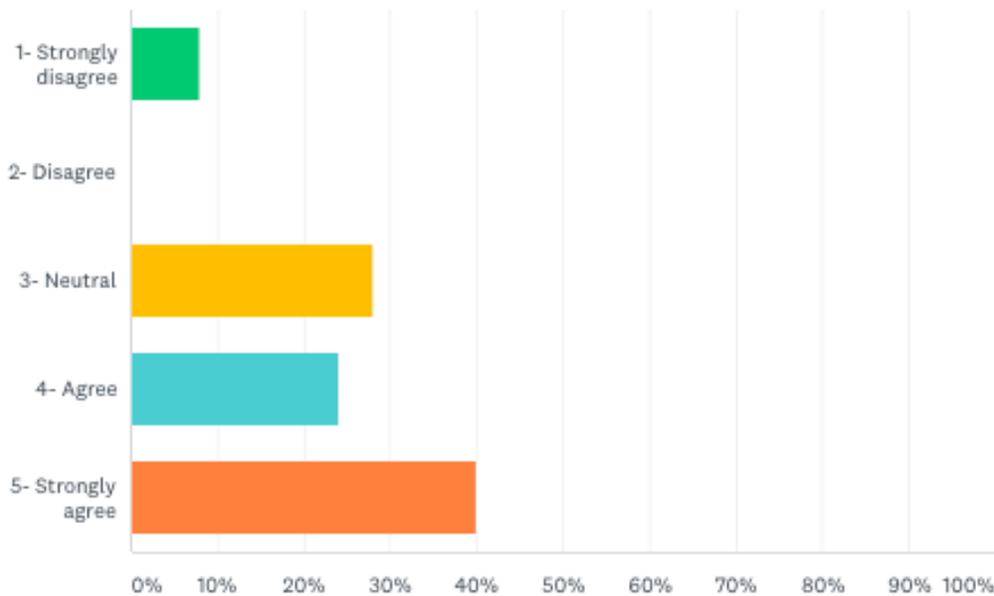
Figure 3. Provider's response to the statement, "generally, virtual health care is a good addition to medical services"

For our open-ended survey questions on the benefits and challenges of virtual care, a few patterns emerged. The two most common benefits cited by health care providers was that virtual care offered greater flexibility for the patient and the provider. One provider stated, "*virtual is more convenient for patients, and allows small issues to be dealt with quickly.*" Another care provider added, "*[virtual care] allows for flexibility of timing for the patient*". Most responses from providers around the benefits of virtual care focused on the patient experience.

The challenges brought up by health care providers were more detailed and numerous. While some were unique to the provider's profession, three common patterns emerged. The first challenge is the limited scope of practice that could be done through telephone or videoconferencing. This encompasses the fact that providers are unable to perform hands-on physical examinations and therefore have increased difficulty obtaining outcome measures. The second challenge, indicated by eleven providers was communication difficulties with certain populations. This includes those with hearing/speech issues, language barriers, the elderly, special needs children, and those with cognitive impairments. The third

pattern, indicated by nine providers, indicated lack of appropriate technology such as a stable internet connection, headsets, and large private office space for conducting virtual visits. Rapport was also an issue. One health care provider stated: "*not being able to assess the patient in person and not seeing their facial or body language, I'm uncertain if they are really listening or understanding.*" For our open-ended questions surrounding factors impacting uptake and sustainability, two suggestions were repeated by health care providers: (1) more guidance and education for health care providers on virtual care and (2) high quality technological equipment and access to IT support for health care providers, clerical staff, and patients. Given how quickly COVID-19 progressed, managers and providers had to react quickly in the implementation of new guidelines regarding virtual care delivery; 14 participants brought up concerns around guidance and education for staff. These included appropriate procedures and efficient workflow policies. Technology and equipment issues were also a concern; 13 care providers brought up technology as an important component of uptake (Appendix C) and 8 providers cited technology as an important component of sustainability (Appendix C). For example, one provider stated, "*access to technology like headsets make a big difference*", and another stated, "*[we need] stronger Wi-Fi in our area and office areas that are set up well for a clear picture and full view*", and another mentioned, "*[we need] individual spaces that allow for a quiet environment, space for the therapist to be able to back up and be seen fully on camera for demonstration of exercise and or transfers, and better computers and speakers systems within those computers*". Eighteen health care providers interviewed in-person or through the telephone provided detailed feedback on their experiences with virtual care (Appendix D). Profession specific challenges were summarized (Appendix C).

4.2 Manager perspectives

Eleven managers responded to the email survey. Eight out of 11 managers reported using virtual care for less than four months. Generally, managers held more favorable views towards virtual care as compared to providers. For the statement, "*generally, virtual care is a good addition to medical services,*" all managers (100%) selected either "*agree*" (n=5; 45%) or "*strongly agree* (n=6; 55%)." No managers

selected "*neutral*," "*disagree*" or "*strongly disagree*". The main benefit of virtual care cited by 64% of the managers (n=11) is the convenience it affords for the clients and their caregivers. Ten unique challenges were brought up by the managers, the three most commonly cited issues were (1) technological challenges such as unclear phone lines and slow internet, (2) difficulty maintaining therapeutic relationships and establishing rapport with clients and (3) how some services are impossible to deliver without an in-person visit.

Seven unique suggestions came out of the results for uptake and sustainability (Appendix E). The two main suggestions for the uptake and sustainability of virtual care from managers respectively are (1) to offer user friendly programs to patients and providers (2) to make established processes and training for staff, including guidelines, quick reference sheets, and email templates for their staff. Other suggestions brought up by managers included more time to allow staff to be able to practice with the software. This could be done by asking staff to install virtual programs earlier. Other recommendations included to increase information about virtual care use, have more technology support for all staff and to give incentives to providers. Detailed data and summary of groupings can be found in Appendix E.

5. Discussion and recommendations

Practical experiences have been gained through the use of virtual care in during the COVID-19 pandemic at PMH. Ensuring client, health care provider, and manager perspectives are accurately reflected and understood is a key factor in the sustainability of virtual care in PMH. Analysis of testimonials from health care providers and managers at Prairie Mountain Health (PMH) combined with client surveys conducted in Canada indicate clients in PMH are open to the implementation of virtual health, and expect virtual care to become an addition to standard care after COVID-19 restrictions are lifted. However, there appears to be a discordance of attitudes between health care providers, clients, and managers in PMH. In our environmental scan, 5 out of 23 provider respondents indicated they do not believe virtual care is sustainable in their practice (Appendix C). One provider stated, "*virtual care is not sustainable for 95% of therapy patients*." Provider acceptance is an important enabler for the

sustainability of virtual health care services. Hence future efforts may need to pay special attention to what is required for providers to devote time and attention to implementing virtual care in their clinical practices here in PMH.

There are existing challenges that are inherent to virtual care, for example, certain health care procedures may be impossible to deliver. However, there are also various challenges that can be addressed through education, technology, or changes in workflow. The first challenge that was found with implementing virtual care is the lack of education/official training for Canadian providers. This can be contrasted with the United Kingdom, where virtual care delivery is taught as part of a health care student's educational curriculum. Two providers in our study mentioned that familiarity and experience with virtual care is a critical factor for sustainability. One care provider stated, "*once a [health care provider] gets more practice, they'll figure out when clients need to come in for an additional visit*". In Canada, where virtual care delivery is not a part of the rehabilitation therapy, nursing, or medical curriculum, health care providers may benefit from additional mandated and rigorous training surrounding virtual care delivery from current employers. The second challenge with virtual care centers on technology. In our project 5 health care providers stated that familiarity with the virtual care technology by all staff is needed for virtual care to be sustainable in their health care setting. The third challenge with virtual care is the difficulty of not having established procedures and workflows. Staff are needing clear direction on virtual care delivery and logistics for their specific disciplines.

The results of our project must be considered in the context of several limitations. Firstly, we were unable to conduct a pilot test of our survey questions and certain questions in the survey were more general in nature and considered ambiguous. As a result, we had difficulties eliciting specific responses to our objectives on uptake versus sustainability. Secondly, our data was collected through a convenience sample that was distributed widely through a combination of mail forwarding and word-of-mouth, therefore, we are unclear on the response rate of participants - and our results may disproportionally reflect the opinions and attitudes of those who are invested and interested in virtual care. Lastly, data

collection took place over a period of two weeks, and the results could not be transcribed or validated by a second reviewer due to time constraints. Future studies can consider following up on participants six months after using virtual care to get a richer understanding of the benefits, challenges, and sustainability of virtual care.

Our project makes three specific recommendations based on the challenges and suggestions for uptake and sustainability made by PMH providers and managers.

Recommendation #1: Provide encouragement and training for all health care providers and clerical staff on virtual care in PMH.

We recommend making learning the tools required for virtual care a priority. Currently, staff are relying on one's own experiences or that of immediate teammates to navigate technology required in virtual care. We recommend making department-led innovation to create formalized and interactive training modules for the tools of virtual care. Additionally, we encourage increasing patient awareness on virtual care options.

Recommendation #2: Establishing standards, processes, and guidelines on workflow involving virtual care that is tailored to each department/office and the recognition that certain situations are not amenable to virtual care.

The presence of established procedures for delivering virtual care is the most commonly cited barrier to health care provider's continued participation and engagement in virtual care at PMH. We recommend working with individual departments on developing specific processes and workflows that is efficient and sustainable in the long term. Further, clarity around what situations are acceptable for virtual care versus in-person care. A preliminary list is provided in Appendix F.

Recommendation #3: Provide appropriate technological support and equipment to providers and designate physical spaces for delivering care.

Providers need a safe, quiet, and private space with up-to-date technological requirements. They also require an easy-to-use program combined with reliable internet access to help with the adoption of virtual care for patients and providers alike.

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Appendix A: Consent Form

| | Consent for Testimonial | Interprofessional Student Research Collaboration
Randie Murdy, Megan Asham & Serena Chen
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150 McTavish Ave E
Brandon, MB R7A 2B3 |

PRAIRIE MOUNTAIN HEALTH
SANTÉ PRAIRIE MOUNTAIN

Our aim of this study is to understand how interdisciplinary teams in Prairie Mountain Health can use telemedicine in comparison to in-person care to benefit patient outcomes and care provider satisfaction. The aim aligns with the goals of Prairie Mountain Health to increase innovation, sustainability, access to care, service delivery and overall health status throughout the region. Please see attached project description.

This research collaboration will run from June 1, 2020 to June 26, 2020. With results presented on June 25th, 2020 to potential stakeholders and management.

Research will be conducted through literature reviews of evidence-based practice, observation of virtual health visits and voluntary testimonials.

Clinicians willing to provide a testimonial have the right to revoke their testimonial at any time and may choose to no longer be observed or participate in the study. A choice for testimonials to be confidential will be provided and if chose, the clinician will appear as "anonymous" in the final results. The clinician's identity will be limited to only the Interprofessional Student Research Collaboration team and their respective managers.

For further inquiries please contact:

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I, _____, willing volunteer my testimonial regarding virtual health care to the Interprofessional Student Research Collaboration to be presented to potential stakeholders and management

Signature and designation_____ Date_____

☐ I am accepting of my name and designation to be attached to my testimonial

☐ I wish to remain anonymous

Appendix B: Survey questions

Survey for providers:

1. How long have you worked as a health care provider?

    a. 1-5 years
    b. 5-10 years
    c. 10-15 years
    d. 15+ years

2. How long have you provided virtual care?

    a. Less than 6 months
    b. 6 months - 1 year
    c. 1 year+
    d. I have not provided virtual care

3. How often do you provide virtual care?

    a. Everyday
    b. 2-3 times per week
    c. Once a week
    d. I do not provide virtual care

4. Generally virtual care is a good addition to medical services?

    a. 1 - strongly disagree
    b. 2 - disagree
    c. 3 - neutral
    d. 4 - agree
    e. 5 - strongly agree

5. What are some of the positives of virtual care that you have experienced?

6. What are some of the negatives of virtual care that you have experienced?

7. What is needed for virtual care uptake by health care providers?

8. What is needed for virtual care sustainability in your practice?

Additional questions for managers:

1. What programs/services do you manage

2. Approximately how many regulated health care professions do you manage?

3. Does your program use MBTelehealth?

4. Does your program/service use other virtual care delivery methods (Microsoft teams, phone calls, remote monitoring)?

Appendix C: Survey results - providers

BENEFITS	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	Totals
Flexibility for patient	1	1	1				1		1	1	1	1	1	1	1		1	1	1	0	1	1		1	1	18
Flexibility for provider	1			1			1										1							1		4
Good option during COVID - reduced exposure to transmittable diseases			1		1											1	1									4
Great feedback from patient										1													1	1		2
Allowed support people to be at appointment														1										1		1
Empowers patients to take care of chronic conditions														1												1
Easier to keep conversations on track ("easier to stop chit-chat")																	1									1
Less no shows for appointments																1	1									2
Regular contact/better follow up rates																		1			1					2

CHALLENGES	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	Totals
Communication difficulties with elderly, those with cognitive issues, hearing issues, special needs kids (uncertain if p	1	1	1	1		0				1			1				1			0		1	1			9
Limits physical examination/diagnostic ability, unable to obtain outcome measures like ROM etc	1				1	1			1	1		1	1			1		1	1	1		1				12
Extra care needed to maintain sensible workload	1										1						1									3
Extra care needed to adjust patient expectations	1																1									2
Can't correct form in patients doing exercises					1																					1
Rapport difficult to maintain					1												1									2
Texts can be misinterpreted					1																					1
Extra consent forms take time, difficulty with booking, virtual visit forms lengthy					1										1											2
Poor wifi/technological challenges/physical environment challenges/angles limited by camera					1							1	1			1	1		1		1	1	1			9
Some patients prefer face-to-face interactions/patient dissatsifaction/patients lack resources							1			1												1				3
Patients reaching out to personal phone numbers							1																			1
Highly emotional interactions difficult														1			1									2
Health care provider dissatsifaction (i.e. feeling bored, disconnected)																	1	1								2
Some visits can take double the time																	1									1

UPTAKE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	Totals
Appropriate recognition of virtual care as workload activity	1															0										1
Financial remuneration ("more robust billing structure including age and complex patient modifiers")	1							1									1								1	4
Good equipment/spaces/videocameras/user friendly platforms (headsets make big difference) for providers		1		1	1			1	1		1	1	1				1	1		1		1				13
Time to learn and practice (experience/proficiency)			1		1												1							1	1	5
More guidance/education for providers on how to deliver care virtually/ "proper guidelines" (i.e. SPOT module)						1					1				1			1	1		1	1				7
Equipment videocameras for patients									1	1																2
Patients need more education on virtal care									1								1									2
Feedback from patients												1														1
Discussion with other providers about what is working																								1		1
Streamlined process																								1		1

SUSTAINABILITY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	Totals
	0																						1			1
Participant indicated they do not believe it's sustainable in their practice ("not sustainable for 95% of physiotherapy pati	1	1	1		0			1									1									5
Technology - access to video meetings (therapy), user friendly platforms		1		1		1						1	1		1		1		1				1			8
Support from the respective licensing colleges								1			1						1								1	3
Patient education										1			1													2
Collaboration with rural sites										1																1
Proper guidelines, "how to obtain objective assessments"													1		1											2
Client choice																					1		1	1		3
Mindset change/shift																						1				1

Appendix D: Interviews results - provider

Observation Notes - Therapy (n=14)

Pediatrics PT
Adult outpatient OT
Adult outpatient PT
School aged OT
School aged PT

Benefits:
- Happy with teams, great for interdisciplinary work
- Great for follow up visits, not as much for initial
- Great for follow ups for her distance clients
- Not enjoying, would rather see her patients
- Enjoy the option that her patients can seek treatment- virtual is better than none
- The ability to move pre-ops online, a lot of wasted time when they come in for the day. It is more efficient virtually
- Teams is working great
- Will use it in the future as an option- it's great to have as an option to provide
- Parents are more involved than ever, they are able to give feedback and connect their goals and concerns with the therapist
- Great for fine motor
- Can do reassessments, just not as easy
- Getting the parents involved is easier because they are there- more readily available to answer emails, etc.
- Its been great for educating the caregivers
- Better than nothing- still able to get some therapy
- Great connecting with parents and caregivers

Challenges: general
- Language barriers
- Technical difficulties
- Problems with consent forms being signed electronically
- Video angles / distance from camera
- Clients/guardians are overwhelmed with information. Varying education level of client/guardian
- Non tech savvy, don't have an email
- Not enough equipment for everyone
- No phone reminders
- Privacy to do treatments in the office is not sufficient
- Buffering, unclear connection
- Poor Wi-Fi signal in their treatment area
- Positioning, MMT, movements cannot clearly see
- Technology

- Video is better than a phone call
- Sharing a space
- Thin office walls
- Language barriers
- Technology of provider and client

Challenges: therapy specific
- Cannot get observations and tests to perform what they normally do in clinic.
- No ability to collect data and record for future reference (ROM, MMT)
- Demonstrating what they want the parents to do
- Lack of input from client/guardians
- Lack of hands on is leading to lack of testing and observations, less effective treatment?
- Needs to be objective, but can only be subjective in treatments
- Splinting/wound care cannot be done
- Anything in the acute stages cannot be seen over video/phone
- Patients want to come in
- For education purposes it is great, prehab, injury prevention etc
- Cannot treat, cannot assess
- After you've seen them once you can decide if they are a good candidate
- Cannot start virtual, must at least see once and re-assess
- Providing corrective cues
- No hands on component
- Home set ups aren't always the best
- Unable to see
- Video angles
- Cannot give standardized testing- would not be comfortable with the results
- Low focus, stimulation problems, hyper active, hyper stimulated
- Working with what the family has for tools to care (do they have paperclips, pencil, coins, etc.)
- 100% is client dependent
- Planning equipment, home resources
- Motivation, distractions, positional cues

Recommendations:
- Education of ability to screenshot and draw on the picture to show the client/guardian "this is what it looks like now, this is what the end goal is" and then to save those pictures on the notes for reference
- Access to external device i.e. headset, better camera
- For PEDS: having a doll with movable joints and the ability to manipulate to show caregiver what to do. Easier to show than tell
- Complying a working list of laymen's terms, therapists think like therapists and often have trouble thinking of analogies or phrases to say to parents or clients of what they want them to do. i.e. "Adduct and Abduct your foot" → "can you move your foot like a windshield wiper"
- Equipment, and working computers/speakers/microphones
- Have private rooms that can be shared, for one therapist at a time. Have the new equipment, Wi-Fi, etc. more private and does not take up shared offices, or treatment spaces
- More efficient set up and consent, spending too much time at the beginning signing forms
- A smart-board so they can see their patients movements better, and the ability to freeze the frame and draw to make observation notes
- An anatomy program to screen share would be very helpful for education of patients

- Guidelines of who should be offered it, but very therapist judgment based not structured- using their clinical judgment
- Need own equipment, sharing is not feasible
- Redo the information form for patients, too wordy right now
- Need a headset
- Redesign the forms to be more user friendly
- Better internet for providers

Additional comments:
- Making a protocol about what to do if something was to happen to the Therapist. The only phone number given is the office #, they do not know what address to give to 911. Therapists are too be alone in a room, with signage on the door not to enter. How long could they be down on the floor for before help is reached? We collect all the information for patients on this call, emergency contact, address etc. Need to have provider safety protocols
- More clarification on paperwork. i.e. if there are 2 adults in the house, do they need an additional emergency contact?
- Much more documentation time and prep/follow up
- Not beneficial and inductive of learning to be completely virtual care
- Great for educational purposes, can send videos, handouts etc. especially for caregivers
- Group setting would be great to connect others with similar conditions, or caregivers, across the region
- Concerns about patient outcomes and if they would be able to effectively have treatments. Follow ups = great
- Not for cardiac or pulmonary rehab. Too many risks
- The setting is loud, they need a designated area without background noise
- Therapy is not as efficient, would not be able to see as many patients in a day
- Fear of risking their license by signing off on notes without actually being able to gauge patient's ability. They can very easily miss something that they would not miss in person.
- Convenience for travelling is great
- COVID-19 scared patients and they might not want to come in often now
- Good for distance patients and those who aren't the healthiest to stay home

Observation Notes - Nursing (n=1)

Chronic Pain management nurse (with permission)

Benefits:
- Able to see almost the same amount of patient as they would in person at this time. Figuring out schedule, have been very ahead of schedule lately, predicts ability to see many more patients via virtual care than in-person. Saw about 20ppl in person pre COVID-19, now sees 15 people over phone.
- Ability to connect with nurses in other facilities for consultation
- Believes will help time restrictions

Challenges: general
- MBTelehealth: difficult to book
- Limited accessibility for patients, limited availability for both patients and providers
- Getting physicians on board with virtual care
- Getting managers on board with virtual care

Challenges: nursing specific
- Seen as an extra responsibility
- Not great for initial assessment
- Cannot palpate/auscultate

Recommendations:
- Proper education on virtual care
- Using for Ward nursing as well ex.) family conferences
- Increased education on using Microsoft teams
- Care providers to remain flexible
- Would be a benefit if she was able to video conference everyone, increased satisfaction when seeing her patients

Additional comments:
- "In my opinion I believe the Pros of virtual care outweigh the cons"

Observation Notes - General Practitioners (n=3)

Benefits
- There are talks to see if it stays indefinitely, I'm a fan of virtual care, some things are easily dealt with; virtual visits can triage, do medication refills (face-to-face is redundant, not necessary, especially if it's the same dose)
- Also beneficial for having educational sessions (i.e. for someone who has high cholesterol, I tell them to do this, eat that, I don't need to see them for face to face for that)
- UTI, if uncomplicated (i.e. dysuria)
- Once physicians get experience with triage over the phone – they can tell what's urgent, what's not so urgent, can reduce the number of patients that need to come in

Challenges: general
- Lack of access to a telephone, laptop, internet (more prevalent in low-income families)
- People taking telephone consultations less seriously (i.e. think I can just call back - that thought pattern can become problematic if it perpetuates)
- Cannot see the same patient twice in the same day (i.e. telehealth then in-person)
- Challenging to take calls back-to-back for more than 30 minutes, feels like you're working in a call center – boring

Challenges: medicine specific
- Increased incidence of diagnostic doubt - physicians are relying on patients with no clinical background to describe what they see and how they're feeling (i.e. different words can mean different things to patients, for example, a patient may use the words "woozy" to describe nausea or pre-syncope, a patient may not have the vocabulary to describe what they're experiencing)
- Missing red flags - often times, physicians rely on physical cues like facial expression or body language. Some patients will downplay their feelings of discomfort
- More difficult to stop patients from going on a tangent (i.e. in the past, physicians can use therapeutic touch to gently nudge the conversation back on track or to convey empathy when delivering difficult news)
- Some physicians have observed that patients are less likely to do "homework" (i.e. having their list of medications ready)
- Some physicians have observed that patients are harder to track down because patients do not take telephone virtual care visits as seriously - can lead to frustration and burn out for the physician and less optimal care for the patient
- Patients need to understand they may be asked to come in on the same day
- Teaching concerns
- "You can only learn the art of medicine through patient interaction"
- Access to lab - at the moment, they're doing overkill with infection treatment, we're not supposed to send people to lab unless essential - the reasoning = virtual care, the lab cannot do anything through virtual care, there's potential for exposure in the labs, the labs have slowed down totally

Recommendations
- Most care needs to continue in person, and only some things should be done through virtual care
- Medication/prescription renewal
- Signing forms
- Follow-up

- Checking numbers
- Ongoing care
- First encounters mostly need to be in person
- More patient education surrounding virtual care
- It is available
- prepare for it as you would a typical doctor's visit
- care still requires the patient to come in occasionally
- wait if the physician does not call at the exact time - be at home (the physician often does not have the flexibility to "just call back at a later time")
- What clinicians are enjoying/benefits
- Reduced risk of exposure to COVID-19
- Some patients take to it fantastically

Additional comments
- What was your experienced with virtual care after COVID?
- Before COVID - occasional patients using virtual care/through the telephone
- No patients in the waiting room, we explained to patients that the parking lot is the waiting room;
- Seeing patients in their own vehicles - reduces time for clean up
- How does billing work with COVID/are there billing changes?
- Virtual visits does not pay the same as what a physical visit would pay,
- Fee for service will see a drop in income
- I would very much like to get most of my patients back into the office
- I would love to see the simple stuff being done through virtual visits
- I don't think it'll be good medicine to stick to the situation we have at the moment
- For most family physicians, they've only been working with virtual care for 2 months, people need to be taught this as part of the curriculum, it's about being comfortable, with more practice, physicians will figure it out

Appendix E: Survey results - manager

BENEFITS	1	2	3	4	5	6	7	8	9	10	11	Totals
Convenient for clients, client's families, reduced travel cost for client	1		1	1	1		1	1	1			7
More anonymity	1											1
Can see larger quantity of patients, visits not as time consuming		1										1
Alternative to in-person care during COVID/safety/decrease PPE cost	1				1	1	1		1			5
Less intimidating for clients					1							1
Timely access to specialists							1					1
Clients easy to reach at home										1		1
Can review meds + lab work on the phone										1		1

CHALLENGES	1	2	3	4	5	6	7	8	9	10	11	Totals
Rapport difficult to establish and maintain/therap.relationships hard	1				1	0	1		0		0	3
Patient may be distracted during a virtual visit	1											1
Some services impossible without in-person delivery	1				1							2
Marginalized individuals do not have access	1	1										2
Some patients have non-modifiable challenges (hard of hearing)		1										1
Vital signs are not recorded between visits		1										1
Technological issues/phone lines not clear/internet slow				1		1		1	1			4
Space and accessibility to equipment					1							1
Increased staff requirements (clerical)								1				1
Novel/unfamiliarity/feelings of resistance to change										1		1

UPTAKE AND SUSTAINABILITY	1	2	3	4	5	6	7	8	9	10	11	Totals
Timely installation of software (Teams), practice	1			1						1	0	3
User friendly programs to patient and provider	1	1		1	1		1	1				6
Increased support to staff (IT etc)	1			1			1					3
Established processes/training (Quick reference sheets (info sheets, checklists, templates)		1				1	1	1	1			5
Easily assessible electronic records	1			1								2
Technology/equipment			1		1	1						3
Proven benefit/incentives for providers								1		1		2

Appendix F: Situations amenable to virtual care

Therapy: Pediatric occupation therapy	
In person delivery	**Virtual care**
Assessments	Follow ups
Use of modalities	Education
Safety concerns	Developmental concerns
Home needs	Handwriting/fine motor coordination
Vehicle accessibility needs	Progressive chronic illnesses or non-acute injuries
Sensory motor	Neurodevelopmental concerns
	Self-regulation/therapeutic groups
	Feeding concerns/failure to thrive

Therapy: Pediatric physiotherapy	
In person delivery	**Virtual care**
Assessments	Follow ups
Use of modalities	Education
Safety concerns	Plagiocephaly/torticollis
Newborn brachial plexus	Developmental concerns
Orthopedic issues	Delayed basic motor skills
Acute neurological	Delayed gross motor skills
Musculoskeletal with or without pain	Toe walking
Strength concerns	
Walking concerns	

Therapy: Adult out-patient occupational therapy	
In person delivery	**Virtual care**
Assessments	Follow ups
Use of modalities	Education
Safety concerns	Patients transitioning back into the community
Any condition in the acute stage	Chronic conditions
Splinting/wound care	Patient received prior care for similar complaint
Skin integrity issues	Improvement of leisure activities
Lymphedema treatment	Modified cognitive assessments

Therapy: Adult out-patient physiotherapy	
In person delivery	**Virtual care**
Assessments	Follow ups

Use of modalities	Education
Safety concerns	Chronic conditions
Falls risk	Post-acute conditions, post-acute post-operative
Any condition in the acute stage	Neurological conditions
Soft tissue injury	Patient received prior care for similar complaint
Musculoskeletal issues with or without	Improvement of leisure related activities

Nursing	
In person delivery	**Virtual care**
Palpation, auscultation, percussion	Planning patient care
Wound care, ostomy care, foot care	Receive and analyze diagnostics, screening, and clinical data
Insertion of devices for assessment or treatment (catheter IV line ,nasogastric tube, emergency airway)	Counselling about emotional, spiritual, social, or educational matters
Administer prescribed substances – medications, blood and blood products, enema, high-flow oxygen	Providing disease prevention and health promotion strategies
Ultrasound for bladder volume, fetal heart monitoring	Develop rapport within a therapeutic relationship
Deliver a baby	Collaboration with physicians, PA, pharmacists, advanced practice RN, NP, and other health care professionals
	Consults and recommendations

Medicine	
In person delivery	**Virtual care**
First encounters	Follow up appointments
If patient has language barriers	Signing forms
Any report of new symptoms	Renewal of medications with no changes in symptoms
Any condition that requires palpation, auscultation or percussion for diagnosis	Providing on-going care (i.e. anti-coagulation therapy)
Delivering sensitive news	Providing travel medication
Chest pain	Reviewing lab or images
Shortness of breath	Mental health problems
Loss of neurological function	Skin problems
Ear pain	Urinary and sinus infection
Cough	Sexual health education
Abdominal symptoms	Those monitored with home devices/lab tests
MSK injuries	

Appendix G: Interprofessional collaboration reflection

Megan Asham

Working in an interdisciplinary team is made easy when the teammates you work with are engaged and open to learning. Both of my partners in this project are confident in their careers, independent thinkers, ambitious problem solvers, goal orientated, all while being responsible and reliable day in and out. I was able to develop new important skills that will directly transfer into my future career goals. The gaps in our knowledge were covered by thought-provoking conversations and I was able to learn about two completely new aspects of healthcare. It broadened my views on the health care field and I strongly believe it has made me a better provider for the future. The challenge I faced was opening my mind to other points-of-views and constantly reflecting on each situation to perceive what the best care scenario would be. Overall, I developed new skills, and confidence and trust in others to provide overarching better care together as one team.

Randie

I've have had the opportunity to work as part of an interdisciplinary team over the month of June with Serena, a medicine student, and Megan, an occupational student collaboratively on a project for Prairie Mountain Health. From these two I was able to broaden my knowledge base and gain better competency of their respective disciplines. I cannot say enough about the benefits that interdisciplinary cooperation has on our health care system. In working with them we were able to have ideas come to fruition with consideration of each of our careers and how they would affect health in general. I truly believe that to achieve the best outcomes in healthcare, it is essential to approach decisions through multiple modalities with the input of a professional care team. I found that working together with Serena and Megan was seamless and offered me a chance to develop skills that I can integrate into my future practice. A challenge may be the allowance of keeping ideas to be free-flowing and discussions to be stimulating as sometimes we tend to work within the blinders of our own professions. All in all, I found great joy in creating new evidence together as a team that will reflect holistic care for our healthcare system overall.

Serena Chen

This interdisciplinary collaboration has very rewarding. Our team had a good culture of camaraderie, trust, and reliability. There were a few factors that made our team run effectively. Firstly, we created an environment where we felt comfortable sharing our thoughts and ideas. This helped us establish project goals early on. Secondly, everyone in the team listened very attentively to one another, including asking for clarification and made the effort to step outside our own profession's perspectives. This helped us understand where ideas came from, creating a shared vision for the final product that incorporated the perspectives of all our professions. Lastly, we found similarities in shared values. Like our curiosity for other professions' competencies, and our drive for continuous improvement. The main barrier I faced was the lack of knowledge about the roles of other health care professionals, so we took some time familiarizing ourselves with the scope of practice of each other's professions in the first week. In the last week, our group became interdependent on one another's personal strengths to complete the project. Moving forward, I will take the teamwork skills I learned from my teammates and apply them to future interdisciplinary opportunities.