

Access Impacts to Primary Care Rehabilitation Practice During the COVID-19 Pandemic

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Abstract

Introduction: The COVID-19 pandemic introduced significant changes in delivery of primary care health services. Rehabilitation professionals working in primary care experienced major changes to their practice. This upheaval impacted both *how* patients accessed care, and *who* could access care. Some of these changes, including virtual care, may continue. An evaluation of the access impacts associated with these practice changes is important, so that we understand how these changes impacted equitable access, and to help inform which practice changes should be continued into the future.

Purpose: To explore changes in access to primary care rehabilitation practice during the COVID-19 pandemic from the perspective of healthcare providers, applying a lens of equitable access.

Methods: In this qualitative descriptive study, thirteen rehabilitation professionals working in primary care in Manitoba and Ontario participated in semi-structured interviews, timed 9-10 months into the pandemic. The interview questions explored the practice changes and access impacts. Qualitative analysis steps included data immersion, coding to identify the access impacts associated with each practice change, then application of Levesque et al.'s Patient-Centred Access to Healthcare framework as a lens of equitable access to inform the findings.

Findings: Primary care rehabilitation professionals described practice changes that both enhanced and reduced access, some of which had equity-specific impacts. Virtual care, outreach activities, and wellness checks all enhanced equitable access for some patients, making care more accessible for patient populations who may have been underserved. However, for some patient populations, the shift to virtual care created new access inequities via new access barriers, resulting in some patients completely unable to reach care.

Conclusion: The findings from this thesis indicate there were practice changes that enhanced equitable access, yet also suggest that some of these changes, specifically virtual care, led to new access inequities. Access, from an equity perspective, was found to be negatively impacted when the organizational change(s) did not align with patients' abilities and resources. As primary care organizations and clinicians consider which changes should be kept into the future, the findings from this study, and others, should be considered to ensure all patients gain or continue to have equitable access care.

Acknowledgements

This thesis project was three years in the making. I started, pre-pandemic as a way to channel my advocacy for equitable access and challenge myself academically. Shortly after starting my graduate studies, our world, and my life, was disrupted by a global pandemic. These past three years haven't been easy. My family has experienced lockdowns, school and daycare closures, changing work situations, the closure of university and a shift to online learning. My clinical job changed, and I found myself redeployed to the front lines of the pandemic. There were many times that juggling graduate studies, the ever-changing family and work situations, and facing the risks of the frontlines was no easy feat. Despite this, I have managed to see this degree to completion. Considering these challenges, within these acknowledgements, I would like to recognize the following groups, without whom the completion of this graduate degree would not have been possible.

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Dedication

This thesis is dedicated to my children.

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1.0 Introduction

The COVID-19 pandemic arose from an infectious respiratory disease caused by the novel coronavirus.¹ Canada's first case of the virus was detected in January 2020, with infection rates steadily increasing thereafter.² Governments and provincial public health authorities across Canada implemented measures intended to slow the spread of infections, including minimizing interactions with others, physical distancing, and advising Canadians to stay at home whenever possible.³ The healthcare system, including primary care clinics, responded to the pandemic in numerous ways, including shifting to provide care virtually (using telephone or video), changing providers' roles and scope, and redeployment of the healthcare workforce.^{2,4} Collectively, these changes impacted how people access primary care.⁴ Although these health system changes were required to respond to the pandemic, there is a possibility the changes may have impacted patients' ability to access care, including in ways that amplify or address unequal access.

Access to healthcare is an important determinant of health, and is a principle of health equity.⁵ Access is more than simply obtaining health services. It is a complex interaction between health systems and health users, along a continuum of obtaining and benefitting from care.⁶⁻⁸ Access to healthcare is multidimensional, and ensuring access involves ongoing evaluations on how health system changes may impact different populations' ability to access care.⁵ When not addressed, access barriers can lead to health inequities,^{5,7} and taking steps to reduce these barriers is one part of striving towards health equity.

Primary care is a health sector that aims to reduce access barriers. Equitable access to comprehensive primary care – that is, equal access to care based on equal needs⁵ – is a strategy to improve health equity.^{9,10} For the past two decades, the Government of Canada has committed to improving access to comprehensive primary care, as a strategy towards improving the health of all Canadians.¹⁰ These commitments have resulted in the creation of interdisciplinary care teams, involving a range of different professionals so Canadians can have access to the appropriate resources they need to maximize their health outcomes.¹¹ In an effort to improve access to appropriate, timely care, and better chronic disease management, rehabilitation professionals, including respiratory therapists (RTs), occupational therapists (OTs), and physiotherapists (PTs) are members on some of these primary care interdisciplinary teams.

In early 2020, the COVID-19 pandemic introduced significant practice changes for rehabilitation professionals working in primary care. This rapid time of upheaval, including a shift to virtual care, presents many unknowns about patients' abilities to access care. There is potential that for some patients, these changes may have improved access, yet for others, more, or different barriers may have been introduced. Considering the practice changes as a result of the COVID-19 pandemic, an evaluation is needed to understand how these changes impact access, and to explore how this affects different populations, especially given some of the changes made may continue into the future.

1.1 Research purpose and objectives:

Research Purpose: To explore changes in access to primary care rehabilitation practice during the COVID-19 pandemic from the perspective of healthcare providers in Manitoba and Ontario, applying a lens of equitable access.

Objectives:

1. Describe practice changes that occurred during the COVID-19 pandemic, as described by primary care rehabilitation service providers
2. Identify emerging changes in access to primary care rehabilitation as a result of identified practice changes.
3. Examine changes in access to primary care rehabilitation through a lens of equitable access.

2.0 Literature review and background

2.1 Purpose of literature review

The intent of this literature review was to explore concepts and foundational literature related to access and equitable access, relevant to the specific healthcare setting and context where this study took place. This study occurred in a primary care setting, and the subjects were rehabilitation professionals working in primary care. The practice and access changes explored were specific to changes implemented during the COVID-19 pandemic. As such, I structured the literature review in a staged process, examining broad concepts such as access and equitable access, and further narrowing by adding search concepts of primary care or rehabilitation.

2.2 Method of literature review

This literature search was exploratory, to develop a broad overview of the concepts found within this thesis proposal.¹² It was structured under the guidance of a professional librarian, and was conducted in January and February 2021. I searched the Medline Ovid and CINAHL databases for the major concepts of health services ‘access’ and ‘equity’. Within these major concepts, I added specific synonyms and keyword searches, including ‘equitable access’. After conducting this broad search on health services ‘access’ and ‘equity’, I conducted iterative searches narrowing to secondary concepts. These searches included health services ‘access’ and ‘equity’, with ‘primary care’ or ‘rehabilitation’. The ‘rehabilitation’ search encompassed specific terms common to rehabilitation professionals included in this study: occupational therapy, physiotherapy, and respiratory therapy. The only limit applied was language; articles in English were included.

In addition to searching the literature through the above databases, I searched key terms through the Neil John MacLean library book database. I searched major concepts of ‘healthcare’, ‘access’ and ‘equitable access’. This resulted in rich foundational literature and policy documents which contributed to this proposal.

I also supplemented the formal search by hand searching key article reference lists and web searching.

In addition to this initial literature search, when writing the discussion, I conducted a second literature search. This was also structured under the guidance of a professional librarian, and was conducted in April and May 2022. The databases searched included Medline Ovid, CINAHL, and google scholar. The major concepts I searched were related to ‘COVID-19 pandemic’, ‘access’ and ‘equity’, and after I added secondary concepts to include ‘virtual care’, ‘primary care’, ‘practice changes’ and ‘rehabilitation’. Same as my initial search, I also supplemented these search results with hand searching key reference lists and web searches. The results of this search were used to both update my literature search section, and to inform the discussion.

2.3 Access to healthcare

2.3.1 Access

Access to healthcare is a complex notion. Access is more than simply reaching health services; it is an ongoing interaction between health systems and health users, throughout the continuum of obtaining and benefitting from care.⁶⁻⁸ Levesque and colleagues define access as “the possibility to identify healthcare needs, to seek healthcare services, to reach the healthcare resources, to obtain or use healthcare services, and to actually be offered services appropriate to the needs for care”.^{7p.4}

Optimal access to healthcare is when the system meets the user’s needs: the “right service, at the right time, in the right place”.^{13p.866} It is a complex process influenced by a patient’s ability to identify and seek healthcare that meets their needs, together with the healthcare system’s ability to provide the resources to address the patient’s health needs. To understand the complexities of access, multiple authors support that to truly understand, evaluate, and operationalize access, one needs to consider it in terms of multiple dimensions.^{7,8,14,15}

Access is multidimensional

Established literature on access to healthcare agree that access is a multidimensional concept,^{7,8,14,15} however variations exist on which dimensions best conceptualize access. In this section, I will highlight key literature that contributed to the concept of access as multidimensional. I will then discuss how the dimensions have evolved over time, ultimately resulting in dimensions that better integrate patients and population needs.^{14,16}

In 1981, Penchansky et al.¹⁵ identified access to healthcare as a broad concept which was difficult to define, and difficult to evaluate. These authors were the first to suggest that access goes beyond entry into the health system, and is best represented by multiple dimensions that reflect the interplay between health systems and health users.¹⁵ Penchansky et al.¹⁵ proposed five dimensions of access as follows: *Availability*, the relationship of the volumes of resources and client’s needs; *accessibility*, the relationship between the location of the supply and the location of clients; *accommodation*, how the supply resources are organized (e.g. Walk-in vs appointment mechanisms), and client’s ability to meet these factors; *affordability*, the price of healthcare in relation to client’s ability to pay (this includes client’s perception of worth relative to cost); *acceptability*, the relationship of client’s attitudes about provider’s practice, and includes

provider's attitudes about acceptable personal characteristics of clients. Penchansky et al.¹⁵ argued that if one is trying to conceptualize access, one must consider access in terms of those five dimensions, creating a foundation to operationalize and evaluate the concept of access.

Subsequent literature on access supported this multidimensionality, yet introduced variations in the dimensions. In 1995, Margolis and colleagues⁶ advocated that to improve access, in addition to structural and financial dimensions (encompassed within Penchansky et al.'s¹⁵ dimensions), organizations seeking to improve access need to address *personal barriers*, such as language and health literacy. Margolis and colleagues emphasized how individual and population characteristics need to be accommodated so that different populations can benefit from healthcare.⁶ Their paper introduced the notion that the characteristics of health users—which includes personal barriers— affects access, and if health systems aim to improve access, their interventions need to address structural, financial, *and* personal barriers.⁶

Building on the concept of individual and population characteristics of health users, in 2002, Gulliford et al.¹⁴ introduced *equity of access* as a dimension, in addition to the dimensions of access initially presented by Penchansky et al., Gulliford et al. compliment the work of Margolis et al., stating that when addressing access, organizations need to ensure that the differing needs of populations are considered when determining resource allocation.¹⁴ Different populations with health needs may require access interventions that are appropriately differentiated to meet their needs. This may include resources in various languages, access to phone advice after working hours, or any intervention that improves access directed to the characteristics of a population with health needs. Equity of access was presented as a dimension that attends to the specific needs of a population.¹⁴

I have chosen to highlight these specific authors,^{6,14,15} as the dimensions described by these authors pre-date and influence my chosen conceptual framework, the Patient-Centred Access to Healthcare framework (PCAHC), which will be introduced further in section 2.6. The first authors, Penchansky and colleagues, were the first to introduce access as 'multidimensional', yet their dimensions had a strong emphasis on organizational characteristics, less so on the needs of a population. Over the years, literature on access has consistently supported this multidimensionality,^{6-8,14,15} yet the dimensions have evolved to better integrate patient and population attributes, as reflected in Margolis et al.,⁶ Gulliford et al.,¹⁴ and Levesque et al.'s⁷

conceptualisations of access to healthcare. When evaluating access to include considerations of equity, it is important that dimensions of access attend to both organizational characteristics *and* patient or populations needs.^{6-8,14}

Access to healthcare is a continual process influenced by supply and demand characteristics

When accessing healthcare, the ultimate goal is to preserve health and achieve a positive health outcome.¹⁴ Access to healthcare is more than the point of entry into a health system, it involves an ongoing process of obtaining care and benefitting from the services offered, along a care continuum.⁷ Access to care depends on organizational characteristics (the supply-side) and characteristics of populations seeking (the demand-side) healthcare.^{15,17} The balance of the alignment, or ‘fit’, between the supply and demand characteristics along this care continuum can ultimately act as barriers or facilitators to achieving a positive health outcome.^{7,8}

To obtain healthcare, individuals or populations need to be able to recognize a need for care, and have the ability to seek out that care.⁷ At an individual or population level, access can be subject to social factors, cultural influences, geographical constraints, and personal resources and abilities.^{7,17} Once the need for care is identified by the individual, health systems characteristics further influence access. Health system characteristics can be either barriers or facilitators, based on their ‘fit’ with the characteristics of the person(s) seeking healthcare. Supply-side characteristics include but are not limited to, service availability, wait times and referral processes, costs and geographical location, and appropriateness of available care.¹⁴ These supply and demand characteristics are interrelated, interacting together (or not) to influence access to care.^{7, 15,17}

Access and health equity

Working towards health equity is an ongoing priority for developed countries.¹⁸ Health equity is defined as “the absence of avoidable, unfair, or remediable differences among groups of people, whether those groups are defined socially, economically, demographically or geographically or by other means of stratification”.^{19np.} Equity means social justice or fairness,²⁰ whereas health inequities are differences in the health status of populations that are modifiable, unfair, or unjust.²¹ Health inequities can be caused by social, economic, or structural inequalities, including access inequalities. Achieving health equity implies that everyone, regardless of life circumstances or wealth should have a fair opportunity to achieve their full health potential.¹⁹ Margaret Whitehead’s landmark paper ‘The concepts and principles of equity and health’

defined equity in healthcare as “equal access to available care for equal need; equal utilizations for equal need, and equal quality care for all”.^{5p.434} To utilize and benefit from quality healthcare, access is a necessary first step.

Access to healthcare is an important component when striving to reduce health inequities. Lack of adequate access to healthcare can result in populations being more susceptible to ill health than others.^{5,20–22} When an individual or population experiences a health inequity, including, but not limited to, access inequities, there is potential they experience an unfair loss of ability to live to full function and pursue the range of opportunities afforded by life.²³ An example of a health inequity as a result of lack of access is as follows: Consider an individual who suffers a stroke, which affects their ability to care for themselves. To regain independent function and return home, they require intensive rehabilitation services, which do not exist in their rural setting. Instead of participating in rehabilitation to function independently and return home, the inequitable access to rehabilitation services results in this person being admitted to a care home. As illustrated in this example, and articulated within Whitehead’s definition of equity, access to healthcare is key to equity in health.⁵

Equitable access means that individuals with equivalent health needs have equal opportunity to benefit from healthcare.^{5,24} Striving for equitable access implies that barriers, including affordability or geographic barriers are reduced as much as possible to reduce health inequities. Inequities in access occur when individuals receive services according to their place in the social structure, such as being able to pay for faster access to healthcare while those unable to pay experience long waits, or when health system characteristics enable one population over another, such as providing health education materials in only one language.^{17,23}

Evaluating equitable access is challenging, due to the multidimensionality of access and the influences of supply and demand. Aday et al.^{17,23} suggest that equitable access can be evaluated by a population’s utilization of healthcare. However, Daniels²³ challenged utilization as an evaluation of access, identifying that utilization does not necessarily capture the differences in how populations and individuals access care, and does not necessarily reflect need. Depending on individual characteristics, accessing healthcare may be difficult or differentially burdensome, resulting in lower utilization rates.²³ For example, if an organization offers medical appointments only during daytime working hours, accessing and obtaining care may be differentially

burdensome depending on the individual. For some, time off work for medical appointments may result in lost income, imposing a financial burden. Certain individuals may then choose not to seek healthcare due to the financial loss. In cases such as these, where an individual does not access healthcare due to its associated burdens or barriers, utilization rates are not an effective evaluation of access, and will not reflect those who do not access care. Daniels suggested that “access to healthcare is equitable if and only if there are no information barriers, financial barriers, or supply anomalies that prevent access to a ‘reasonable’ ... [amount] of healthcare services”.^{23p.67} Although evaluating this is more complex, the barriers listed within this quote reflect the multidimensionality required to evaluate and operationalize access as reflected in the literature.^{7,8,14,15}

A second challenge when evaluating equitable access is agreeing on a definition of ‘reasonable amount’ of healthcare. Literature suggests that when striving for equitable access, a population should be able to obtain an ‘adequate level’ or ‘basic minimum’ of healthcare.²³⁻²⁵ This basic minimum of healthcare should allow an individual to live to their full function, or equality of opportunity.²³ When striving for equitable access, it is not only making the care available, but ensuring that this care is available without populations experiencing excessive burdens.²³ Burdens can vary based on the population or the individual; these can be financial, wait times, travel distances, and so forth. If striving for equitable access, society has an obligation to provide an adequate level of care, available to all, without any individual or population being subject to excessive burdens.²³

2.3.3 Access inequities in Canada

Reducing access inequities is an ongoing priority for developed countries as a strategy towards improving health equity.^{18,26-28} When access inequities exist, health disparities and thus health inequities can become more pronounced. These access inequities are the result of incongruence of the supply and demand-side of healthcare – a ‘mis-fit’.⁷ A mis-fit occurs when health services are structured in a way that does not align with the needs, abilities, and resources of the population seeking care.⁷ Examples of a potential ‘mis-fit’ could include the location where the care is offered, the language in which the care is provided, or the costs associated with the care.

Canada is a country where access inequities to healthcare exist.²⁹⁻³² Many of these access inequities are recognized as health inequities; access barriers are more pronounced for certain

groups depending on their social and economic position in Canadian society. Populations in Canada that experience access inequities include, but are not limited to, ethnic or cultural communities (including populations that identify as Indigenous or have immigration status),^{31,33} people living under low socioeconomic resources,³⁴ linguistic communities³⁵ and geographic populations (such as rural or northern populations).^{36,37} For example, a person living in a rural setting who has hours to travel to see their healthcare provider may delay care more than someone who can attend a clinic close to home. For a rural person, seeking healthcare can have significantly more burden associated with it, and so they may not choose to initiate access and accept healthcare until their concern becomes more urgent.

Although Canada has a universal health system, income-related access inequities exist.^{32,38,39} Insured coverage for physician care is defined under the Canada Health Act,⁴⁰ but services provided outside of hospitals by non-physician providers are not universally insured. As a result, there are documented income-related gaps in access to care that is not universally insured, including rehabilitation services.^{32,39}

2.3.4 Rehabilitation, access, and inequities

Access to rehabilitation is important. Rehabilitation is defined by the World Health Organization (WHO) as “a set of interventions designed to optimize functioning and reduce disability in individuals with health conditions in interaction with their environment”.^{41np} Participation in rehabilitation enables people living with health conditions to work towards equality of opportunity – that is, the ability to participate in education, jobs, and fulfill meaningful life roles, and be as independent as possible.⁴² Access to rehabilitation services allows individuals with health conditions more control over their condition, and thus potentially increases their control over life circumstances as a result of their disability.⁵ As Whitehead stated, rehabilitation services “play a valuable role in alleviating the suffering caused by poverty or disability and promoting a more equal chance for self-realization”.^{5p.440} Equitable access to rehabilitation means that individuals experiencing health conditions have equal access to work towards equality of opportunity, reducing the impact of health disparities.

The need for quality rehabilitation services is growing worldwide, including in Canada. As life expectancy increases, the aging population will experience more years lived with a disability.⁴³

In recognition of the actual demand for rehabilitation services, a 2015 Global Burden of Disease study showed that 74% of years lived with a disability are a result of health conditions in which rehabilitation is beneficial.^{43,44} The WHO recently highlighted the need to increase access to rehabilitation services worldwide.⁴⁵ Their 2017 meeting ‘Rehabilitation 2030: A call to action’ recognized that increasing prevalence of chronic diseases, an aging population, and improved access to trauma care results in populations who are living longer yet experience more years of health burden and limitations in function.⁴² Participants of Rehabilitation 2030 included researchers, governments, and health leaders across the world, including Canada, who committed to key action items to address inequities of access to rehabilitation. These action items included: improving rehabilitation investments; developing high-quality rehabilitation workforce and services; and improved data collection on rehabilitation.⁴⁵ This meeting highlighted that the demand for rehabilitation services already exceeds capacity, resulting in unmet needs.⁴³

Canada is a country where inequities in access to rehabilitation services exist.⁴⁶ As mentioned in the previous section, the Canada Health Act⁴⁰ does not mandate that public health insurance covers rehabilitation services beyond what is provided inside a hospital. As a result of this absence in legislated coverage, there is variable public funding for community-based rehabilitation services across Canada. Lack of funding has resulted in access barriers such as long wait lists, limited or no service availability, lack of awareness, and transfers of responsibility to the private sector.^{39,46-48} These barriers result in inequitable access to rehabilitation, where certain populations are unable to access the timely rehabilitation they need to improve, restore, or maintain their health status.⁴⁶

2.3.5 Primary care, access, and equity

Enhancing access to comprehensive primary care is a strategy towards improving health equity.^{9,49,50} Primary care is the first point of contact with the health system.⁵¹ Its features include accessible patient centred care throughout the lifespan, comprehensive care, and coordination with other health services.^{9,52} Primary care is a practice environment, rather than a professional discipline.⁵³ It includes access to resources and health professionals who are best suited to help an individual obtain optimal health status.⁵³ It can encompass health promotion, prevention and curative services, supportive services and rehabilitative services.^{51,52} Equitable access to primary

care supports health equity, ensuring that individuals have access to healthcare based on need, rather than personal circumstance.^{49,50,54}

For the past two decades, the Government of Canada has committed to improving primary care access for Canadians.¹⁰ Federal funding has been dedicated to enhance and expand the provision of primary care services, improving access to comprehensive, coordinated care.¹¹ As a result, interdisciplinary primary care teams have been established, so that the most appropriate care is provided by the most appropriate provider,¹¹ strengthening comprehensiveness in Canada's primary care delivery. Team-based primary care has been shown to improve health outcomes and reduce acute care costs,⁵⁵⁻⁵⁷ thus benefiting both the supply and demand-side of healthcare. Rehabilitation professionals, such as respiratory therapists, occupational therapists, and physiotherapists are members of some interdisciplinary primary care teams in Canada.⁵⁸⁻⁶⁰

2.4 Role of rehabilitation professionals on primary care teams

Rehabilitation professionals, including occupational therapists, physiotherapists, and respiratory therapists are integrated into primary care teams in Canada. Although the role of each rehabilitation profession working in primary care is not clearly defined,⁵⁹⁻⁶² rehabilitation professionals' practice is guided by the features of primary care; they identify as being patient-centred, part of a comprehensive team, and coordinate their care with other professionals and the community.^{60,61,63} Common to all rehabilitation professionals working in primary care is the influence of the primary care setting on their practice and scope.^{61,62} There is an overall focus on prevention, health promotion, and supporting the patient to self-manage chronic disease.^{61,63,64}

Occupational therapists working in primary care identify as 'generalists', whose role is focused on function.⁵⁹ Their practice depends on the unique needs of the community, the composition of the primary care team, and the patients' needs at each primary care clinic.⁶³ Examples of occupational therapists' clinical activities in primary care include working with older adults for home safety assessments, linking patients' to community resources, providing mental health supports, and chronic disease management.⁶³

Physiotherapists' practice in primary care is influenced by the health needs of the population that the primary care clinic serves, and the structure of the primary care team.^{61,65} They generally assume a wide scope of practice, with an overall focus on restoration of function or mobility.⁶⁴ Primary care physiotherapists are involved with fall prevention, management of acute and

chronic musculoskeletal pain, system navigation for patients with complex functional conditions, mobility aid assessment, and chronic disease management.^{64,66} Consistent with the patient-centred approach to primary care, physiotherapists' role is to assist with the management of any patient who has a functional limitation,⁶⁷ regardless of the diagnosis or cause.

Respiratory therapists working in primary care are involved in the early detection, diagnosis, and management of patients with chronic respiratory conditions, including but not limited to asthma and COPD.⁶⁰ Prevention of chronic disease is integral to primary care practice; to this point, respiratory therapists educate patients in smoking cessation as part of their primary care practice.^{68,69} In Canada, respiratory therapists working in primary care are involved in spirometry, smoking cessation, self-management support and patient education of chronic pulmonary diseases.^{60,70}

2.5 COVID-19 Pandemic

The COVID-19 pandemic arose from the transmission of a coronavirus, which can cause the onset of severe acute respiratory symptoms.³ The virus was first identified in Wuhan, China in December 2019, and spread globally, with the World Health Organization declaring it a pandemic on March 11, 2020.³ Canada's first case was identified on January 25, 2020, and soon after subsequent cases were identified.⁷¹ The virus is spread through respiratory droplets or aerosols from infected individuals.³ To prevent the spread of COVID-19, the federal, provincial and territorial governments implemented significant public health measures.³ These public health measures were broad and widespread, changing how Canadians live, work, socialize, including how healthcare is delivered.³ Public health measures included staying home as much as possible, avoiding all non-essential travel, and physical distancing between individuals.³

As a result of these public health measures, the delivery of healthcare underwent rapid change. At the initiation of this thesis, little was known about how access had changed in primary care as a result of the pandemic-related adaptations in health care. Now, several studies have highlighted both practice adaptations and changes in access to care as a result of the pandemic. One of the more common practice changes reported is the shift to provide care using virtual means (by use of telephone, video, or other technologies) in an effort to reduce in-person contact. Multiple empirical studies and review articles⁷²⁻⁷⁸ highlight that primary care clinics rapidly made this switch. With this rapid shift to virtual care, resultant changes in access are emerging, with some

studies suggesting that virtual care is a practice change that has potential to improve access,^{75,79,80} while also highlighting the development of new access inequities.^{74,75,80,81}

Beyond virtual care, primary care experienced other changes as result of the pandemic shifting demands on the health care system. The pandemic changed health utilization, which in turn impacted primary care.^{4,82,83} Due to changing demands, health systems had to adapt and modify where resources were allocated, meaning that health professionals performed new roles, and/or were redeployed from their usual primary care duties to different settings^{84,85} to respond to urgent, pandemic-related health system needs.

These studies, although an important contribution to knowledge about the pandemic and access to care, mainly involve primary care as it relates to physician care. There are limited studies which evaluate how the pandemic impacted rehabilitation professionals in primary care. To date, there is one Canadian study which describes how the pandemic impacted the work of primary care teams, which included primary care rehabilitation professionals as part of the sample.⁸⁶ However, this study did not explicitly attend to the impact of pandemic-related changes to patient access in a systematic way. As a result, there are unknowns regarding how these changes impacted patient access. This study starts to fill that gap, exploring how the practice changes impacted patients' access to primary care rehabilitation professional care. This study adds to the knowledge about access to primary care, exploring some of these unknowns, and may help us further understand how the pandemic-induced practice changes impacted access to care.

2.6 Conceptual framework

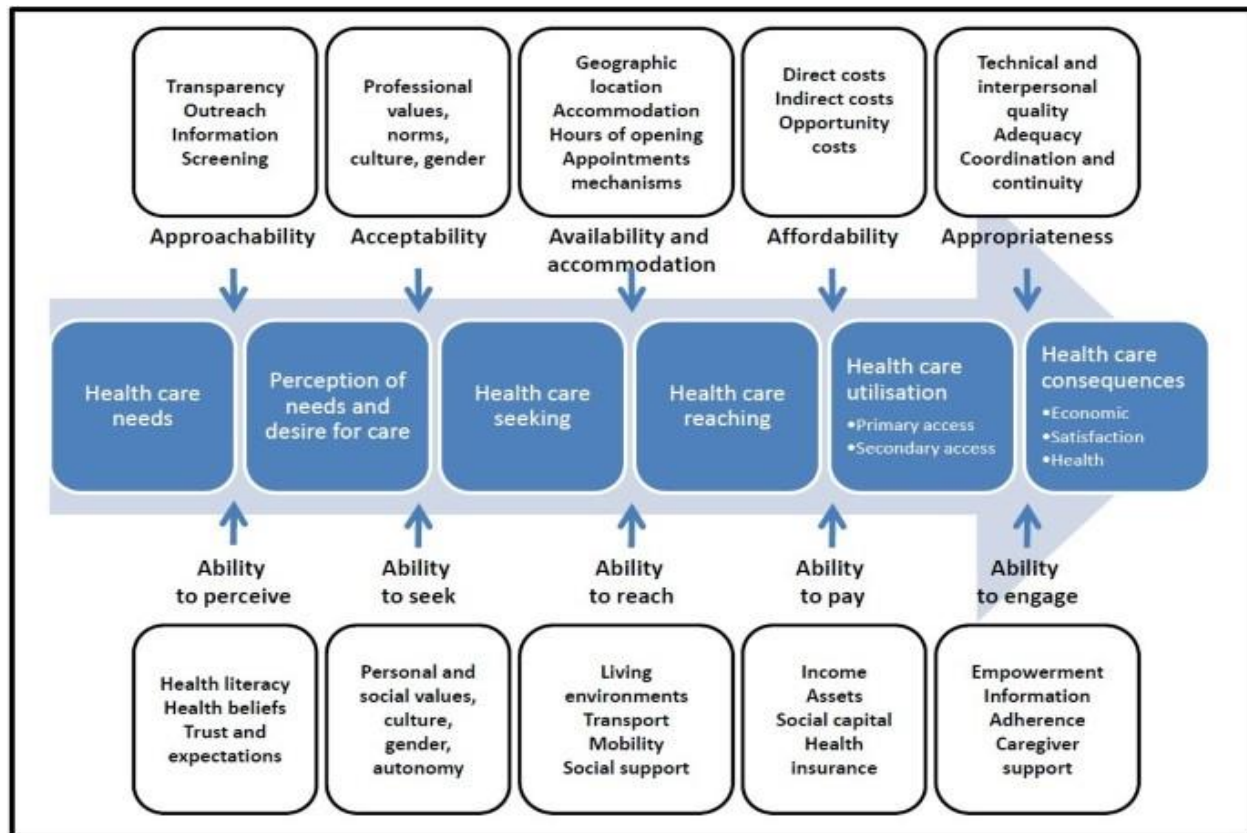
I chose Levesque et al.'s *Patient-Centred Access to Healthcare* (PACHC) framework⁷ (figure 1) as the lens of equitable access to use in this research. This framework integrates key concepts of access presented above; it presents access as multidimensional concept influenced by supply and demand characteristics, which interact along a continuum of obtaining and benefitting from care. This conceptual framework presents the supply and demand-side dimensions as interrelated constructs. In the image that depicts this framework (figure 1), the top part of the framework reflects the supply-side characteristics, the dimensions of accessibility, and the bottom part of framework reflects demand-side characteristics, the dimensions of patients' abilities. These dimensions interact and influence each other, where one change has the potential to impact the other dimensions.⁷ In addition to these key concepts, Levesque et al.⁷ have put the patient's

needs at the centre. This reflects patient centredness, indicating the patient is central to all dimensions.

Levesque and colleagues argue that literature on access is more frequently oriented towards supply-side factors, however with the increasing prevalence of chronic disease and changing expectations of patients' ongoing involvement in managing their health, there is an increased need to incorporate demand-side dimensions of abilities. The pairing of supply and demand-side dimensions enables an evaluation of how these dimensions interact, or 'fit' together, and affect patients' abilities to obtain and benefit from care. Levesque et al.⁷ acknowledge that although the dimensions are paired, this does not imply that they are equally modifiable. In practice, it is much easier to modify the supply-side dimensions of accessibility than the demand-side dimensions reflecting people's abilities. For example, implementing a health policy that changes wait times or the price of services is much easier when compared to changing the actual social or economic conditions of those seeking health care.⁷

This framework uniquely conceptualizes access in a way that reflects equitable access; it looks at the interaction between resource allocation in relation to social and health needs, while continually placing the patient's needs at the centre.⁷ It conceptualizes access as more than the point of entry to the health system, taking into consideration the multidimensionality of supply and demand characteristics and how their interaction affects people's ability to identify a need for care, obtain care, and ultimately benefit from care.⁷ This aligns with an equity perspective, enabling an examination of how the supply characteristics interact with the demand characteristics, and how this interaction affects different populations or social groups.^{16,49}

Figure 1: The *Patient Centred Access to Healthcare* framework⁷



Note: Figure copied directly from Levesque et al. (2013) *Figure 2 A conceptual framework of access to healthcare*, p.5.⁷

The upper part of the framework encompasses the dimensions of service accessibility (the supply-side), and the lower part of the framework presents the corresponding dimensions of patients' abilities to interact with health systems (the demand-side) to generate access.⁷ The following paragraphs outline the five paired dimensions, and the definitions and concepts within each dimension.

Ability to perceive is the first demand-side dimension. This is the first ability a person must have to begin the process of obtaining and benefitting from healthcare.⁷ It begins with a recognition of need of healthcare services. This can be subject to social and cultural influences, health literacy and beliefs, and previous experiences with the health system.⁷ Health services are more or less known among different populations, and recognition of a perceived need for care is reflected in a population's health literacy and knowledge about health.⁷ *Ability to perceive* is paired with the

supply-side dimension of *approachability*. *Approachability* reflects how health services encourage people facing a health need to identify and reach the service.⁷ This includes information regarding available treatments and outreach making a service more or less approachable.⁷

Ability to seek is the second demand-side dimension, which reflects an individual's ability to seek out and reach healthcare services, after a need is perceived.⁷ Healthcare user's ability to seek care can be influenced by factors such as language, cultural values, and gender.⁷ Its paired supply-side dimension is *acceptability*, which relates to how health services can accommodate cultural and social factors determining patient's ability to receive the services.⁷ This includes considerations for linguistic options, offering providers of different genders, and judged appropriateness for the person seeking care.⁷

Ability to reach is the third demand-side dimension, which considers mobility, transportation barriers, and social supports. *Availability and accommodation* is the paired the supply-side dimension, referring to physical and timely accessibility of healthcare services.⁷ Supply factors influencing ability to reach include wait times, hours of operation and geographic availability.⁷

Ability to pay is the fourth demand-side dimension. This accounts for patients' capacities to generate economic resources to pay for healthcare. This includes income, health insurance, and broader concepts like the ability to access loans to pay for healthcare. Poverty and debt are examples that would reduce a person's ability to pay for care. *Affordability* is the paired supply-side dimension of accessibility. Affordability reflects the price charged for services and time required to obtain and use healthcare services.⁷ Supply factors determine the direct cost of care, but also includes indirect costs, such as travel time and costs related to loss of income.⁷

Ability to engage is the final demand-side dimension of abilities along the process of obtaining healthcare.⁷ Once the care needed is reached and utilized, the ultimate objective is achieve the best possible health outcome.¹⁴ The ability to engage in healthcare to achieve the desired health outcome may further depend on individual's ability to understand, communicate, contribute and adhere to the healthcare plan.^{7,87} *Appropriateness* is the linked supply-side dimension. It is the fit

between the provider or service offered and the health need.⁷ Supply-side factors, such as the technical and interpersonal skills of the providers, and the quality of care provided, improve appropriateness.⁷

Pairing the dimensions along the continual process of care is a unique strength of this framework. In patient-centred terms, access is “the possibility to identify healthcare needs, to seek healthcare services, to reach the healthcare resources, to obtain or use healthcare services, and to actually be offered services appropriate to the needs for care”.^{7p.4} Access is more comprehensive than simply making a service available. This framework goes beyond the entry point of access, acknowledging access is enabled or restricted by supply and demand dimensions that interact continually along the process of obtaining care.

Among the available frameworks that conceptualize access to healthcare, I considered three prominent frameworks: Aday and Andersen,¹⁷ Peters,⁸ and the PCAHC⁷ framework. Aday and Andersen¹⁷ conceptualised a framework of access that demonstrated the interplay between health policy, characteristics of a population, consumer satisfaction, characteristics of the health system, and utilization of health services. In the Aday and Andersen framework, health policy is the most influential factor, affecting all of the other components of the framework.¹⁷ Though this framework presents access as a factor of various interrelated components, it does not focus on the patient nor does it address equity. This framework has a much stronger emphasis on the supply-side factors of access, including health policy, and lacks emphasis on demand-side characteristics of abilities, a crucial consideration when evaluating access from an equity perspective. As my research does not involve an analysis of health policy and how this impacted access, yet it does have a focus on equitable access, I determined the Aday and Andersen framework¹⁷ was not an appropriate fit for my thesis.

Peters et al.⁸ proposed a framework of access which was developed to evaluate access to healthcare in low-to-middle-income countries. Similar to the PCAHC framework,⁷ the Peters et al. framework⁸ portrays access as represented by multiple dimensions, except they present healthcare quality as the central concept, one that influences all other dimensions of access.⁸ Peters et al.⁸ suggested broad dimensions which include geographic accessibility, availability, financial accessibility, and acceptability.⁸ Each of these broad dimensions contain additional

supply and demand sub-dimensions, which impact access. Some of the sub-dimensions are concepts specific to low-and-middle-income countries, including the availability of drugs, healthcare workforce, and equipment.

Although the Peters et al. framework⁸ has some applicable concepts to my research objectives, specifically the use of both supply and demand dimensions, I determined this framework was not an optimal fit for my research objectives. The Peters et al. framework listed sub-dimensions that were relevant in low- and middle-income countries, however, my study was conducted in Canada, a country that is not categorized as such. As a result, some of the sub-dimensions had less relevance to my study's setting. In addition, the Peters et al. framework presented quality as the central concept, which influenced all other dimensions of access. My research objectives are focused on equitable access as a central concern, which encompasses a reflection of supply and demand characteristics, not quality of care.

The PCAHC framework⁷ is the most comprehensive framework of access that aligns with this study's research purpose and objectives. This framework pairs the accessibility of services with the ability of patients to interact with these services, and presents paired dimensions along the whole process of obtaining care, while keeping the patient's health needs at the centre. By examining resource allocation in relation to patient's needs, this framework is the strongest at conceptualizing access from an equity perspective.⁷ This framework has been used in previous studies examining access from an equity perspective.^{16, 49,88,89} Based on my literature review, my exploration of other access frameworks, and considering my research objectives, I am confident this framework is the best pre-existing choice to apply as a lens of equitable access in this study.

2.7 Rationale for the study

The COVID-19 pandemic is a change that has significantly impacted many aspects of people's lives. The pandemic has changed how people access healthcare⁸² and has shifted demands on the health system.^{4,90,91} Among the many groups who adapted the way they practice healthcare, rehabilitation professionals working in primary care underwent these rapid practice changes. This adaptation occurred in response to changing public health requirements and rapidly evolving health system demands. Although changes in physician practice in primary care has recently been studied, few studies involve primary care rehabilitation professionals, and none

published to date evaluate access to primary care rehabilitation professional care during the pandemic. Little is known about how these changes have impacted patients' access to rehabilitation, and this thesis study aims to address this knowledge gap.

Research purpose and objectives:

Research Purpose: To explore changes in access to primary care rehabilitation practice during the COVID-19 pandemic from the perspective of providers in Manitoba and Ontario, applying a lens of equitable access.

Objectives:

1. Describe practice changes that occurred during the COVID-19 pandemic, as described by primary care rehabilitation service providers.
2. Identify emerging changes in access to primary care rehabilitation as a result of identified practice changes.
3. Examine changes in access to primary care rehabilitation through a lens of equitable access.

3.0 Methods

3.1 Context: This thesis is a study nested within a larger longitudinal diary and interview study titled *Adapting Primary Care Rehabilitation Practice to respond to the COVID-19 Disaster*. The co-principal investigators for the larger project are Drs. Patricia Thille and Louise Chartrand.

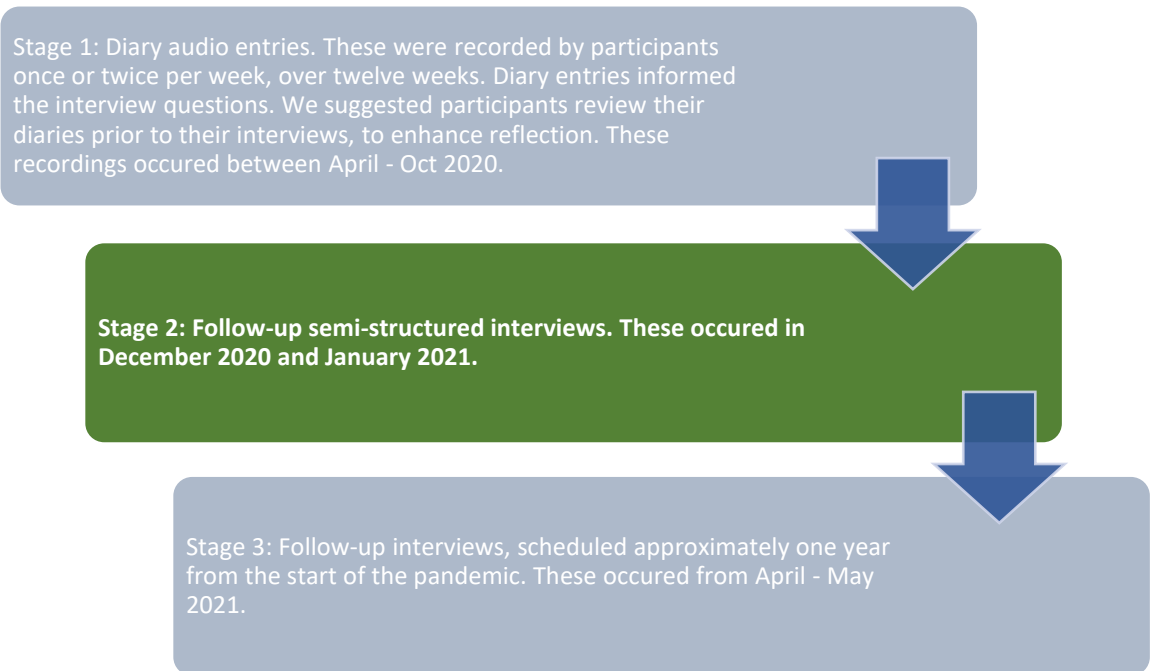
The overarching research project focuses on examining role and practice adaptations of primary care rehabilitation professionals during the COVID-19 pandemic. The larger project's research aim is to learn from the clinical practice adaptations and experiences of primary care rehabilitation professionals in Manitoba and Ontario during 2020-1 in response to the COVID-19 pandemic, with the following aims:

1. Identify challenges presented by practice and situational changes required by COVID-19 for primary care rehabilitation professionals, across micro, meso, and macro levels.
2. If the sample variation permits, compare the experiences of:
 - a. Primary care rehabilitation professionals who are new to the team (ie. less than two years) versus those who have been team members for two or more years.
 - b. Primary care rehabilitation professionals by profession (occupational, physical, and respiratory therapists).
 - c. Primary care rehabilitation professionals by province.
3. Identify supports that primary care rehabilitation professionals and their patients could benefit from in response to COVID-19's ongoing impacts, and for future emergency preparedness strategies.
4. Enhance theory regarding occupational disruption.
5. **To explore changes in access to primary care rehabilitation practice during the COVID-19 pandemic from the perspective of providers, applying a lens of equitable access.**

My thesis addressed objective number five.

The data collection process for the larger project involved three stages, highlighted in Figure 2:

Figure 2:



My thesis data is from stage two, the first follow-up interviews. This will be further described in section 3.3 (data collection). I have been involved with shaping the interview data from the beginning, as I was a member of the research team from April 2020 until December 2020. I helped develop the interview guide to include this thesis' research purpose and objectives, while also addressing the larger project's interests.

3.1.1 Research ethics board approval

In consideration of the time-sensitive nature of the COVID-19 pandemic and researchers' interests in this phenomenon, the Chair of the University of Manitoba's Health Research Ethics Board (HREB) approved advertisement and recruitment for this study in advance of HREB approval. Furthermore, they also approved the co-principal investigators orienting participants to the first part of the study, so they could start recording their diaries entries as soon as possible.

A HREB application for *Adapting Primary Care Rehabilitation Practice to respond to the COVID-19 Disaster* was submitted on May 5, 2020. The HREB application outlined the larger project's plan, which included: research objectives and literature search; recruitment of study participants; intended data collection methods using diaries via audio-recording, and follow-up

interviews; data analysis; participant confidentiality; and data storage and access. At the time of the initial HREB application, the diary prompts for participants had already been developed and were included in the HREB application. The interview guide was not yet developed; however, the HREB application described how the questions would be developed based on the analysis of the diary audio recordings, the timeline that they would be conducted, and that an amendment would be submitted with the interview guide.

HREB approved the study on June 3, 2020. At the time of approval, some participants were already recruited and were in the process of completing diary entries. The HREB approval was obtained before participants signed consent forms and submitted their diary recordings.

The interview guide was submitted as an amendment on November 16, 2020.

3.1.2 Sampling and recruitment

Sampling

This project involved purposive sampling with maximum variation,⁹² within the provinces of Manitoba (MB) and Ontario (ON). The investigators purposively sampled rehabilitation professionals – occupational, physical, and respiratory therapists – working in primary care. The investigators were looking for maximum variation to be able to allow comparisons in our sample based on characteristics by profession (OT, PT, RT) or by province (MB, ON). Investigators chose Manitoba and Ontario to increase the population from which they could recruit, allowing for cross-province comparisons, and potentially to allow for comparisons by length of time working in a primary care setting (in relation to the objectives). Sample size aimed to be a minimum of 12, and a maximum of 24.⁹² This accounts for at least two of each profession in each province, and up to a maximum of four per profession per province.

Recruitment

Recruitment started in April 2020, and ended in August 2020. The investigators recruited participants in multiple ways. Participants were eligible if they were: a) a physiotherapist, occupational therapist, or respiratory therapist; and b) worked in a primary care setting in Manitoba or Ontario. Recruitment was multifaceted due to the time-sensitive nature of enrolment in the study. Direct invitations were sent to known eligible therapists working in primary care in Manitoba, including through a primary care OT community of practice. The investigators coordinated with faculty colleagues in Ontario to identify appropriate recruitment channels; these

Ontario faculty also forwarded our study information through their networks. Recruitment notices were circulated in profession-specific affiliated groups, particularly established communities of practice. Recruitment notices were posted to social media. Due to a small initial sample of physiotherapists in Ontario, another research assistant created a list of physiotherapists listed as working in Ontario Family Health Teams and Community Health Centers, who were then directly invited to participate in the study via email to the clinician or the clinic. Additionally, we recruited by snowball sampling⁹³, inviting others to share our information widely, including existing participants at their individual orientation to the study (which was conducted by one of the two principal investigators).

3.2 Methodology

3.2.1 Research paradigm: Pragmatic

My thesis project is situated in the pragmatic research paradigm. Pragmatism is a philosophical system that accepts practical issues as the central criteria to knowledge, and recognizes that truth is co-constructed.⁹⁴ It is situated between the realist and idealist ontologies, recognizing that truth is influenced by both objective (realist) and subjective (idealist) interpretations.⁹⁵ Pragmatic knowledge is formed from the interrelationship of actions, situations, and consequences, but is also influenced by subjective interpretations and context of the problem in question.⁹⁶

In this project, I was focused on the practice changes (the actions) and access impacts (the consequences) of the COVID-19 pandemic (the situation), as identified by the participants (who provided their subjective interpretation). The knowledge gained was influenced by the situation, the participants' interpretations of the situation, and my interpretations of the data. Following a pragmatic approach to this research,⁹⁴ I accepted the interview data as participants sharing truthful knowledge, and kept my analysis at this level. My findings are the result of a reality influenced by participants, my interpretation of the interview data, and the situation. Consistent with the pragmatic paradigm, I presented the results clearly, by staying close to the data, with results that are focused on describing and understanding the problem and identifying possible solutions.⁹⁶ Further details regarding my position in relation to this data can be found in section 3.6 (reflexivity: role of the researcher).

3.2.2 Qualitative description

I chose to use qualitative descriptive methodology for my study. Qualitative description is commonly used in healthcare research, as it can capture participant's experiences⁹⁷ and answers practical questions that are relevant to clinicians and policymakers.⁹⁸ This methodology aligns well with a pragmatic paradigm, as it shares commonalities of describing and understanding problems, and is oriented around practical solutions to problems. Using qualitative description, I explored participants' perspectives on the access impacts as a result of changes to their practice, and how these professionals perceive the impacts affected their patients.

For this study, there were specific advantages to my choice of qualitative description as a methodology. Qualitative description provides useful data to review clinical interventions and develop needs assessments⁹⁷ such as "who uses a service, and why do they use it?"^{98p.4} The practice changes in this study parallel a clinical intervention; they are supply-side changes that impact the people who use the service. In our study, the practice changes due to the COVID-19 pandemic had already occurred, but had not yet been evaluated. Rehabilitation professionals' perspectives helped me to understand the access impacts that resulted from the practice changes. Using qualitative description, I was able to summarize the data to explore how these changes impacted equitable access.

Qualitative description methodology is helpful to gain an understanding of the context and setting of the issues.⁹⁹ This research has a very specific setting (primary care) which was faced with contextual challenges as a result of the pandemic. The advantages of qualitative description align with a pragmatic research paradigm, researching practical issues⁹⁴ and staying "close to the data".¹⁰⁰ This methodology enabled me to create a descriptive summary of the data,¹⁰⁰ and helped me present the research findings in a clear and practical way.^{94,98} My thesis project aimed to explore, describe, and summarize the events, written closely to how participants have described it. What is learned from the study may inform future practice of rehabilitation professionals in primary care, in a way that is practical and helpful to clinicians.

Using qualitative description as a methodology, I acknowledge that this study's findings captured the interpretations and perspective of participants. These, like all human interpretations of reality, are partial perspectives.^{101,102} The participants in this study are rehabilitation professionals, and we asked them to comment on how others (healthcare users, the patients)

accessed their services due to the practices changes as a result of the pandemic. This could be considered a limitation of the study; we accessed a partial perspective, that of therapists, and asked them to describe how supply-side changes were experienced by patients, the demand-side. When using data from this partial perspective, it is hard to know what is missing.¹⁰¹ We will not know if a healthcare user would agree to the findings, or if a quantitative analyses of population changes would find the same pattern. Given that I chose to use qualitative description to conduct an exploratory study on access, and considering the limits of an MSc, I feel that rehabilitation professionals are well situated to comment on access changes, and its impacts, in ways that suggest avenues for future study. Rehabilitation professionals have situated knowledge¹⁰¹ of practice changes and impacts they perceived, which enabled them to comment on changes before and after the pandemic. They are aware of who accessed services before the practice changes, and who is accessing services after the practice changes. In this sense, their situated knowledge was a good perspective from which to learn about the changes in access.

I recognize that qualitative descriptive studies rely on the interpretation of the researcher.^{98,99,103} Data collected is interpreted by interview participants, and then re-interpreted by the researcher. Using language from Geertz,¹⁰³ I acknowledge the findings of this thesis are second or third order findings; that is, the patient's experience is the first order, with the interview participant's description of patient access being the second order, and the researcher's writings are the third order.¹⁰³ This presents both strengths and limitations. One possible limitation of qualitative description methodology is that the analytical process is subjective, and findings are influenced by the participants and the researcher's interpretations of events.^{96,97,102,103} It is up to the researcher to identify what is important to describe, interpret this, and re-present it in the thesis.⁹⁸ Considering this possible limitation, I chose to situate this research in a pragmatic paradigm, which situates knowledge between realist and interpretive ontologies. The pragmatic paradigm recognizes that the findings are influenced by interpretation, and so there is always inherent risk of bias in interpretation;⁹⁴ yet this paradigm understands that when it comes to human experience, qualitative research has strengths that quantitative approaches cannot offer.

In this study, I remain aware that I am a rehabilitation professional who is working in primary care. As such, I have an insider's perspective, which brought insider interpretations and perspective to the study. This insider's perspective allowed me shape questions for data

collection, and may have influenced how I asked follow-up questions in the interviews, both of which are strengths. In analysis, I attempted to mitigate my insider's perspective by the following: I integrated a conceptual framework to guide my thinking; I identified and reflected on how my role and personal values may have affected the findings; I included reflexivity-enhancing activities, and other strategies to enhance credibility throughout the project, which is further described in section 3.5 (trustworthiness).

The purpose of qualitative description is to be descriptive, and not to conduct an in-depth analysis. This methodology could present a risk of missing findings of greater significance.⁹⁷ Considering this limitation, qualitative description was still deemed appropriate for my project, as it is well aligned to answer practical questions, and enabled the results to be presented in a way that is relevant to future research or practice. By using qualitative description, I was able to explore and summarize the rehabilitation professionals' practice changes and their perceived access impacts, analyzing how these changes affected equitable access to healthcare.

Considering my research objectives and my choice of qualitative description, I was able to remain descriptive, learn from the data, and present the findings in a format that is practical and has potential to impact future practice patterns or points to areas for further research.

Other methodologies exist, and were briefly considered for this thesis. I considered a more interpretive methodology, however I determined these were not the best fit to answer my research objectives. Interpretive research develops meaning from data, with one of the central notions being 'understanding'.¹⁰⁴ Other methodological options to develop this understanding include interpretive description and the use of thick description to share the research findings. Interpretive description is more interpretive than qualitative description. It is aligned with the constructivist paradigm, and uses more inductive analytic approaches.^{102,105,106} Interpretive description is commonly used to develop an understanding of complex patient experiences, and recognizes the theoretical knowledge that the researcher brings.¹⁰⁵ Although this methodology certainly brings strengths to qualitative healthcare research, it did not align as well with my research objectives, which are more practical. In interpretive research, thick description can be one approach to develop and share research findings.¹⁰³ Thick description involves a description that adds context, as it has been interpreted by the researcher.¹⁰⁷ This can include deep, detailed accounts of participants' words, gestures, or actions, with the author ascribing meaning and

intention(s) of participants.^{107,108} Interpretive methodologies, particularly ethnographies involving observation methods, employ thick description,¹⁰⁸ but it is less possible with interview data.

Although interpretive description and thick description certainly add value to qualitative research in the health field, qualitative description remained the best choice of methodology for my thesis, as it helped me answer my research questions, and is in alignment with the pragmatic paradigm.

3.2.3 Type of data: Semi-structured interviews

My thesis involved an analysis of qualitative semi-structured interviews, which were conducted in December 2020 and January 2021. The details of the interviews will be further described in section 3.3 (data collection). Our team chose semi-structured interviews, as they are appropriate when little is known on a human phenomenon,¹⁰⁹ allowing researchers to explore experiences of participants in response to an event, resulting in rich data to analyse.^{110,111} Unique practice changes occurred as a result of the COVID-19 pandemic, and little was known on how these changes impacted patient's access to rehabilitation professionals in primary care. Consistent with qualitative interview method texts,^{110,111} the interview guide (appendix 1 and 2) was purposefully structured by the research team to encourage dialogue, where researchers asked open-ended questions and followed-up with listed prompts, encouraging participants to expand and focus on certain responses relevant to the research objectives.

Interviews are a socially constructed process that depends on the interaction between the researcher and the participant.¹¹² This is viewed as a potential limitation within some literature,¹¹² however the pragmatic paradigm recognizes that knowledge exists within the limits of our interpretations,⁹⁵ accepting data is a result of a socially constructed process. Qualitative interviews are impossible to replicate, as interview data is influenced a number of different social elements.¹¹³ The conversational style of the interviewer, any power relationships between the participants and the interviewers, or a number of other factors including simply the location of the interview or the emotions of the participants during the interview can influence what data is collected.¹¹² Considering these limitations, this thesis considers the role of the researcher and building trustworthiness into the research process. I have further described this in sections 3.5 (trustworthiness) and 3.6 (reflexivity).

A second limitation of interviews is that they are a cross-sectional method of data collection, rather than longitudinal. When exploring historical change, such as the pandemic-related changes occurring over months, longitudinal data collection is better suited than cross-sectional data.¹¹⁴ In this study, the interview team aimed to strengthen the interview data by incorporating longitudinal reflections. We asked participants to listen to their diary audio recordings prior to the interview, in hopes to enhance their reflections of any changes over time. This design choice helped incorporate a longitudinal reflection into the interview, that itself captured a conversation situated in a particular moment in time.

Despite these limitations, I feel that qualitative semi-structured interviews was a good choice for this thesis. This form of data permitted me to explore how the practice changes impacted access. The exploratory questions from the interviews provided my study with rich data for analysis, and enabled me to answer my research purpose and objectives.

3.3 Data collection

Timing of interviews in relation to provincial pandemic cases

The majority of interviews were conducted in December 2020, with one interview conducted early January 2021. At the time of the December interviews, Manitoba was in the middle of experiencing a significant second wave. Daily COVID-19 cases throughout November were increasing at a rate much higher than the first wave, with record-setting elevated cases each day.² The increased case counts resulted in hospitals operating at or above capacity¹¹⁵ and frequent outbreaks in long term care homes, straining healthcare staffing resources.¹¹⁶ Additional measures to slow the spread of COVID-19 included a closure of all non-essential businesses and a ‘no-visitors’ rule between households.¹¹⁷

Ontario was experiencing a slow rise in daily positive COVID-19 cases, and was slowly entering a second wave at the time of the December interviews.² Hospitals were able to manage the increase in COVID-19 cases, but concerns were mounting that further rise would strain hospital capacity.¹¹⁸ Outbreaks in long term care homes were occurring with increased frequency. The Canadian Red Cross was brought in to support long term care homes’ staffing shortages.² The provincial government targeted restrictions on non-essential services in regions with high case counts, rather than a province-wide shut down.²

At the time of interviews, participants in both provinces had been living under some form of public health measures since March 2020. Though the public health measures varied from province to province, primary care rehabilitation professionals experienced practice changes as a result of the pandemic, including being redeployed, and/or shifting from in-person appointments to providing care exclusively using phone or video. This study was able to explore how these practice changes impacted patients' abilities to access care.

Interviews

A semi-structured interview guide was developed by the larger research team. The questions were developed based on initial analysis of diary audio recordings and oriented to the objectives of the larger study. The interview guide had multiple iterations, and the guide (appendix 1) was piloted twice prior to conducting interviews. After three interviews were conducted, the interview guide was revised again for clarity, timing, and improved ability to answer my research objective (appendix 2). In this revision, I added specific probes drawing attention to populations who may have experienced access inequities as reminder for interviewers.

Within the interview guide, I developed the interview questions that specifically addressed my research purpose and objectives. The questions I developed are found in appendix 1 and 2 (the interview guides), and highlighted in red. However, I analysed the data collected from the entire interview to generate a full list of practice changes, and ensured I captured all access changes mentioned during the interviews. This ensured that I included all data that was relevant to my research purpose and objectives, beyond the answers participants gave to the specific access questions.

The interviews were conducted by five members of the larger research group in December 2020 and January 2021. Daya Kaur conducted seven interviews, I (Tory Crawford) conducted four, Patty Thille conducted one, Cara Brown conducted one, and Louise Chartrand conducted one. There was a total of 14 interviews conducted, with one withdrawn later. All of the interviews were conducted via videoconferencing; however, the participants were offered the option of telephone or videoconferencing if they preferred. In-person interviews was not an option due to physical distancing measures during the COVID-19 pandemic.

We recorded the interviews using digital audio recorders. Consistent with semi-structured interviews,¹¹² the actual wording and sequence of questions varied, to allow for a more

conversational style of interview. We asked probing questions, allowing the researcher to follow-up when a participant's answers required exploration. The length of each interview was between 0:58:10 to 1:36:24.

At the end of each interview, each interviewer completed a reflexive memo. These reflexive memos gave context to the interviews, and allowed the researchers to understand any limitations to the data. These reflexive memos were included in my study's analysis, during the 'initial immersion' stage, and I referenced them later as needed for clarity or context throughout my analysis. The use of these memos was intended to enhance reflexivity, as outlined in section 3.6.

Each interview was sent to a transcriptionist, as approved in the HREB application. The data was transcribed and reviewed for accuracy and consistency of transcription conventions by other research team members.

3.4 Analysis

To answer my research questions and objectives, I selected the qualitative analysis strategies to align with my research objectives. This general approach takes guidance from Braun and Clarke,¹¹⁹ Kyngas,¹²⁰ Creswell,^{96,121} Leavy,¹²² Boeije,¹²³ and Thomas.¹²⁴ From these authors, I selected common steps to approach qualitative analysis, and adapted these steps to answer my research questions. These steps helped organize the text data, code it appropriately, and enabled me to write up summaries that were relevant to my research objectives, resulting in findings with descriptions representative of participants' perspectives and experiences.^{119,120}

I developed the stages of data preparation, initial immersion, coding, interpretation and writing (items 3.4.1-3.4.5) using guidance from qualitative research textbooks, including Creswell,^{96,121} Braun and Clarke,¹¹⁹ and Kyngas.¹²⁰ My specific plan for coding was adapted from Leavy¹²² and Thomas,¹²⁴ yet also I adapted some sections of the constant comparison approach from Boeije.¹²³

To ensure this analysis plan was feasible prior to writing the thesis proposal, I trialed it on two interviews from the dataset, under the guidance of my advisor. I did this to ensure the coding plan would work, to develop initial codes, and more fully understand how the data and analysis plan would result in answering my research objectives. Below, each stage of data analysis is described in more detail.

3.4.1 Data preparation and organization

The purpose of this stage was to organize the data to prepare for analysis.^{96,119–122} After each interview was completed, the interviews were sent to a transcriptionist, as approved by HREB. Each interview had already been transcribed to text and had been checked for accuracy by team members, with consistent transcription conventions used. I uploaded both the interview transcripts and the reflexive notes associated with each interview to NVivo 12.

3.4.2 Initial immersion of the data

I began by reading each interview transcript, the ‘initial immersion’ phase.^{96, 119–122,124} I read through the interviews one by one, ‘immersing’ myself in the data. Following each interview, I read the reflexive note that was completed by the interviewer. I repeated this initial immersion several times to familiarize myself with each interview, prior to moving on to analysis.^{96,120} During this initial immersion, I used the ‘annotate’ function in NVivo 12 to make notes, record my first impressions, questions, and as a way to draw attention to sections of the data. This initial immersion gave me a sense of what was in the data, and drew my attention to sections that addressed my research purpose and objectives.^{96, 122,125}

After each interview’s initial immersive read, taking guidance from Braun and Clarke,^{119,126} I wrote a reflexive note. This involved a reflection on my general first impressions, thoughts, questions, and I noted areas of the data to prioritize and any new insights. Within this reflexive note, I purposefully asked myself specific reflexive questions, as guided by Eakin and Gladstone,¹²⁷ helping me reflect on how my role may have influenced my interpretation of the data. This reflexive note helped me as I progressed into the data; it served as a document identifying key sections of data that required more focused attention, and initial notes on my thoughts and reflections. Further details on this step are outlined in sections 3.6, reflexivity.

3.4.3 Coding

I systematically coded each interview transcription. Coding is a method to classify the text data by common topics, helping to identify patterns by first gathering together sections in the data that relate to my research objectives.^{122,128} I first coded for practice changes, then code by access change, while also creating inductive codes for any sections of data that might have relevance. This process assigned codes to relevant sections of the interview data. Parts of the interviews contained data that were not relevant to the research objectives, so there are large sections of the

data that were not coded. However, as stated previously, I read the entire dataset multiple times, both in the initial immersion and throughout coding, to ensure I captured all data related to my research objectives.

My coding approach ensured the findings stayed close to the data, consistent with a descriptive approach to qualitative analysis.^{100,124} This plan took guidance from Leavy¹²² and Thomas¹²⁴ of a general approach to qualitative coding, and from Boeije¹²³ utilizing a constant comparison approach to organize and look across the data. NVivo 12 software was used for all coding. During the coding process, I updated and continually revised my coding manual. This was an iterative process. Each time a code or subcode was created, it was updated with its associated definition in the NVivo 12 software. A final version of the coding manual is attached as Appendix 3. The steps I took for coding are described below:

1. After initial immersion reads of the interviews and the associated reflexive notes, I went through each interview coding for practice changes. At this stage, first I coded for practice changes, doing complete coding¹¹⁹ of all data that spoke to the practice changes. After this stage, I re-read all the data that was coded under practice changes, and created subcodes specific to each practice change. *Eg. Code: Practice change. Subcode: telephone visits.* As well, I coded the practice changes they anticipated keeping for the future. When developing subcodes related to the specifics of the practice change, I updated my coding manual, adding definitions to each code. The practice changes encompassed large amounts of data, with many subcodes based on the various specific identified practice changes. This process started out very specific, coding for each described practice change. For example, I had codes for loss of spirometry and loss of home visits. After this second round of coding for specific practice changes, I started to classify¹²⁵ the specific practice changes into group of similar subcodes. Continuing on the previous example, both loss of spirometry and loss of home visits were condensed into 'loss of rehabilitation tasks.' This was an iterative process, which involved many re-reads of the practice change data, as I refined and revised to create categories of similar subcodes that captured patterns of practice changes. At the completion of this stage, I had organized this data based on patterns of practice changes that participants identified.

2. Coding for access impacts was a three-step process. After I coded for each practice change, I looked across the data, organized by each major practice change, and did a first round of complete coding,¹¹⁹ highlighting all data that spoke to access impacts. Next, I looked at each access impact, and then coded either “access improved”, “access worsened”, or “no change to access”. Once this second step was complete, I looked at each access impact (by better/ worse/ no change), and applied the deductive codes for the specific supply and demand-side dimensions of access and abilities, based on the PCAHC framework. When participants spoke to certain changes affecting specific populations, this was cross-coded with the access impact. There were times when an access impact was not able to be coded under a dimension. In these cases, I assigned inductive codes, and put it under an ‘other’ category to return to later.

When refining and revising my codes, most, but not all, access impacts were assigned under a dimension of the PCAHC framework. Considering this, there was one access impact (changing patient needs) which was not able to be sub-coded with a dimension of access. This will be further discussed under chapter 5, strengths and limitations.

3. Once I completed coding for practice changes and access changes, I re-visited all of the interview data in full, reading through each dataset and their associated reflexive notes, to look for any data that related to access changes that was not already coded within a practice change. This final step ensured all data has been reviewed and coded for access changes.

In summary, once I finished coding, the text data was organized as follows: Each practice change was identified. Under each practice change, the access impacts related to each practice change were organized by either improving or worsening, and then by coded PCAHC supply or demand dimensions. If the data highlighted how access impacted a specific patient population, this was also coded. In addition to this, I had a section of access changes that were not related to a specific practice change, as well as practice changes participants anticipate they will continue in the future. Where applicable, these were coded by PCAHC dimensions as well.

Coding was an iterative process, where I re-visited the data multiple times, re-reading, comparing and contrasting data associated with each code, and refining and revising codes, and

continually updating my coding manual. Once it was completed, I had a complete and thorough coding manual that summarized and defined the codes and sub-codes, enhancing dependability, and all the data relevant to my research objectives was coded. The final coding manual is found within this thesis as appendix 3.

3.4.4 Writing the results

Once coding was complete, I proceeded to write up my findings. To do this, I organized the writing based on the code reports for each practice change, future practice changes, and any access impacts I found that were not associated to a practice change. When I was writing up the findings, I started by describing each practice change. Where possible, I indicate how many participants were affected and other relevant details, such as if the practice change affected specific professions. Within each practice change, I have listed then described the access impacts that were associated to each practice change. These are categorized based on the PCAHC dimensions.

To organize my writing, I started with the practice changes that had the fewest associated access impacts. I started with these, as they were the easiest to summarize and write, they impacted the fewest PCAHC dimensions, and had the most similar data. After this, I progressed through each practice change, working to those that had the most. This continued to be an iterative process, as I read the data associated to each access dimension multiple times, to note, compare, and understand nuances and differences. When I needed context, or understanding of certain data, I found myself reviewing both the interview in whole (to ensure I understood the responses fully), and looking at each interviewer's reflexive notes (to add context to responses). This additional information from the whole data set helped inform my analysis.

When writing the findings, I made minor refinements and re-categorization of the coded data that was in each PCAHC dimension. With any changes to the assigned dimension(s), this then required an update of what was written under access impacts of each practice change. I found myself constantly referencing the PCAHC framework and its definitions, to ensure the data was assigned the most appropriate dimension. Some practice changes affected multiple accessibility or ability dimensions. When there was a particular 'fit' or 'mis-fit' in the dimensions as a result of the practice change, I highlighted this. I also highlight where participants spoke to access

impacting a particular patient population. Finally, I summarized the practice changes the therapists anticipate they will continue post-pandemic.

In the findings chapter, I share quotes that highlight the findings. For reading clarity, I have removed repetitive words and hesitation phrases (e.g. umm, uh) and where I added referent words, square brackets are inserted around the word. Where there is an ellipsis (...), this indicates that sections (such as a phrase) of the data have been removed for the reader's clarity and focus.

3.5 Trustworthiness

Trustworthiness in qualitative research addresses the question “Can the findings be trusted?”.^{129p.121} Trustworthiness is enhanced through different types of practices, relating to different criteria, building rigor into the stages of data collection and analysis. I addressed trustworthiness in my research study by the following criteria: Credibility, dependability, transferability, and confirmability. Reflexivity, outlined below, further added to the trustworthiness of this research, by helping me understand how my role shaped my interpretation of the data.

Credibility is the confidence that can be placed in the research findings, or whether the research findings represent a recognizable picture that fits the data collected.^{129,130} Credibility can be enhanced by a carefully designed research process, researcher and data triangulation, member checking, and a clear identification of the strengths and limitations when writing the final report.^{120,129,130} The research design involved a team approach, with senior researchers influencing the design process, which was first written in the HREB application and adapted as needed over time. Researcher triangulation was present when developing the interview guide. The guide was developed as a team after immersion and preliminary analysis of diaries, refined multiple times, then piloted twice prior to conducting the interviews with participants. Investigators observed junior researchers and provided feedback on the data collection process. After the first three interviews, the guide was modified for clarity, timing, and ability to gain better data to answer the research objectives. This process was iterative, and involved input from all team members. In this thesis, data triangulation was limited due to the use of a single data set for this research proposal. However, the interview guide was constructed based on the diaries, and the participants were asked to review their diaries before the interview, which strengthened

the data generated and used in this MSc project. The inclusion of the interviewer's reflexive notes written post-interview supported interpretation. Due to the limitations of my MSc-level project, member checking did not occur. My advisor on this thesis is a principal investigator in this study. She is also immersed in the data, and provided regular feedback throughout coding and other analysis steps. Credibility was also enhanced by my section in the discussion where I identified the strengths and limitations of this research.

Dependability relates to a research process that is logical, traceable, and consistent.^{129,130} This can be enhanced by a clear description of the steps taken to collect the data, and a strong description of the stages of analysis, and audit trails.¹²⁹⁻¹³¹ Dependability is enhanced in this thesis by my clear outline of the data collection methods and stages of analysis. An audit trail can be found in the larger project, and the interview recordings, transcripts, reflexive notes are all saved on a SharePoint database and a secure University drive. I maintained an audit trail specific to this thesis, by doing the following: I kept reflexive notes during the analysis stages, and kept clear analytic notes on my codes, coding manual, and analytic decisions. I have backups of my coding manuals, which shows the evolution and the analytic decisions that led to my final coding manual. These backups align with the analytic decisions written in my audit trail. All of these pieces help to ensure consistency and reflection when as I developed the findings.

Transferability is the ability of research findings to be utilized in another context.¹³¹ The ability to transfer findings depends on similarities between setting, participants, and contexts.^{122,129} To enhance transferability, a reader must be able to source enough detailed information that they can then assess if the findings are transferable to another context. I aimed to improve transferability by writing a detailed description of participants, their professions, the setting, and the events that preceded this research. This information is within this thesis in sections on recruitment, sample, context, and background, and is included in the findings chapter. In the thesis findings chapter, I have strengthened transferability by writing a detailed description of each practice change, so that readers can determine if the access impacts due to specific practice changes are applicable in a similar setting.

Confirmability is when the findings can be traced back to the original data sources.¹³¹ The researcher should be able to demonstrate that the interpretations and findings are clearly derived from the data.¹³⁰ In addition to strategies described above, using NVivo for data organization and

coding ensured that different pieces of interview data can be traced back to the original source. In my thesis findings, I have noted the pseudonym and profession of the speaker when including exact quotes. Guba and Lincoln state that confirmability is established when credibility, dependability, and transferability are achieved.¹³² In this research project, I have aimed to enhance confirmability by enhanced credibility, dependability, transferability, and reflexivity. Reflexivity is further described below.

3.6 Reflexivity

Qualitative research is interpretive research, and the researcher's experience can shape the interpretations formed during a study.⁹⁶ Considering my role in this study, I have structured reflexivity throughout the analysis. Reflexivity encourages the researcher to be aware of how the researcher's presence affects the research process and end results.¹³³ I have enhanced reflexivity by the following: I have acknowledged the role of the researcher (described below). I purposefully asked myself reflexive questions throughout stages of the analysis, and tracked my responses to these questions. I also tracked other items of relevance (my emotions, my engagement with the participants, etc.); and I used annotative memos when coding where I had questions or comments associated with specific data. During the data collection stage, each interviewer structured time immediately after each interview to write a reflexive note on the interview process. These reflexive notes were included in the analysis, as I first read them as part of the initial immersion, and then re-read them as needed throughout my analysis process.

Role of the researcher: Creswell recommends that researchers clearly identify their role, values, and personal interests related to the research topic, as all of these factors in turn affect the outcome.⁹⁶ I acknowledge I am a physiotherapist who works within an interprofessional primary care team, and I was a participant in the larger study by contributing diary entries. In addition, I was a member of the research team from early in the study's initiation. I directly contributed to the development of this thesis and research objectives; I was a MSc student working in primary care during the pandemic, who experienced the COVID-19 induced practice changes, and developed questions about patient's ability to access care using virtual means. I may have been more attuned to access impacts brought on by the practice changes, because I have experienced these in my clinical practice, and because I was particularly interested in them; even prior to the

pandemic, I was planning to do research relating to equitable access. My perspective brought an insider approach, which shaped the interview guide questions. In addition, when conducting interviews, the other interviewers and I introduced ourselves and identified our role. Consistent with other interviewers, I shared information about my role(s): I identified myself as a physiotherapist (sometimes adding that I worked in primary care), MSc student, or both. This disclosure may have influenced participants' responses. From the participants' perspectives, my experience could facilitate a more open style of responses, or potentially may reduce the freedom of expression, depending on each participant's comfort level with my roles.

As part of these roles, I bring values and personal beliefs to this research project. These have potentially influenced the findings, which I acknowledge. As a rehabilitation professional, I value the work and contribution that rehabilitation professionals bring to Canada's public health system. I value a sustainable public health system, and believe that public access to appropriate care (such as rehabilitation services) benefits the patient, their health outcomes, and the health system. I also firmly believe that providers in Canada's publicly funded health system have an obligation to ensure accessible care for all populations when there is a need. This belief reflects the principles of Canada's Health Act, one of which is 'reasonable access' to health services.⁴⁰ Those working in healthcare have a responsibility to uphold these principles, even during a pandemic. Considering these values, I believe that publicly funded equitable access to rehabilitation professionals is important. These values may have influenced how I interpreted the data and developed the findings in this thesis. Throughout the execution of this project, I hoped to develop findings that answer my research purpose and objectives, and have potential to influence future primary care practice after COVID-19. I reflected upon these influences throughout the process as much as possible by including reflexivity practices into the analysis, as outlined below.

1. I asked myself the following two reflexive questions throughout the analysis, as suggested by Eakin and Gladstone:¹²⁷
 - a. "What stakes (interests, risks, benefits) do I have in the study's outcomes?"^{127p.6}

This question encouraged reflexivity in the analysis. I have been closely involved with this research process, and by asking this question, I was encouraged to reflect and consider how my responses may influence the findings. My answers to these questions are both within my reflexive notes associated with each interview' initial immersion, and also tracked within in the notes I took throughout the research process, as it was an ongoing question I reflected upon throughout the analysis.

- b. When I finished the initial immersion and the reflexive note associated with each interview, I asked myself: "How have the data been influenced by interaction with myself, or other interviewers, and what are the nature and dynamics of that interaction?"^{127p.6}

This question encouraged me to reflect on the interview process. How was I interpreting the data to influence the results? When I identified myself as a primary care rehabilitation professional, how does this influence the results? How did the other interviewer' presence influence the interview process? While I did not always develop decisive answers, these questions and reflections enabled ongoing attention to the limitations of my chosen methodology of qualitative description. My answers were recorded within the reflexive note associated with each interview.

2. I kept annotated memos, reflexive notes, and analytic notes throughout the analytic process. While coding, I used annotated memos for any questions or comments I had, to remind me of things others have said, areas that need a second look, or any general area of interest. The reflexive notes were taken throughout the analytic process. They reflect my emotions from my engagement in the research process. The analytic notes reflect any thoughts or questions that arose throughout the analytical process, and tracked any analytical decisions that I made. All of these will serve as a link between my codes and my analysis,¹²² establishing confirmability.¹³¹

At the end of each significant section, I took notes reflecting my emotions, how I engaged in the analysis process, and any outstanding analytic questions or decisions I had made. I completed this at the end of the initial immersion of each dataset, and when looking across the coded data by practice change and access impacts. This helped me understand when my engagement and emotions were noticeably affecting my interpretations. To address this, when I noted that my

emotions were impacting my interpretation, I distanced myself from the data section for a few days. I then re-read the data at a later time, paying closer attention to the data. As this was often an iterative process, I did note there were times where it changed how I presented the results.

This concludes the methods chapter. I will now present the findings from my research project.

4.0 Findings

Introduction

Access to healthcare reflects both supply and demand factors. Both were affected by pandemic-related changes. Practice changes occurred within the health system as a result of public health measures and provincial orders. This impacted access for patients who also experienced changes to their health needs during the pandemic. Altogether, these changes affected both the supply-side dimensions of access, and the demand-side dimensions of abilities. The primary care clinics our study experienced this, where access impacts occurred both as a result of the supply-side changes, but also their population's changing health needs throughout the pandemic.

I categorized six different practice changes that occurred as a result of the pandemic: loss of usual rehabilitation tasks; new tasks; redeployment; team collaboration changes; virtual care; and changes in patient health needs. The first five of the six practice changes were attributed to changes at an organizational level, the supply-side, which occurred as the health and primary care system responded to the COVID-19 pandemic. One of the six practice changes occurred on the patient side, the demand-side, as participants reported patients were presenting with new or worsening health care needs. Altogether, these six practice changes impacted how patients were able to access rehabilitation professionals' care, with some impacting access in multiple ways. Access both improved and reduced, depending on the practice change, and the patient population affected.

The practice changes and associated access impacts will be presented below. As I am examining this data under a lens of equitable access, where therapists perceived that a practice change impacted a specific population's ability to access care, this will be highlighted within the results, and further discussed under chapter 5 (discussion). This findings chapter concludes with a review of the practice changes the participants report wanting or anticipating to continue in the future.

Please note that when quotations are used, the researcher's dialogue is in **bold**, and participants' responses are *italicized*.

4.1 Practice change: Loss of rehabilitation professional tasks.

Nine participants identified a loss of the ability to perform tasks that are part of their usual rehabilitation professional practice. I categorized something as a *loss of rehabilitation*

professional tasks when participants were unable to perform tasks that were part of their usual rehabilitation professional work, with no similar alternative method to provide the care within their setting. This included the inability to perform spirometry in a primary care setting, and the loss of in-person therapy groups.

4.1.1 Loss of spirometry

The most predominant task lost was the ability to perform spirometry. All four RTs involved in the interviews experienced this loss due to the risks this of COVID-19 transmission. Spirometry is used in primary care practice to measure a patient's lung function, and in some cases, assist with a diagnosis. People who require spirometry are those living with, or suspected to have, chronic lung disease, including chronic obstructive pulmonary disease (COPD), asthma, and smokers. In the early weeks of the pandemic, spirometry was identified as a potential aerosol generating medical procedure, and thus required enhanced infection prevention and control measures. This meant that to safely perform spirometry, facilities required isolated rooms, equipment with special filtration, and providers required specialized personal protective equipment.^{134,135} The respiratory therapists in our interviews worked in primary care clinics that did not have immediate access to these enhanced measures, and had to cease using spirometry as a result. All RTs noted this discontinuance of spirometry significantly changed their practice. One participant estimated that spirometry encompassed approximately 75% of their pre-pandemic workload, and now they were completely unable to use this skill.

All RTs noted that the service loss significantly impacted access to spirometry. I categorized this under the framework's dimensions as a loss of *availability and accommodation*. As it was no longer available in primary care, participants had to refer patients who required spirometry for diagnostic purposes to a hospital respirology clinic. When deciding whether to refer to a hospital setting, two RTs commented on balancing the patients need for spirometry with the larger demand on the hospital system. This loss of spirometry affected access for all patients who required monitoring of their respiratory status, including people with asthma and chronic lung disease.

With the loss of spirometry, every RT in our study reported they could dedicate more time to managing patients' respiratory conditions. Although they lost a measurement of breathing function, they observed they could still educate and manage the patients' conditions. As one

participant noted, the patients were more concerned about the loss of spirometry, but overall, the loss rarely impacted the RTs' abilities to manage patients' respiratory care needs. Participants identified that the loss of spirometry affected their ability to educate patients on why they were making recommendations, but did not actually change their recommendations.

"The lack of spirometry, also, because I used it as a teaching tool. I use it as a teaching tool in asthma and in COPD, especially to show people that they have COPD, especially if they're still smoking. So, not having that tool is detrimental to their education." -

Tammy, RT

"...I've told them [the patients] that "Well, if we did the breathing tests or not, I would have this recommendation for you." You know, so uh, just comfort them in the fact that "yeah the test is important, but you know how you're feeling and what we can do to help you is, is just as important." -Ainsin, RT

"I look at what I did a year ago to now, and it's completely different. I thought my whole world was spirometry a year ago, and now it's like "What do I even need that for?" -

Tammy, RT

4.1.2 Loss of group programming

Five participants identified a loss of group therapy classes. Prior to the COVID-19 pandemic, they ran in-person mental health groups, exercise groups, and groups for chronic disease management. Due to system-level technology challenges or redeployment needs, three participants were unable to transition these groups online. Another participant shifted to providing groups online, but due to lack of enrollment, had to cancel. Another participant identified they intended to run exercise groups, but were unable to find the time once the demands of the pandemic arose.

I categorized the loss of group therapy classes under the dimension of loss of **availability and accommodation**, as it was an organizational change that resulted in patients unable to access the groups. Ultimately, all participants who lost the group programming noted a gap in patient's **ability to reach** the care needed, as it was no longer available. This created an access mis-fit, wherein the organizational change resulted in no availability for patients to reach care, despite demand. The loss of group therapies negatively affected access for all patients who would

typically be joining groups, and participants did not identify specific populations more impacted than others.

“...it does impact quality care but we don’t have a virtual platform to run through. ...So groups, like, there’s lack of access, right? ...If we were running large groups to provide support, management, mood anxiety, such as with the group. We don’t do that anymore so if we are talking about access, access is a big— is a huge barrier.” -Mark, OT

4.2 Practice Change: New tasks as part of rehabilitation professional work

All participants except one identified they took on new tasks as part of their primary care role. I applied this category when participants undertook new roles within their primary care clinics that related to their existing caseload, or helped expand care to primary care patients. All of the new tasks categorized were incorporated within their roles as primary care rehabilitation professionals. Tasks that were part of redeployment will be explored separately, in section 4.3 (redeployment).

New tasks included the following: i. Outreach, where participants-initiated contact with primary care patients, some of whom were on their existing caseload, by telephone, email, or messaging apps; ii. Expanding their skill set to new primary care programs and/or ‘wellness checks’ on existing patients during their rehabilitation appointments; and, iii. Managing new risks associated with in-person appointments.

4.2.1 Outreach

Six participants started outreach activities to connect with patients of their primary care clinics, some of whom were already on their existing caseload. I coded a practice change as outreach when the rehabilitation professionals reached out to initiate contact with patients, beyond a scheduled appointment. Participants reported calling or messaging patients to check in, (including ‘cold-calls’ to inquire how they were coping with the pandemic), or emailing patients about upcoming programs. Four participants conducted outreach using the telephone, two spoke to using email, and one participant used a messaging app to connect with patients. All of these outreach activities increased the **approachability** dimension of access, and in some cases, participants described improved alignment with the dimension of **ability to perceive**. The rehabilitation professionals in our study noted that outreach resulted in patients more able to perceive that health services were still operating, and that their health needs could be addressed.

They reported that patients seemed grateful for the contact, and sometimes their outreach resulted in changes to patient's care:

"I've been able to help people a lot more with, other things that they're having. I'll give you an example you know, like "I have been having caregiver burnout", or financial strain, and I get to connect them with resources. Or, I can just listen to them and have time to listen to what's going on and their frustrations and things like that, which can be a good or a bad depending on which way you look at it. It's good for them but, after awhile, it's, it's an extra emotional burden for the provider..." -Jenny, RT

"Lots of them were just grateful to have somebody call and touch base with them, and they would tell me that, like "It's just so nice to hear from you. I really appreciate you calling", because a lot of them are scared. Now, I don't know if that's the same now a year into it, but at that point in time, they were appreciative that somebody cared. They were glad that somebody was calling to check on them. I think that was probably the number one thing.

And how about your team? Has there been anything that you've done that you think has been most helpful for your team in general?

I know the physicians appreciated the communication of me talking to their patients, because there were also those patients that I would call that were actually doing quite poorly and needed changes and needed care, and if I hadn't been calling them, the doctors even said, "Well, they weren't on my radar. I wouldn't have been checking in with them." Back in March or April, people stopped going to the doctor, because they were scared to go into the clinic, so we were calling them whether they were calling us or not." -Heidi, RT

"So, you know again, that older population, and I certainly hear that on the phone with people, they love and appreciate the phone calls. There's a few that I've just kept in touch with since, you know since I first met them, maybe back in April or May. I'm doing check-ins, which is partially checking in on how they're doing the physical part, but a lot of it is mental, just offering some support because they're isolated and lonely. And...They really, really appreciate having that check-in phone call." -Ashley, PT

When reflecting on the patient populations they perceived to be positively impacted by outreach, some of the rehabilitation professionals identified older adults and people living with chronic lung disease. Participants perceived these groups to be more isolated and negatively affected by the pandemic, and the outreach was perceived to improve their access to care.

4.2.2 Expanded skill set in primary care

Seven participants undertook new tasks that expanded their primary care duties. I categorized the expansion of their skill set when participants took on new tasks within their broader scope of practice as rehabilitation professionals, and the skill set was utilized to serve the primary care population of their clinic. Again, new tasks that are part of redeployment are described elsewhere, in section 4.3 (redemption).

There was significant variability between participants' new tasks, but all expanded skills were described by participants as having a positive impact on access. Some participants assisted in administering influenza vaccines, at a time where there was significant demand for this service. Others worked with alongside paramedics, doing virtual monitoring of patients who were sick with COVID-19. One participant assisted their primary care team to monitor clients with chronic diseases. Many participants identified that they conducted 'wellness checks' within their rehabilitation appointments. These 'wellness checks' occurred during the patient's scheduled appointment, but involved asking patients questions and providing advice or care that was *beyond* the usual scope of each rehabilitation professional. Participants spoke to asking patients about their mental health status, spending appointment time discussing patients' overall well being, and attempting to reduce patients' social isolation. Of note, wellness check differed from outreach, described above. Wellness checks occurred within the scheduled rehabilitation appointment, whereas outreach was when participants-initiated contact with patients outside of a scheduled appointment.

When rehabilitation professionals spoke to the expansion of their skill set, and how this impacted access, they spoke of both improved *appropriateness*, and improved *approachability*, in terms of the PCAHC framework dimensions. I categorized improved *appropriateness* when participants took on new tasks that met client's needs, including remote monitoring, chronic disease management, and participating in influenza vaccines. The therapists perceived these new tasks

were an appropriate fit with their skill set, and improved timely access to necessary care. When discussing these new tasks, participants identified they felt comfortable and competent helping address the health needs of the community. I labelled improved **approachability** when participants spoke to checking in on their patient's overall well-being ('wellness checks'), in addition to addressing the reason for the appointment. Similar to outreach, participants perceived these conversations inquiring about patient's mental and physical health resulted in patients being less socially isolated, and increased their connection with available primary care services during the pandemic. These wellness checks were perceived to be most impactful for populations who may have been more isolated during the pandemic, including older adults and those living with chronic diseases.

4.2.3 Managing new risks prior to in-person appointments

Four participants identified that due to the COVID-19 pandemic's risk of transmission during in-person contact, there were new risk assessments and/or infection prevention processes they had to conduct prior to seeing clients in-person. This had a direct impact on their availability to see patients. This risk management included screening clients for COVID-19 symptoms, the use and rationing of personal protective equipment (PPE), and wiping down equipment and rooms between in-person appointments. I found the risk management activities associated with an in-person appointments reduced participants' **availability and accommodation**. Participants noted they had less time available for in-person appointments, and each appointment took more time. This reduced availability meant patients had a harder time scheduling in-person appointments.

"...people that have a hard time accessing the in-person appointments, just with umm.. the barriers, like, we can only offer appointments in chunks of time, because we want to minimize the PPE usage, so even just the availability of the appointments we offer is less. So people that work, or people that need someone to give them a ride, it makes it tougher for them, um, to get in." -Eva, PT

One of the four participants spoke specifically to the challenges of risk management; they had to evaluate the risks of an in-person interaction benefitting the patient's overall safety versus the risks of COVID-19 infection on older adults with in-person contact. I categorized this under the dimension of reduced **acceptability**. **Acceptability** encompasses the social factors that determine the possibility to receive care and the judged appropriateness of seeking the care, which includes

considerations of how the professional's values may influence the care provision.⁷ This participant had to make a judgement call on the risks incurred to the patient from in-person contact, versus their potential benefit of receiving rehabilitation services. Their patient population was older adults, where the reduced *acceptability* associated with the higher risks of in-person visits negatively impacted patient access.

“Yeah, so I rarely see people, clients. I had a home visit yesterday, but I just feel like everything that we... It's just risk management all the time. That's what it feels like. When you get a referral, trying to figure out, like whether this is urgent, whether they should wait – like, trying to figure out the risk on that end, on my end.” -Emma, OT

4.3 Practice change: Redeployment

Redeployment was a practice change that affected the majority of participants, whether full or part-time. Every participant identified they had either been redeployed, been approached about a possible redeployment, or were informed they will soon be redeployed. I labelled redeployment where participants undertook new roles to assist the greater provincial health system's pandemic response, and these new roles were unrelated to their usual primary care rehabilitation practice or patients. Of the participants who were redeployed, or told they will soon be redeployed, all but one reported they had no choice; the redeployment was mandatory.

Early in the pandemic, participants took on roles that assisted the greater health system response. Eight interview participants reported being redeployed in the early phase of the pandemic, where they assisted in a variety of ways. Of these early-stage redeployments, five participants assisted with the operations of a COVID-19 testing site, four were tasked with entry-point screening, and one trained other staff to don and doff personal protective equipment.

At the time of the interviews, both provinces were entering a second wave of increasing COVID-19 cases. During the interviews, seven participants identified their employer recently informed them they will be redeployed soon, but did not yet have many details. Most participants anticipated redeployment to direct patient care roles, such as long-term care or hospital settings. The second wave redeployment appeared that it would disrupt their primary care caseloads significantly, as six of the seven participants were told to expect full-time redeployment.

When participants were discussing redeployment, I noted many comments about redeployment worsening access, as it reduced or completely eliminated patients' ability to obtain rehabilitation services in primary care. I categorized these under the dimension of reduced **availability and accommodation**. In many cases, there was no alternative option for care, they had to instruct patients to go without. In the quote below, a participant highlights the challenges while planning for an upcoming full-time redeployment:

"...this time, we're actually cleaning up like we're going. So, it's getting people discharged, sending referrals back. So, it is more sad. It's not providing the care that's needed, you know." -Maria, OT

Later, Maria expanded on what her employer had told her about redeployment:

"We have literally been told, "You can work shiftwork. It might be shiftwork. Your vacation may not be honoured, and it might be full-time, so be ready. And the only way you can prep for this is-no one can take your caseload, so act as if you may not be with it next week."" -Maria, OT

Although redeployment reduced availability for all patients who required care, participants noted concern particularly for patients who they perceived as more vulnerable. Many participants expressed concern that their reduced availability may impact some patient populations more than others.

"Filling in is not a problem for us, but everyday we spend away from the clinic, we're not supporting our patients, so that's the challenge. Oh, and that feeds back on the mental health issue, like I said, that is not severe enough that medications and hospitals are needed, but you know, there's just having some sort of connection or an opportunity to talk about things that you know, may be, may be bothering them. So I think, I think it allows us to be a part of that support system. Because, typically, these patients who are seeing us are having some sort of health difficulty, so by being able to support them, it seems like it's helping the overall system." -Ainsin, RT

"Okay. And so how do you feel about that [notice of pending redeployment]? I know you'd expressed a little bit of uncertainty in the beginning, but how do you, how do you feel about it?"

I'd feel like I would be happy to go and help if my help was needed. Umm, my fear is just making sure that the roles that we play at primary care are still being done. We're a small team that supports sixty primary care providers, and I feel like we kind of support the really um, the really fragile patients. I feel like we, we are the ones that deal with people who have poorly managed chronic diseases and people who are very time-consuming, um who need sort of specific help. My concern is if we're redeployed, who is going to help those people and keep them out of hospital?" -Eva, PT

"I mean, the one thing that just comes to mind, I guess, would be the frail elderly in particular, or individuals that have complex medical situations and are more isolated, home-bound. I certainly feel like those are folks that might not be being seen when that could be helpful from a prevention perspective – if we're trying to keep people out of emerg and support them so that they can stay as healthy as possible. I do feel like, specifically in primary care, our doctors and nurses do home visits, and they still have been doing home visits. So, the vulnerable population, they're still being seen. But from a physio perspective, those individuals that, yeah, might be... you know, falls prevention stuff in particular, I think those folks might be (...) especially now because our providers have basically been told, "Don't send in your referrals because we're being redeployed." So, I'm guessing that there might be some people that get missed because of that." - Ashley, PT

I noted that redeployment was a period of misalignment between the supply dimension of **availability and accommodation**, and the demand dimension of **ability to reach**. Specific to redeployment, this mis-fit was caused by the changes to the supply (a significant decrease participants' availability), which then negatively impacted the demand-side's ability to access care. Participants perceived their redeployment negatively affected patient's ability to reach their services. They were still receiving referrals, indicating there was still a demand for services, but the rehabilitation professionals were unable provide care to these patients. The rehabilitation professionals reported that when they were told they would be redeployed, there was no alternative of care to offer patients. They had to cancel appointments, send referrals back to physicians, and reach out to existing patients to let them know there was no longer follow-ups available, for an indefinite amount of time.

4.4 Practice change: Team collaboration changes

The COVID-19 public health restrictions changed the way primary care teams interacted. Participants described many changes that affected their team functioning. I included two different changes under this category. The first code, virtual team meetings, involves teams shifting their meetings from in-person to online. I coded the second group of changes under reduced in-person collaboration, which encompassed shifting various team members to work from home, reduced in-person contact even within their clinic spaces, and moving from in-person communication to messaging apps. Of the participants interviewed, eleven spoke to how the changes in team functioning directly impacted their patients' access to rehabilitation care.

4.4.1 Shift from in-person to virtual meetings

Three participants reported the shift to virtual meetings allowed their primary care teams able to meet more often, and have better attendance from team members. They reported this provided an opportunity for the whole team to collaborate. Participants perceived that this collaboration resulted in patients better able to access to their care by providing an opportunity to remind referring providers about their role on the team, and share information about programs they offered. Participants reported these meetings resulted in more consults, more appropriate referrals, and ultimately increased access to care, all which I categorized under the dimension of improved *approachability*.

“So, yes, we meet once a month online now, and we have a bi-monthly COVID steering committee update email. That’s helpful, and so we can advertise our groups in that, too, to the provider group.

Right. That makes sense. Again, it’s like face-to-face time “I’m here. My program is here.”

Yes.

Increase that awareness more, I guess, than if you haven’t seen them all face-to-face, some of them in three years¹.

¹ Earlier in the interview, Eleanor identified that with in-person meetings, it was difficult for the whole team be onsite. She commented that she hadn’t seen some team members in three years. Now, with the use of virtual meetings, she notes there is better attendance from team members.

Yes.” -Eleanor, OT

“When you don’t know what somebody does, then you don’t even ask them for help, because you don’t know what their expertise is. So this has given me the opportunity to share with them what an RT does, what my knowledge base is, and how I can help with patients that maybe they would never realize before. So I’ve had more referrals from other health professionals.” -Tammy, RT

This improved **approachability** affected all patients who would benefit from rehabilitation professional care, and was not noted to be more or less impactful for any specific patient population.

4.4.2 Less in-person team collaboration

As a contrast to the improved access noted above, six participants reported that due to pandemic-related physical distancing measures, there was less communication and fewer in-person interactions within their primary care teams. These participants all expressed this resulted in fewer patients referred for their services. I categorized this data under the dimension of reduced **approachability**, as without a visible presence to remind providers that people with health needs can be seen by rehabilitation professionals, patients were not being referred. Many participants noted that their physical presence in the clinics served as a reminder of their services. When they were not there, fewer patients were referred for rehabilitation services.

“So, the doctors don’t even know that I work there. Like honestly, a doctor was shocked that I was still available for consults, but it’s because I physically haven’t been there for six weeks, or they think I’ve been redeployed.” -Emma, OT

“Do you think the access to your services have kind of been impacted due to the pandemic?”

I don’t think the access has, other than just providers not knowing that I am around, you know? I think the co-location is so important, and so if I’m physically not there, they just don’t really think of me, you know? So, I think, in that regard, I’m sure there’s a lot of people that probably would be very good candidates for OT, but it um, sort of feels like just the last priority right now.” -Emma, OT

“I haven’t really heard from most of the other doctors since I’ve been off. Soooo, I don’t know where any new patients are going, but they’re not referring anybody to me, and before they did. I feel like my physical presence in that office was the way I got referrals, whereas now, I think they forget I exist. Soooooo, there are a couple of doctors that are good, but the rest have kind of forgotten about me...”

After providing more specific details of the changes, Tammy reflected:

“It’s too bad. I need my picture plastered on the wall “Do you have breathing problems? Send your patient to this girl right here.” -Tammy, RT

In addition to reduced **approachability**, four other participants spoke to reduced **appropriateness**. They noted that fewer opportunities to collaborate in-person resulted in a negative impact on communication, and specifically on the quality of care. Using the conceptual framework, I categorised this as reduced **appropriateness**, as this dimension encompasses quality, timeliness, and the integrated and continuous nature of the health services.⁷ Participants perceived that the loss of opportunities for formal and informal collaboration negatively impacted the quality of care that patients received.

“Prior to the pandemic, I would go immediately talk to the doctor and get an answer for a medication change and go back to the patient and get the change done. During the pandemic, I would talk to this patient on the phone, I would send a message through the EMR, and I could wait a day or two to get a message back from the physician, and then I would have to contact that patient again to make that change. So, things moved a lot slower, and I found that very frustrating, because I constantly had a list of patients that I was waiting for the physician to get back to me and that I needed to get in touch with again to make the change that needed to be made. Before the pandemic, that would have been done in five minutes, and now it was taking two or three days. And then, if there is a weekend in there, it was taking even longer. So, communication was a lot slower.” – Heidi, RT

“Um, but I also think that there’s some, that the communication of the team has suffered. I started almost a year ago and I really don’t know very many of the actual primary care providers, because I don’t see them face-to-face and I can’t go into the clinic to follow-up

with them. Um my diabetes patients, I guess I would say specifically, I usually have more interaction with the primary care providers, and that's a bit harder to do now because everyone's working from all over the place, like a lot of them are working from home and stuff like that. Which, I think, ultimately impacts the patient care." -Eva, PT

While team collaboration and communication changes negatively impacted access, participants did not identify that this impacted any one patient population more than others. The reduced **approachability** and reduced **appropriateness** appeared to impact all patients who may require primary care rehabilitation services.

4.5 Practice change: Virtual Care

Last, but certainly not least, the provision of virtual care was a supply-side practice change experienced by all thirteen participants. Prior to the COVID-19 pandemic, the vast majority of the care provided by the rehabilitation professionals in our study was delivered in-person. With the onset of the COVID-19 pandemic and its need for physical distancing measures, all participants in our study shifted from in-person appointments to providing the majority of their care virtually.

Virtual care was provided by telephone, videoconferencing, and emailing or messaging apps. All thirteen participants reported using telephone appointments. The second most common form of virtual care was the use of videoconferencing. Four participants described using videoconferencing regularly, eight participants reported they occasionally used videoconferencing, but primarily used phone. One participant had not used video. Another form of virtual care was the use of messaging apps and emailing. Two participants used of two-way messaging apps with their patients, and three participants reported they started emailing their patients.

Participants perceived that shifting to virtual care impacted access both positively and negatively. These impacts were categorized across many dimensions of access, on both the supply and demand-side of the conceptual framework. The data within our interviews spoke to different patient populations affected by this practice change, in ways that both improved and reduced access.

To organize the multiple access impacts that resulted from the shift to virtual care, I have written it as follows: First, in section 4.5.1, I will present how the shift to virtual care improved access, and with subheadings for each dimension that was improved. When there is a particular ‘fit’, or ‘mis-fit’ between the supply and demand dimensions, this will be noted. Second, in section 4.5.2, I will outline how the shift to virtual care reduced access, using subheadings to outline which dimensions were affected. Following the same format as 4.5.1, I will note where there are particular ‘fit’, or ‘mis-fits’. Virtual care was a practice change with lots of data pertaining to how it affected different patient populations; this will be described alongside each dimension’s subheading. At the end of the virtual care section, the access impacts, the alignment between supply and demand dimensions, and population(s) affected will be summarized in a table format.

4.5.1 Virtual care improved access

All participants reported improvements in access to services with the use of virtual care. The improvements were identified across both the supply and demand dimensions, often resulting in a better alignment between the dimensions of accessibility and abilities. Keeping with the paired nature of the framework, this was another instance where a change in a supply dimension improved the fit with patients’ abilities, resulting in better access. When participants spoke to virtual care improving access, I categorized the data under the following dimensions: i. The use of virtual care improved ***availability and accommodation***, which participants perceived resulted in a better fit with patients’ ***ability to reach*** services. ii. Virtual care increased ***appropriateness***, which was perceived to result in a better fit with patients’ ***ability to engage*** with providers. iii. For patient populations who experience anxiety or stigma when receiving health care, participating therapists perceived the shift to virtual care changed the ***availability and accommodation***, which resulted in a better fit with their ***ability to seek*** care. I will describe how the shift to virtual care positively impacted the dimensions, and which patient populations therapists perceived benefitted from these access improvements.

4.5.1.1 Improved availability and accommodation, better matching ability to reach

Twelve participants identified that virtual appointments reduced geographic and/or transportation barriers. I categorized this as improving ***availability and accommodation***, as this was an organizational practice change that improved access. Participants perceived this improvement

was demonstrated by fewer no-shows and cancellations when virtual appointments were scheduled.

This shift to virtual appointments was perceived to result in better alignment between the supply and demand dimensions of access. Participants perceived that the organizational change of virtual appointments better matched their patient's *ability to reach* rehabilitation services, as the ease of virtual mitigated geographic, transportation, and physical mobility challenges.

Participants perceived patients who lived with lower socioeconomic resources and those who had physical limitations particularly benefited from this practice change.

“Considering these changes to phone, does it make it easier for some patients to access you?”

Yes.

Tell me more about that.

Okay. What has happened, what happens is some people, I have-I have a patient who finds it difficult to walk from her apartment to the clinic, and because she's on the, you know, disability or disability pension, it's expensive for her to take cabs. Um, the bus is, you know, can be a bit of a hassle for her, because she actually has to walk to the bus. She says she can see the clinic, but she can hardly walk to it. Um, so, for her, you know like getting a hold of her has been a little easier by phone. ...and then the other thing is that people who have to take the bus but it's two or three buses. You know and, if they're coming for a smoking cessation appointment and they don't really want to quit, (chuckles) it's easy to say, “Oh you know, I don't think I'm going to go.” -Ainsin, RT

"Are there any patients that are now unable to access your care?"

I feel like it's the opposite actually. There are people that I can connect with that I couldn't before, because they couldn't get there. They couldn't afford a cab, and they didn't live close to the office.” -Tammy, RT

“What type of patient populations do you think are benefitting kind of from this the most?”

...Chronic pain clients, I think there's an advantage. Yeah, the rate of people staying involved in groups is quite low because it takes a lot of energy to go somewhere for people living in chronic pain, so I think this makes it a little bit more easy and convenient – sometimes a little too easy, but, again, I think it's a good option for people.” -Emma, OT

“Also physical limitations. So those with equipment, wheelchairs, walkers can now more easily attend.” - Maria, OT

4.5.1.2 Improved appropriateness, better matching ability to engage

All 13 participants spoke to virtual care improving access in ways that improved the dimension of **appropriateness**. I categorized improved **appropriateness** when participants spoke to being able to follow-up more often (which reflects improved continuity), being able to respond to patients in more timely ways, and about improved quality of care with virtual care provision. **Appropriateness**, as a dimension, encompasses coordination/continuity of care, care quality, and timeliness. In addition to improved **appropriateness**, six participants spoke to virtual care better matching with patients' **ability to engage**, resulting in a better 'fit' between the supply and demand-side dimensions. **Ability to engage** was categorized where participants perceived patients were better able to participate in their care and/or commit and follow through with treatment recommendations.

The majority of participants spoke to the appropriateness of phone appointments to connect with patients. Phone appointments allowed for quick 'check-ins' on treatment plans, which also enabled more frequent patient-provider interactions. These frequent connections provided an opportunity to motivate and support patients to problem solve, which participants perceived led to a better continuity of care, improved timeliness, and overall better quality of care. Participants perceived that with more frequent check-ins and support, patients were able to engage in their care. They reflected on how the phone interactions facilitated problem-solving, and patients seemed better equipped to follow through with treatment recommendations. Below, participants describe their experiences:

“Since the beginning of the pandemic, what have you done that’s been the most helpful for your patients?”

Um, I-I guess, just, the convenience of the phoning. I think that’s probably um the best thing ... Oh and I think, following up more with them. Yeah.

Are you following up more frequently, or is it that you’re able to reach them for follow-ups better?

No, I’m-I’m following up more frequently. Um with the Quikcard program, it’s expected that we follow-up at four weeks and at six months. And with the... pre-pandemic, wouldn’t, I couldn’t follow-up with them before the four weeks, which was problematic, because sometimes at four weeks, they hadn’t used the Quikcard because of some technical problem. You know and now, what I’m able to do is to follow-up with them within a week or two, and if there is any issue, we can address it and get them using it by the one-month follow-up.” -Ainsin, RT

“Having [the phone visits] more often are beneficial. Before, I would only see people once a month when they needed to pick up their NRT. We’re allowed to give them four weeks at a time, so I would give them their four weeks and then book them in for four weeks from then, whereas over the summer, I’ve been calling people who’ve requested it every week and just had a quick little check-in, (...) and they’ve quit. Those people have quit. People just sometimes need more support and more reassurance that they’re doing a good job, and more plans. Rather the onus being on them to make a plan where they don’t know what they’re doing, I have helped them with their plan every week. So, “Okay, we’ve done this for this week. What’s the plan for next week?” and we’ll make a new plan, and every week, we sort of up the ante of the plan until they quit, and it’s been successful. So, I’ve had more people quit over this pandemic than I’ve had quit in the previous year.” -Tammy, RT

“...Do you think that the quality of care is still impacted, impacted in a way or not?”

I think there’s something to be said by seeing somebody in-person versus through a virtual means or a telephone means. And it really just depends on the situation because I look at now, I’m seeing people more often and more regularly, and that quality of care

has increased, right? So in that sense, it's great, and some people have said to me, "Victoria, if you couldn't offer virtual before, I probably would not have come to see you." I've had that. So, I think quality of care has increased from that perspective." - Victoria, OT

"There is no change in terms of access, they can access me very easily through the phone. Access is actually better. I would say because right away I get an email or something, I can call them. It's almost as if it's expected now, and the beauty is that we can count that as a statistics." -Mark, OT

The use of messaging apps was another form of virtual care that participants noted supported patients' **ability to engage**. Although the use of messaging apps was only identified by two participants, both spoke to its ease in connecting with patients, and they perceived it facilitated their engagement in their care. Below, one participant explains how messaging apps supported engagement with her younger patients:

"A lot of my asthma population enjoy it, 'cuz they're tough people to get a hold of, and young people don't want to talk on the phone, so I can just message them. Like I'm texting them, I guess, for a lack of better term over a secure and private platform. So, yeah that's a good thing." -Jenny, RT

Overall, all participants in our interviews spoke to virtual care improving **appropriateness**, as reflected by participants' comments on improved quality, coordination and continuity of treatment, and improved timeliness of patient follow-ups. This was most apparent with phone calls, but participants also identified improved **appropriateness** with video and messaging platforms. When virtual care enhanced the dimension of **appropriateness**, this subsequently led to a better alignment with the dimension of **ability to engage**.

Four participants spoke to the dimensions of enhanced **appropriateness** better matching specific patient population(s)' **ability to engage**. One participant noted that younger populations were more able to engage virtually, another noted that patients with chronic pain did well with a

virtual ‘check-in’, and two RTs noted the shift to virtual was appropriate for those who were trying to quit smoking. However, the interview data that I categorized under improved *appropriateness* and improved alignment with *ability to engage* was not limited to those specific patient populations. It appeared that the provision of virtual care improved access along those dimensions for any patients who, broadly speaking, may require extra support to engage in their treatment plans.

4.5.1.3 A change in availability and accommodation, resulting in better alignment with ability to seek care

Three participants noted that the shift to virtual care enabled better access for patients who may experience stigma or anxiety with in-person care. The shift to virtual care was a change in the appointment mechanism, which I categorized as a change in availability and accommodation. This change resulted in an improved alignment with the demand-side dimension of *ability to seek*. This reflects the integrated nature of the dimensions within the framework;⁷ a change in one dimension can affect any other dimension along the framework. *Ability to seek* is a dimension that reflects if the care available meets the needs of different cultural, socioeconomically disadvantaged, or vulnerable groups.⁷ Although this access impact was less frequently reported, when evaluating equitable access, I view it as an important finding. These three participants shared examples of how virtual platforms reduced access barriers for patients with mental health challenges, patients who identify as transgender, and patients who have obesity. Below are quotes that encapsulate improved alignment with the PCAHC dimension of *ability to seek*:

“Does [the shift to virtual care] make it easier for anyone?”

Yes! For a few people to not have the stress of having to travel to the location, it’s been good. For some people, it’s not healthy to have the external structure of an appointment and the informal interaction with other people even with people they don’t know, like to come in and speak to clerical “I have an appointment at this time” and just to have to speak to someone, someone holding the door “Thanks for holding the door for me.”

Informal interaction.

Again, I don't have a mental [health] background, so what type of patients would the video work better for? Like, those patients that you're talking about, but is there a certain group that you could attribute that to?

I'd say my patients with chronic anxiety, they're, actually, happy that other people have some anxiety similar to them. And pain, some of those patients with chronic pain, they're happy they don't have to come in...

Eleanor elaborated on some attendance challenges for certain patients, then was asked by the researcher:

That's great. So, it sounds like it is really working for some people?

Yeah, it's really working for some people.” -Eleanor, OT

“I do see some trans patients, as well, and those patients are the hardest to get into the clinic for body imaging issues. They don't want to take off their shirt, they don't me to touch them, and they just have a fear of healthcare providers because of past experiences, past trauma, or whatever. I find I've done a little bit better with calling them...” -Tina, PT

“I think people are more open to, doing things in their home or, trying it out and not feeling like they have to fully commit to coming into a clinic and pay for parking and go through the hassle that there is with that, especially for a, like, I want to say the obese population. I think this is a, this is a great time when virtual can be used, and I had two people that, I don't know if they would really want to come into clinic and feel comfortable with it, and yet they're great doing virtual with me, and we've built the rapport. And now, it's almost come down to, uh like, they couldn't believe what their life looks like at this point.” -Victoria, OT

4.5.1.4 Summary of virtual care improvements

In summary, participants felt the shift to virtual care created access improvements. These improvements were noted across multiple supply-side dimensions, enhancing access for specific

patient populations. Virtual care both improved access and was found to be a better fit along the supply-demand matched dimensions of *availability and accommodation* and *ability to reach*, and *appropriateness* and *ability to engage*. There were also improved alignments with the demand-side dimension of *ability to seek*. The access improvements participants identified that impacted specific populations are summarized in table 1.

I will now present findings that describe how the shift to virtual care worsened access for certain patients.

4.5.2 Virtual care reduced access

Although the shift to virtual care improved dimensions of access for some patients, this was not observed for all patients who require rehabilitation services in primary care. Participants also spoke to situations where virtual care reduced access. This reduced access was categorized across multiple dimensions. In some cases, the practice change resulted in a ‘mis-fit’ of the dimensions for certain patient populations, as participants observed that virtual service provision did not align with the abilities and resources of certain patients.

When participants spoke to virtual care reducing access, they described impacts that were categorized under the following dimensions: i. Virtual service provision reduced *availability and accommodation*, which then was perceived to impact certain patient’s *ability to reach*. ii. There were situations where virtual service provision reduced the dimension of *appropriateness*, which then resulted in misalignment with some patients’ *ability to engage* in their care. iii. Some participants noted that virtual service provision reduced their *approachability*, which worsened the fit with patients’ *ability to perceive* those services existed. Each of these ‘mis-fits’ between the dimensions are further described in following three sections.

4.5.2.1 Reduced availability and accommodation, worsening alignment with patients’ ability to reach.

When appointments were primarily through virtual means, eleven participants spoke to reduced *availability and accommodation*, which mismatched with many patients’ *ability to reach* care. Due to the need to reduce in-person contact to minimize the transmission of COVID-19, all rehabilitation professionals who participated in this interview provided the majority of their care using telephone or video appointments. Some participants still provided in-person appointments,

but at a reduced capacity. Others had times (which likely coincided with pandemic waves) where the only care they offered was via virtual means. Participants spoke to three interacting factors that either alone, or in combination, negatively impacted the dimension of *availability and accommodation*:

1. Participants observed many patients were unable to use videoconferencing. When videoconferencing was the only appointment mechanism available, participants noted that certain patients were completely unable to reach care.
2. Participants noted certain patient populations were unable, or had difficulty using the phone to conduct appointments. In some cases, this resulted in an inability to reach care.
3. With appointments primarily available over video or telephone, this either completely or significantly reduced availability for patients who required in-person appointments.

The reasons listed above sometimes intersected, with participants identifying some patients were unable to use video or phone, leaving no available option that worked except for in-person appointments. In these cases, participants noted these patients were completely unable to access the care available. These cases highlighted the misalignment between the supply-side dimension of *availability and accommodation*, and the demand-side dimension of *ability to reach*. One participant describes her experiences below:

“And do you think there are some patients that are just altogether not able to access your services?”

Yes. Yeah. There's-there's been some issues with people that don't have, who can't attend the groups that we're offering because they're virtual and they don't have internet, they don't have, a new enough phone to log in. Older people, they just can't figure out the communication, um or even people that have a hard time accessing the in-person appointments, just with um... um the barriers like we can only offer appointments in chunks of time, because we want to minimize the PPE usage, so even just the availability of the appointments we offer is less.” – Eva, PT

Below, a second participant reflects on the multiple factors reducing *availability and accommodation*, and subsequently misaligning services with her patients' *ability to reach*. She notes that certain patients are no longer on her caseload as a result.

“However, there is another population, and that is the population that does not use virtual. So, those people unfortunately are not on my caseload anymore because they kind of have refused telephone or virtual. Um, but if I had said to them, “Hey, I’m going to see you next week. Is that okay,” they would’ve said, “Yeah, that’s fine,” and that wouldn’t have been as much of a problem. So I think for those people, the quality of care has gone down.

And if you don’t mind elaborating, who is this patient population that you’re not [able to reach]?

I would say the older adult population. I don’t know if I could specifically say a certain uh diagnosis, per se, but I would just say the older adult population. There are some people that don’t access internet, computer, are not savvy with it, are not confident. Um, and these are the people that are more self-isolated now. I know a couple of them have been open to telephone calls where we do exercise on the telephone. Um but others, I think just they didn’t want that. So, I think we tried as much as we could, but there also has to be a reach out to compromise, and, if they wanted more face-to-face and that couldn’t happen, then they were fine, like not having that service.” -Victoria, OT

There was a subset of patients for whom videoconferencing was not accessible. When reflecting on the shift to virtual care, the inability to use videoconferencing was the most commonly identified access barrier, mentioned by ten participants. I categorized these as worsening *availability and accommodation* which created a misalignment in services with patients’ existing *ability to reach*. Participants spoke about patients who weren’t familiar with technology, older adults, people with lower socioeconomic resources, and people who lived in rural areas with poor internet access. In the following quotes, two participants describe how access worsened when video was the only appointment mechanism available:

“How about the virtual component? Do you think, in terms of virtual, there is some patient populations that don’t have access, or have increased access?”

No, yeah, I would say it’s certainly a barrier. I had a client today even when... I wanted to invite her to join a pain group, and, yeah, she doesn’t have internet. She doesn’t have data on her phone. Like, I was telling my physiotherapy colleague, “I don’t really know what to do with someone like her.”...-Emma, OT

Emma then explained how joining the pain group is the first step, helping establish that someone is ready for the care. She then described how she was unable to create access to the pain group for this patient:

...[I told the patient] “I’ll call you when things have shifted. I’ll keep it on my list, and we’ll get in touch down the road.” -Emma, OT

“Like I said, I’m rural, so a lot of patients don’t actually have reliable enough internet. I talk to a lot of people who are just like me where their internet, when it works, it works, but when it doesn’t work, it doesn’t work, so if they were offered a video phone call, they would often turn it down.” -Heidi, RT

“Can I ask why you haven’t used the virtual visits?”

I think a lot of, especially older patients, don’t have, you know a cell phone, or if they do have a cell phone, they’re not familiar enough with it to use it.” -Ainsin, RT

Access challenges were also noted when participants conducted telephone calls. Five participants spoke to reduced **availability and accommodation** that mismatched with patients’ **ability to reach** specifically when trying to reach patients by phone. This included clients with hearing loss, older adults with mild hearing or cognitive impairments, people without access to private phones or space, including individuals who are unstably housed and youth in large families. One participant describes the challenges she experienced with phone:

“You may have already answered my next question, but do you think there were some patients that were unable to access your services completely?”

Yes, I do. If I had to, I was still seeing patients in-clinic, but some patients were also declining to come out of fear of not wanting to be in public, and not wanting, you know, to be exposed. Then, there were other patients that we were stopping from coming, because of their lung function. I can think of one specific patient. He runs on a pay-as-you-go cell phone, so some months he doesn't have money to put money on his cell phone, but he has an FEV1 of less than 20 percent. So, we stopped him from coming to the clinic, because he has severe COPD, and we didn't want to expose him to something. But there were a couple of times where I tried to call him, and he couldn't answer, because he was out of minutes on his cell. So, he's a specific one that he never missed an appointment with me. He always came to his appointments, but now I couldn't give him the care or have the communication I needed to with him. I'm not saying there was a lot of patients like that, but if I can think of one, there are definitely more out there, too.

Just generally speaking in the broader sense, who would you say these patients are that weren't able to access?

Probably more elderly patients, and ones with more severe disease, which is unfortunate, because they were the ones that we wanted to stay on top of, but they also might have been the ones falling through the cracks.” -Heidi, RT

4.5.2.2 Reduced appropriateness, worsening alignment with patients' ability to engage

Eleven participants spoke to reduced **appropriateness** of virtual visits. Eight of the eleven participants highlighted, in particular, specific challenges with providing service over the phone, including lower quality of service provision, missing assessments that would impact the patient's outcome, “guessing” treatment plans, and difficulty teaching patients without visual cues. Below are quotes from two participants, which capture some of the challenges of providing care over the phone.

“Since we started doing virtual phone calls, we found that we wanted to follow-up with people a little bit more often than we would have because, we weren't able to physically

see them do the exercises or even assess them. We're just kind of making our best guess from the subjective information we have...." -Eva, PT

Later Eva spoke to how the reduced **appropriateness** changed her treatment approach,

...[Does] this whole thing impact the level of care, or the quality of care, that you can provide to patients?

Um, yeah, I do think it, it does. I think um...I think we have to treat a little bit more conservatively, and I think that we, aren't able to do the full assessment that we would have, so I think there's a bit of a fear that there's probably some things we're missing that we're not even aware of, like some diagnoses or something that we're probably missing." -Eva, PT

"I can't assess their environment, I can't assess how they live through their day and what they do and what challenges they might have, physically, in their homes and stuff like that. It gives that personal touch. I'm missing that. And especially when you're trying to teach somebody pursed lip breathing and how to relax with pursed breathing. It's hard to do that without seeing them. I feel that that's really detrimental to them." -Tammy, RT

The reduced **appropriateness** was also identified with video interactions. When providing patient education virtually, participants expressed difficulties compared to in-person.

"I mean we can still give the same per-like but it's just, it's tough you know, like inhaler instruction for example, or, or um you know, someone's using a flutter device or PEP device for sputum induction, that's very difficult to, explain or teach people over a screen or on the telephone, so, I think it has been impactful." - Jenny, RT

Five participants perceived that with telephone or video appointments, this led to a misalignment with **ability to engage**. Decreased **ability to engage** was categorized when participants identified that when in the virtual care appointments, some patients had difficulty understanding, were distracted, or weren't prepared for the appointment, and thus had a harder time engaging. Four

participants noted the reduced *appropriateness* of virtual care resulted in a misalignment of *ability to engage* for specific patient populations more than others. Of these four, two participants identified older adults as a group that were not well-suited to engage in virtual care, including care over the telephone, and two participants noted that people with English as a second language had challenges engaging in virtual care.

Emma, an OT, described how at times, the ease of attending virtual appointments may actually reduce engagement. Below, she recounts situations where patients passively attend appointments, rather than actively engaging.

“It’s easy. They don’t have to leave their house. It’s [inaudible] population, but at the same time, it’s almost too easy, and so people are less likely to show up because it’s just... You know, the shared care counsellor was saying that she had someone just say, “Oh, yeah, your phone call woke me up for our appointment,” and it’s like that’s not really the point. Just because it’s so convenient and easy, you still sort of have to be ready for this, to participate. Yeah, so I think it works both ways. I would say it has been an advantage, and I could see continuing virtual in the future because I do think it... For those certain people, that accessibility is really important, and it does make a difference. So, in that way, it’s nice.” -Emma, OT

Although most participants identified challenges with the *appropriateness* of virtual rehabilitation service provision, three participants felt the challenges were mitigated by the benefits of the virtual appointments. When asked about the quality of their services, these participants reflected that virtual care did decrease the quality, however they responded that they were able to enhance quality in other ways. One participant, an RT, shared that they thought the quality of education declined with the telephone appointments, due to the loss of demonstration. However, they immediately added that they felt this had minimal impact, as they had more time to spend on patient education.

“So in terms of the quality of care that you’re providing, does the changes in service delivery impact the quality of care?”

Uh, I, I-I think so, but it's kind of like, it's supporting itself. For instance, um I can't give them materials or you know show them things, right, so I feel like I need to talk to them more in order for them to um, to acquire the knowledge and capabilities, but I also have more time to do that. So it kind of feeds, fed on itself.” -Ainsin, RT

Julie, a PT, noted that virtual service provision may have shifted some patients' perceptions of quality, but it also forced an emphasis on therapeutic exercise, which she felt was a more evidence-based way of providing care.

“My next question for you is about quality of care. Do you think having, for example, virtual visits or phone calls, do you think that affects the quality of care? Or what are your thoughts on that?”

Um...um, a lit, yes and no, I guess. I think it affects, I think it might affect the patient's experience of quality of care, because I think a lot of patients feel as though uh massage or acupuncture or ultrasound are very effective in helping them recover from their pain, whereas really the research is so-so on, on that and it's more about exercise. And so, I feel as though, the, delivering physio virtually has shifted the focus to exercise and a lot of weight is put on that, which I think is a very good thing. So in that sense, I think that virtual has really helped physiotherapy.” - Julie, PT

When reflecting on the quality of virtual service provision, Mark, an OT, reflected that his initial feelings had changed.

“Initially my inclination was no this is not good quality of care. But, on reflection on that is that it is care. It may be not the best quality of care but it's care. And the second reflection I have is that patients are also very, uh, what's the word, uh, they're flexible at the same time. They understand that this is the way to do things now and they're not complaining, they understand. So they're kind of flexible as well so they're changing and clinicians are changing so we are both changing together actually so it's, it's working out that this pandemic has made us more flexible, as you say virtual platforms...As well.

And, um, I think the that most of us are going to keep this type of virtual visit going forward after the pandemic I would say.” -Mark, OT

These participants recognized that virtual care on occasion reduced the quality (and thus reduced the dimension of **appropriateness**). However, when reflecting further, these three participants appeared to feel that losses in quality were mitigated by other benefits.

4.5.2.3 Reduced approachability, creating a misalignment with ability to perceive.

Three participants spoke to virtual care reducing access in ways that was categorized under the dimensions of reduced **approachability**, which then created a misalignment with patients’ **ability to perceive**. **Approachability** was categorized as the Levesque et al. definition includes “that people facing health needs can actually identify that some form of services exists, [and] can be reached”.^{7p.5} **Ability to perceive** is the paired demand-side dimension, and includes concepts such as health beliefs, trust, and expectations.⁷

Of the three participants, one participant spoke to virtual care reducing the **approachability** of their group therapy programs, limiting who accessed these services. They identified the clinic’s virtual group therapy programs were cancelled due to a lack of enrollment, which they attributed virtual care provision decreasing the awareness that the virtual program existed. In contrast to this, another participant identified her primary care clinic sent out monthly newsletters highlighting their programs and presented their programs in team meetings, and did not speak to any **approachability** issues when offering virtual therapy programs.

The two other participants identified the shift away from in-person appointments, the reduced **approachability**, created a mis-fit with the dimension of **ability to perceive**. They commented that patients were less aware of what services were available, or, if they were aware, they did not trust it could be beneficial to their health. Below, one participant reflects on their experiences when patients opted out of virtual care, as they did not trust nor expect that virtual care would benefit them:

“When I first started my virtual appointments, I was calling a waitlist of people who were referred to physio when I was gone, and I would tell them “Okay, well physio right now

is over the phone or over video” and at that point, I didn’t have the ability to see anyone in-person. And there were a number of people that said, “Virtual physiotherapy is not going to help, help me” or “I don’t think it’s going to help me, therefore, I’m not going to follow-up with this.” Um so I feel like access has changed based on people’s perception of what physiotherapy is and what they think could help them.” -Julie, PT

4.5.2.4 Summary of negative access impacts as a result of virtual care

Participants identified many situations where virtual care worsened access. This was noted along the matched supply/demand dimensions of **availability and accommodation** resulting in a misalignment with **ability to reach**, reduced **appropriateness** creating a mis-fit for patients’ **ability to engage**, and reduced **approachability** misaligning with patients’ **ability to perceive**. In many cases, the practice shift to virtual services resulted in a mis-match between the supply-side dimensions of accessibility and the abilities and resources of the patients seeking primary care rehabilitation services. This mis-match was thought to worsen certain patient populations’ access to care, by creating new barriers. Participants perceived that the access challenges affected certain patient populations, the specifics of which are outlined in table 1. However, despite many participants identifying worsened access, three of the participants spoke to the benefits of virtual care mitigating any reduced access.

4.5.3 Summary of virtual care access impacts

In summary, the rapid shift to virtual care impacted patients’ access to primary care rehabilitation services. Participants perceived the shift led to both reduced and improved access, which varied based on the situation and the patient populations. Access barriers were most apparent with the use of video, however participants also identified that access worsened for some populations even with the use of telephone. Despite the access challenges identified, some participants reported the benefits outweighed the challenges for many patients, thus making virtual care a possible consideration for the future.

Table 1. Summary of how virtual care impacted access.

Supply dimension impacted by virtual care	Impact on alignment between supply and demand dimensions	Populations impacted
Availability and accommodation	Improves	Improves access for: <ul style="list-style-type: none"> • People with lower socioeconomic resources • People with physical limitations and/or transportation issues • Populations who experience stigma
	Worsens	Reduces access for: <ul style="list-style-type: none"> • People with hearing loss • Older adults • People with unstable housing • People without access to private space • People without reliable internet connections
Appropriateness	Improves	Improves access for: <ul style="list-style-type: none"> • Patients who benefit from additional support to implement self-management strategies for their medical conditions
	Worsens	Reduces access for: <ul style="list-style-type: none"> • Older adults • People who speak English as a second language
Approachability	Worsens	Reduces access, in ways not attributed to a specific population

Table 1 outlines how virtual care was described to impact access for certain populations, by changing the alignment between the supply and demand dimensions.

4.6. Changes in patients’ health needs

Participants observed that, as a result of the pandemic, patients were presenting with new or worsening health problems. This demand-side change led to a practice change, as the rehabilitation professionals noted that responding to these health problems was different than their usual practice. I was unable to categorize the access impact due to the changing health needs using the PCAHC framework, as these changes did not, at the time of our interviews, always correlate to seeking and progressing along the continuum of care. As a result, in this section, I will not identify access impacts in relation to the dimensions within the framework, but I will highlight areas where participants spoke to access impacts.

The most common perceived changing health need was an increase in patients with mental health problems. Seven participants identified their patients had more mental health issues, mainly increased anxiety. Three of the seven participants previously had a caseload related to mental health, and they perceived an increase in referrals for mental health as a result of the pandemic.

“I would say mental health has increased the referrals. There will be pain diagnoses, but now, instead of pain and struggling with some anxiety, it’s struggling to leave the house or go to work um due to fear and anxiety with COVID and pain secondary.” -Maria, OT

“Yeah, I would say I’m getting a lot more referrals with people who have anxiety – like, COVID-related anxiety, for sure.” -Emma, OT

In addition to increased mental health challenges, participants noted that patients were more open to discussing mental health with them. This openness may have contributed other supply-side practice changes, such as ‘wellness checks’ where participants would ask patients about both their physical and mental health. Participants did not speak increased mental health challenges in one population more than another; mental health challenges were perceived to be an overall increased community health need, suggesting potential increased demand for mental health services.

“What do you think the big challenges and healthcare needs are in the community right now? So, the community that your primary care team services, what are the big things?”

Oh my gosh, mental health.

Yeah.

I had a patient commit suicide two days ago.

Oh, I’m so sorry.

He was 40 and yeah, It’s incredibly sad yeah.

Why do you view mental health as being a big need now during the pandemic?

*Almost every patient I talk to has voiced concerns about anxiety and loneliness.” -
Tammy, RT*

“We always have people with mental health concerns, but I think that now like the mental health impact is through the roof, and seeing a lot of mental health concerns in people we might not see it as much as, um so the traditional working age person. Elderly are really isolated and they’re feeling that. Kids are feeling really, anxious and upset and that kind of thing, with the things that are kinda hanging on.” -Jenny, RT

In addition to more challenges with mental health, five participants noted that their patients were experiencing worse physical health. Some attributed this to inactivity and isolation due to the pandemic. Some participants noted this changed their practice, with patients presenting with different physical complaints, and/or physical problems related to isolation. Participants perceived older adults, people more at risk of COVID-19 (such as those with respiratory conditions), and people who lived under lower socioeconomic status to have worsening physical health due to the pandemic.

“I do work quite closely with the physio that we have because I do send her a lot of my patients, because if they exercise, their life could be so much better. You know=

=Is COVID an added barrier to that issue?

=Absolutely, yeah yeah. Because people don’t get out, so they’re losing muscle mass. Um some of them don’t even want to go in the hallway and walk. Um, and so not only are they not doing activity, they’re limited in the type of activity they can do. So um yeah, it’s um, it’s a huge thing. It will be interesting to see the fallout of, having to stay inside for this long period of time.” -Ainsin, RT

“Um I think we’ve noticed, especially this fall/winter, that the older people that we’re seeing, have really felt the effects of, immobility and social isolation, not leaving their home and not getting any functional movement throughout their day. So, I think we’ve noticed a change in those types of people. It’s hard to say whether we would have gotten those referrals or not, but those are certainly referrals we get anyways, but um, I just think we’re definitely seeing the effects of the, really of the COVID restrictions more than anything else.” -Eva, PT

“From a physio standpoint, they don’t have access to any place to participate in physical activity. They don’t have access to treadmills or um like stationary bikes or equipment of

any kind necessarily, so I think isolation makes it harder for them. Um, and I think management of, chronic diseases and um, the mental health aspect of it I think is another huge, need.” -Eva, PT

At the time of our interviews, these changing health needs or worsening mental and physical health were relatively new and evolving. As a result, there were few access impacts noted by participants other than an increase in mental health referrals, and patient presenting with different physical symptoms. These new or worsening health needs may indicate a possible increase in current and/or future demands on primary care rehabilitation services, however this was difficult to determine at the time of our interviews.

4.7 Future practice changes

Post-pandemic, primary care may evolve from its pre-pandemic routines, and some of that may be the result of practice changes that clinicians value. Despite the challenges experienced with virtual care, when asked “Which practice change do you hope to keep in the future?”, participants responded they hope to continue with some version of virtual care. Eleven participants were asked about changes they wanted to keep, and all identified they would continue with an option of virtual visits. All of these participants wanted to continue with phone appointments, and seven of the eleven hoped to continue with a video option. The reasons participants justified wanting to keep virtual visits reflected the dimensions of improved **availability and accommodation** that better aligns with existing **ability to reach**, and increased **appropriateness**, for some, resulted in a better fit with patients’ **ability to engage**.

Four participants specifically wanted to keep conducting the initial visit over the phone. When discussing the benefits of conducting their first visits over the phone, they perceived that it matched better with some patients’ **ability to reach** services and **ability to engage** in care.

“And over the phone, you actually sometimes get a bit more.that comfort they have again, behind a phone or a screen is different than in-person. And it’s not as chaotic. When I’m in their home, we’re doing everything, we’re trying to see and assess everything so we don’t have to do it twice or three times to burden their time and schedule, but also efficiency for therapy, right? So, sometimes that collection of

information is actually, I didn't realize how inefficient it was but also not as in-depth um. So, the phone interview, I think, will continue.” -Maria, OT

“That 50 and over population that don't speak [English] and aren't too familiar with physiotherapy, if I noticed that they no-showed, then maybe we just continue with phone appointments instead, or ask them, right what they prefer. I think physiotherapy is most superior, obviously when you're in there with the person and you're seeing everything and talking to them, so I would still probably do at least 70 to 80 percent of that if I had a choice, but, you know have some leeway with the patients, because you still want to provide treatment, um...that need it, so this is another way for them to access care.” - Tina, PT

When discussing the benefits of keeping virtual visits in the future, participants perceived that the use of virtual care reduced transportation barriers (increased **availability and accommodation**), and allowed for more frequent quick 'phone check ins' (increased **appropriateness**), both of which resulted in patients more able to **reach** and **engage** in care.

“Um I am, I'm hopeful that, most things will revert back to being in-person, but I'm hopeful that there will be some virtual visits. Maybe I'll keep one day a week where I can keep that virtual. Because I feel as though, like being able to connect with this marginalized population that might not come in, but also just to check in with all of my patients just briefly to say “How are the exercises going? Is this helping? Should we change anything?” kind of on the fly, I think is very important and isn't necessary for them to come in for an appointment for that. I'm hopeful that phone calls and virtual will still have a little bit of a place.” - Julie, PT

“...When we talk about all of these changes, um, are there any changes that you think you'll keep once this pandemic ends?

Uh yeah. Certainly, I was doing some phone follow-ups, and um, I probably will to, continue to increase that as a percentage of my follow-ups....” -Ainsin, RT

Ainsin further explained his rationale for wanting to keep patient follow-ups over the phone,

... Are you following up more frequently, or is it that you're able to reach them for follow-ups better?

No, I'm-I'm following up more frequently. With the Quikcard program, it's expected that we follow-up at four weeks and at six months. And pre-pandemic, wouldn't, I couldn't follow-up with them before the four weeks, which was problematic, because sometimes at four weeks, they hadn't used, used the Quikcard because of some technical problem. You know and now, what I'm able to do is to follow-up with them within a week or two, and if there is any issue, we can address it and get them using it by the one-month follow-up." -

Ainsin, RT

In conclusion, the majority of participants in our study identified virtual care as the practice change they want to keep for the future. When reflecting on *why* they want to keep virtual care, participants repeatedly spoke about the access improvements. Their experiences with virtual care suggest that virtual care improves access across multiple dimensions, and overall reduces access barriers. Participants reflected that in many cases, virtual care was an appropriate form of rehabilitation care, and is a practice change that should be kept moving into the future.

5.0 Discussion

The purpose of this thesis was to explore the practice changes and access impacts to primary care rehabilitation practice during the COVID-19 pandemic, applying a lens of equitable access.

Access to healthcare, including primary care rehabilitation, is important. Access inequities can potentially lead to health inequities, where a patient or population are more susceptible to ill health as a result of injustice.^{5,20} Care that meets the patient's health needs, at the time that they need it, in the right setting, is optimal access.¹³ Primary care in Canada aims to reduce access barriers and enhance health equity by providing appropriate care that is available to all, regardless of personal resources, wealth, or circumstance.^{51,136}

The COVID-19 pandemic arose quickly, and primary care rehabilitation professionals had to adapt their practice in a very short time span. Many practice changes impacted access to care. Some of these changes impacted access for all, while others impacted access differentially, based on each populations' resources, circumstances, and abilities. As the pandemic moves into an endemic future, there may be a need to continue to mitigate the risks of COVID-19 transmission and have ongoing public health measures. As well, the primary care clinicians reported that they planned to keep some of the practice adaptations beyond the pandemic. Considering that some of these changes may stay, this exploration of equitable access impacts was essential to learn how primary care rehabilitation professionals can support equitable access to care into the future.

The practice changes within this study impacted access in multiple ways, according to primary care clinicians. The Patient-Centred Access to Healthcare (PCAHC) framework, figure 1,⁷ was helpful to organize the access impacts and served as a lens of equitable access which I applied to the data. When evaluating how the practice changes impacted equitable access, I asked myself these questions: When access reportedly changed, was this change experienced equally for everyone? Or were the access changes more or less apparent for certain populations? Using the PCAHC dimensions, I was able to better describe how each practice change impacted access, and how these access impacts aligned with different populations' abilities and resources.

In this discussion, I will first briefly present the practice changes that either worsened or improved access for all primary care patients. However, as the research purpose of this thesis is to *explore the access impacts through a lens of equitable access*, this discussion will focus on the

findings that impact equitable access—that is, access changes that, when considered with a population’s abilities or resources, either create or reduce access inequities.

Practice changes that impacted access for all patients

There was one practice change that improved access for all primary care patients who could benefit from rehabilitation professional care. Participants whose teams conducted virtual team meetings identified that this change improved the primary care team’s interprofessional collaboration, because more people attended the meetings, and/or the meetings were more frequent. For participants whose teams adopted the virtual meetings, they noted the meetings were an opportunity for the rehabilitation professionals to share their programs, explain their roles, and, more generally, remind referring providers that the rehabilitation professionals were part of the team, and offered services that could help their patients. This resulted in increased referrals, and more appropriate referrals to the rehabilitation professionals, thus improving patients’ access to care. This finding is not surprising; interprofessional team collaboration, even prior to the COVID-19 pandemic has been well supported by the literature to improve patient outcomes, result in appropriate use of care, and overall reduce healthcare costs.^{137–139} The findings from my thesis further support the benefits of team collaboration as one way to enhance appropriate access for patients in need of primary care services and support the use of virtual means to facilitate collaboration.

There were four practice changes that worsened access for all patients who needed primary care rehabilitation services. These were: a loss of ability to perform usual tasks, including spirometry and in-person group therapy programming; loss of interprofessional team collaboration; redeployment; and the increased workload of risk mitigation associated with in-person visits, one of the aspects written about under the section 4.2. These four occurred as a direct result of the pandemic changing the way care was provided and the increased demands on the health system. In-person patient care was significantly reduced to avoid transmission of the virus, and some participants experienced time periods that they could not provide any in-person treatment. Group therapy classes, which prior to the pandemic involved gathering multiple patients in the same room, had to be stopped. Spirometry ceased, as there are concerns that it is an aerosol generating medical procedure, which has risks of viral transmission. When participants were able to see patients in-person (on a limited basis), they had to ration personal protective equipment and were

responsible for extra cleaning protocols, which reduced their availability for direct patient care. And finally, redeployment of the rehabilitation professionals either completely or partially eliminated their ability to provide services in primary care.

Unfortunately, all of these practice changes limited access to rehabilitation services, affecting all patients who needed the care. These changes occurred in response to rapidly changing public health measures and the pandemic's demands on the greater health system. It is possible that during this rapid upheaval, equitable access may have been less of a priority than the immediate health system needs related to the pandemic. There is potential that there may have been inequitable access impacts from these practice changes, such as redeployment, but this was not reflected in the data, as it was not noted specifically by participants. As I will cover later, under strengths and limitations, this may be a limitation, reflecting the reliance on only one data source.

Redeployment is a noteworthy practice change, which may have resulted in access inequities at a broader population level. But was not reflected specifically in the data. Participants in our study noted when they were redeployed, they had to cease their involvement with patients, often with no alternative option of rehabilitation care to offer. Considering that rehabilitation professionals were integrated in primary care with the intention to enhance access to comprehensive, appropriate care,^{59, 64,140} their redeployment certainly creates an access gap in access to comprehensive primary care. This gap may be experienced more by patients who are already at risk of health inequities, in need of more comprehensive services. Although it may be possible for some patients to seek care in the private sector during times of redeployment, it is worth noting the ability to pay for care in the private sector may not reflect the characteristics of all patients who are receiving comprehensive, interprofessional primary care.^{59, 65,141} Some possible alternatives in future times of staffing crises are to retain a portion of the rehabilitation professional workforce in primary care, while others are redeployed. This would result in more continuity of access to comprehensive care, which may be helpful to support patients who have urgent and complex needs.

As rehabilitation in primary care moves into the future, some of the access impacts, such as those which occurred with redeployment, can potentially be reduced with improved planning. Similarly, many of the tasks lost, such as spirometry, have the potential to resume with extra risk-mitigation measures. Although all of these practice changes resulted in worse access, it is

possible they were temporary, and occurred only in the context of the forced rapid adaptation of the health system as a result of the pandemic. When looking into the future of primary care rehabilitation professional practice, there is potential these practice changes are recoverable, or can be mitigated in times of future crises, and access to care will be less affected.

Practice changes that impacted equitable access

In our study, some practice changes affected certain populations more than others. These access impacts varied depending on how practice change (the supply-side change) fit with the populations' personal resources and abilities (the demand-side). Some practice changes improved access for groups who previously experienced access challenges, thus enhancing equitable access. However, other practice changes resulted in new or increased access barriers, which meant certain patients experienced new inequities. The three practice changes that enhanced access from an equity perspective were the use of outreach, wellness checks, and for some patients, the use of virtual care. However, there was one practice change that participants repeatedly noted presented new access inequities: the shift to virtual care created new barriers for some of those already underserved. I will describe each of these changes to equitable access below.

Outreach and wellness checks enhance equitable access

Participants perceived both outreach and wellness checks improved access to care for individuals considered vulnerable or isolated, specifically older adults, and those living with chronic physical or mental health conditions who also had limited socioeconomic resources or limited support systems—many of whom already experience or are at risk of health inequities.^{34,142,143} Both outreach and wellness checks meant that participants contacted patients, beyond their usual duties, to ask about stress, finances, mental or physical health. This may have been exceptionally helpful during the pandemic, as Canadians reported overall significantly lower self-perceived mental health.^{144,145} Many of the rehabilitation professionals in our study responded to this increasing population health need. Participants reported that by initiating these conversations, at times they facilitated access to care, including access to social or financial supports. In other cases, participants felt their phone calls helped mitigate the increased social isolation or mental health struggles their patients identified. This enhanced equitable access, as

the patients who realized better access were often those who already were most at risk of inequities.

These findings suggest that when providers initiate contact about possible health needs, this can result in better access to appropriate care, especially for people who are underserved. This is an important consideration when planning how primary care services are delivered into the future. One of the main objectives of establishing multidisciplinary teams in primary care was to enhance access to health prevention and promotion.¹¹ Providers conducting outreach is well supported by previous literature to result in better access to, and uptake of, preventative care for populations who are underserved.¹⁴⁶⁻¹⁵¹ This includes, but is not limited to, preventative care such as smoking cessation,¹⁴⁹ safety for older adults,¹⁴⁸ and the delivery of mental health services,^{150,151} all of which are common interventions delivered by the rehabilitation professionals in our study. Thus, this study's findings reinforce previous literature¹⁴⁶⁻¹⁵¹ that found that patients who are isolated or living with lower socioeconomic resources may realize better access and uptake of care if providers initiate contact. When considering future planning for rehabilitation professionals, there is potential that dedicating time to targeted outreach activities for certain populations will result in better access to care. This may realize better access to preventative care for underserved populations, and should be considered an essential part of rehabilitation professional practice in primary care.

Virtual care: Multiple and mixed impacts on equitable access

The shift to provide primary care using telephone or video was not isolated to our study. Emerging literature from the COVID-19 pandemic indicates that in developed countries, primary care sectors had a widespread shift to virtual care provision, and it often became the primary mode of service delivery.⁷⁶⁻⁷⁸ Here in Canada, Glazier et al.⁷² examined primary care physician billing data in Ontario, and noted in the first five months of the pandemic, in-person visits decreased by 79%, while virtual care (telephone or video) increased significantly, totaling 71% of all office visits. Our study's participants experienced this change, by shifting to provide care either partially or fully. When reflecting on their experience with virtual care provision, participants described how it both enhanced and reduced access, which often differed based on the patient's resources and abilities. Despite these variable impacts on access, most participants said they want to continue with some form of virtual care into the future. This suggests that

virtual care may be here to stay, and it is important that providers understand who may benefit, and who may be at risk of experiencing new barriers.

Virtual care improved equitable access for some. This supply-side change affected multiple dimensions of access, which subsequently resulted in a better ‘fit’ with the dimensions of abilities. For example, the shift to virtual care changed the way appointments were available, which, for some patient populations, then meant it was easier for them to reach care.

Improvements in access were noted across the PCAHC dimensions of a) improved availability and accommodation, thus creating a better fit with patients’ ability to reach, b) improved appropriateness, resulting in a better match with ability to engage, and c) a change in appointment mechanisms, thus a change in availability and accommodation resulting in a better fit with patients’ ability to seek. Each dimension that improved impacted different patient populations; it was not the case that the shift to virtual improved access for all patients requiring rehabilitation professional care. That being said, there were certainly improvements noted for patient populations, who pre-pandemic, may have experienced access inequities. These improvements in equitable access were demonstrated in the following three ways:

First, participants identified that shifting to virtual care improved access for people with transportation and mobility challenges. Even prior to the COVID-19 pandemic, virtual care is well recognized for its potential to mitigate these challenges, by reducing the burden and costs of a commute, and eliminating physical barriers to attendance.^{152–154} In the interview data, participants perceived that the improved availability and accommodation positively impacted patient populations who experience more challenges when attending a physical location; that is, it better matched many patients’ ability to reach. Participants identified those living under lower socioeconomic conditions and those with physical mobility limitations had ease of access when shifting to virtual care. This was one of the reasons participants stated they plan to continue with virtual care into the future. When considering these findings through the lens of equitable access, continuing to offer virtual care may be a step towards enhancing equitable access for these patient groups.

Second, participants in our study found that they were able to provide timelier and more frequent follow-ups, thanks to the ease of access to virtual visits. Pre-pandemic, the lack of virtual options and other time demands on clinicians and patients appears to have limited the provision of this type of care. Therapists reported that these timelier and more frequent follow-ups, facilitated through virtual platforms, benefited patients who needed clinician support to self-manage health conditions or health behavior changes. Self-management support is “the systematic provision of education and supportive interventions, by health care staff (and others), to increase patients’ skills and confidence in managing their health problems, including regular assessment of progress and problems, goal setting, and problem-solving support.”^{155p.57} Participants perceived that the ease of virtual, the timeliness and increased frequency of follow-ups resulted in patients better able to engage in care, which they ultimately perceived led to better quality of care and better patient outcomes. This was repeatedly identified by the respiratory therapists engaging their patients in smoking cessation, and also mentioned by participants who worked with patients with chronic pain. Participants observed that patients better adhered to treatment plans when they had frequent follow-ups and professional support when problem solving. These changes in ability to engage in care were not exclusive to one population with health inequities, but may broadly apply to any patients who might benefit from clinician support of self-management of their health conditions or health behavior change.

This is an important consideration for the future of primary care rehabilitation practice. The integration of rehabilitation professionals into primary care was partly to enhance access to health prevention and to support patients to self-manage their conditions.^{60, 63,156,157} In our study, the frequency of interactions increased by leveraging virtual means, resulting in better access. This likely provided an opportunity for the rehabilitation professionals to foster self-management skills, by building patients’ confidence in their progress, progressive goal setting, and supporting patients as they problem solved. Proactive, planned, and sustained follow-ups are recommended in chronic disease management,¹⁵⁸ and the use of virtual platforms, including telephone or video support for self management, has been proven to be effective way to provide care.^{159–161} Our study’s findings build on this, suggesting that virtual means are an effective way to provide self-management support, and thus, have potential to improve quality of care and patient outcomes. Further exploration is needed to understand which patients would benefit most from virtual self-

management support. This practice change occurred as a result of the COVID-19 pandemic, and was reported by participants as something they wanted to keep in the future. The benefits of this practice change suggest possible areas for future research.

Third, several therapists interviewed perceived that virtual care improved access to care for individuals who commonly experience stigma or anxiety with in-person care. They provided this insight without being explicitly asked to talk about stigmatized groups. Participants gave examples of patients who were living with mental health challenges, patients who lived with obesity, and patients who identified as transgender having better attendance when the appointments were scheduled virtually.

These three patient populations are among those historically underserved, in part due to the stigma that can be associated with seeking care. Corrigan's research establishes that mental health stigma can be a barrier to accessing care.^{162,163} Mental health stigma at both a personal level and a structural level can present barriers to initiating and adhering to a treatment programs; when people seek mental health resources in a public setting, there is risk of losing their confidentiality, and a risk of being labeled and stigmatized.¹⁶² Stigma is also a known barrier for individuals who are living with obesity or who identify as transgender from seeking care.¹⁶⁴⁻¹⁶⁶ For people who are stigmatized, the experience or anticipation of stigma creates barriers to accessing healthcare.¹⁶⁷ When attending an in-person appointment, a person who has experienced stigma may be concerned about the lack of inclusive spaces or possible exposure to discrimination in public areas (such as the waiting room of a primary care clinic). Any of these situations, or others, can lead to increased anxiety and distress in healthcare settings, resulting in avoidance of healthcare.^{164,165,167}

Using virtual means to conduct healthcare is one possible solution to increase equitable access to care for populations who experience stigma. The Public Health Agency of Canada identifies stigma as a public health issue, and recommends the implementation of interventions that support individuals who have experienced stigma.¹⁶⁷ Providing an option of virtual care may be one small intervention that supports stigmatized people to access healthcare. Care provided virtually reduces the risk of mistreatment or stereotype-reinforcement by clinicians, and may reduce other

barriers for those who have experienced stigma.^{164,168} In this thesis study, participants reflected that some patients appeared more comfortable using virtual means, and by report, some patients had commented that they would not have sought care if virtual was not available. These findings align with other literature supporting the use of virtual healthcare provision to enhance access for populations who experience stigma,^{164,168-170} and is important when considering continuing to offer virtual primary and/or rehabilitation care into the future.

Unfortunately, the findings of our study also suggest the pandemic-related practice changes resulted in new 'mis-fits' between dimensions. Participants noted the shift to virtual care resulted in certain populations experiencing more access barriers. The PCAHC dimensions that were new mis-fits included a) reduced availability and accommodation, creating a mis-fit with ability to reach, b) reduced appropriateness, which created a mis-fit with patients' abilities to engage, and finally c) reduced approachability which misaligned with ability to perceive. Similar to how the shift to virtual impacted different patient groups positively, this misalignment between the supply and demand dimensions depended on the resources and abilities of the patient populations.

First, participants noted that for many patient populations, shifting virtual care reduced the availability and accommodation, and in some cases, completely eliminated their ability to reach primary care rehabilitation services. When using telephone to conduct appointments, participants identified difficulties for patients with hearing loss or cognitive impairments, young adults who did not have access to private spaces or private phones, and adults who were unstably housed and did not have phones. Challenges with reaching care were also apparent with video appointments, affecting patients who did not have stable internet (sometimes identified as lower socioeconomic status or rural residents), patients whose first language was not English, and individuals who did not use technology (often perceived to be older adults). When video or telephone was the only option of care, some patients experienced a complete inability to reach, and thus benefit from, the care needed.

Second, some participants identified further access challenges only once they connected virtually with patients. Although certain patients could connect virtually (reflecting one dimension of abilities, the ability to reach), participants noted that for some patients, the virtual platforms were not appropriate platforms to engage, utilize, and benefit from the care. Participants reported this

finding with older adults, regardless of a diagnosis of hearing or cognitive impairments, and for people who spoke English as a second language. I attribute these findings, at least in part, to a loss of non-verbal communication.^{171,172} When interactions occur in-person, there are a series of non-verbal communications that occur, such as touch, gestures, pointing to an area of pain, or facial expressions that demonstrate understanding or confusion. Non-verbal communication can direct healthcare providers and patients as they continue through the appointments, and can affect patient engagement with care.¹⁷¹⁻¹⁷³ There is potential that when shifting to virtual, subtle aspects of non-verbal communication are lost, leading to patients who have difficulty understanding and engaging in the care plan. The PCAHC framework⁷ (figure 1) was exceptionally helpful at highlighting this finding, as it helped identify challenges with those who were able to reach healthcare — one phase in the access-to-care continuum — but who then encountered access barriers when utilizing the healthcare, which is the next phase further along the access-to-care continuum.

Both of these findings highlight access dimension ‘mis-fits’, and are consistent with emerging literature from the health system’s shift to virtual care during the COVID-19 pandemic. Many studies have identified the emergence of access inequities in primary care as a result of the supply-side shift to virtual visits during the COVID-19 pandemic.¹⁷⁴⁻¹⁷⁷ These inequities in access have been called the ‘digital divide’, where certain patient populations have either limited digital access or limited digital literacy.^{174,178} This digital divide often occurs disproportionately in populations who are already socioeconomically or medically disadvantaged.^{177,178} Although the digital divide can be more apparent when using video means, it also presents with the use of telephone to conduct appointments.^{174,178} Eberly et al.¹⁷⁶ identified that when shifting to either telephone or video, there was lower uptake among older adults, patients whose primary language was not English, and people with lower household incomes. Kalicki et al.¹⁷⁵ studied older adults and the use of videoconferencing in the COVID-19 pandemic, and found that the main barriers to engaging in videoconferencing were cognitive or sensory decline, or the lack of support (caregiver or other) to facilitate technology use. Chang et al.’s survey study¹⁷⁴ on use of telehealth in primary care identified many patient-related access barriers to virtual care provision, which were most apparent in primary care clinics whose patient populations are the underserved. These studies support the findings of my thesis; in many cases, the patients with the least uptake of virtual care are often those who already experience access inequities.

Finally, participants found that virtual care resulted in patients less able to identify that the health service exists and could benefit them, thus creating a mis-fit between the dimensions of approachability and ability to perceive. These situations occurred when the majority of primary care services were provided virtually. One example was the group therapy classes. Once the shift to virtual care happened, these groups shifted online. At the same time, other primary care providers were conducting care via telephone, and there were fewer patients attending the clinic in-person. Participants identified problems with group therapy registration; with fewer in-person interactions, there were limited ways they could advertise their groups. This resulted in patients and providers unable to perceive that the group therapy programs existed, and ultimately led to some groups being cancelled for non-attendance. One participant reported they had overcome this problem by advertising in an email-blast to clinic patients. Although this solution does increase the approachability, when considering the solution from a lens of equitable access, it did not increase the approachability for patients who experience the ‘digital divide’.

In summary, virtual care was the most significant practice change that impacted equitable access. When asked about practice changes they wanted to keep for the future, most participants identified they wanted to continue some form of virtual care, due to its access benefits. Virtual care has obvious advantages, including reducing access barriers and supporting self-management,¹¹ all which work towards the original rationale¹⁰ for funding interprofessional teams in primary care. However, as this study has shown, these advantages did not benefit all patients, as the data identified patient groups who pre-pandemic had access to care, but now, do not. The findings from this study are consistent with emerging literature that argue when aiming for equitable access, virtual care should be considered a “double-edged sword”.^{174p.354} Moving into the future, it is important health systems ensure that all patients have appropriate options to access care, with research driving these decisions. Future research could point us to which patients are most appropriate (or not), and what support(s) rehabilitation professionals need to deliver high quality virtual care. As we move forward into an endemic future, where we ‘live with’ COVID-19, yet still strive to achieve better equity of access to primary care, it is important to ensure virtual care is leveraged to enhance access, without inadvertently creating new barriers.

Strengths and Limitations

This study had some particular strengths. The first was that, to my knowledge, this is the first study that explores equitable access impacts to primary care rehabilitation during the COVID-19 pandemic. This exploration of access impacts from a lens of equitable access is important, considering the likelihood that these practice changes will continue into the future.

The second strength is the PCAHC framework. This framework was exceptionally helpful to draw attention to equitable access impacts, and an evaluation of access along a care continuum. The PCAHC framework has been used in hundreds of other studies considering access. Recently, Cu and colleagues⁸⁹ completed a scoping review of empirical studies that applied the PCAHC framework. They summarized authors' reasons to justify the use of the framework, and found that, across studies, authors identified similar strengths. The exploration of access with increased emphasis from the demand-side, and the framework's portrayal of access as a journey of reaching and obtaining health were identified as common reasons authors chose the PCAHC framework for their study's conceptualization of access.⁸⁹ I found that certain access impacts were particularly highlighted as a result of this framework, which I may have missed with other access frameworks. For example, a specific finding that was guided by the framework indicated that once older adults reached care virtually, they had difficulty engaging in the care that was offered. The analysis of patient-centered access along a care continuum is specific the PCAHC framework, and a particular strength in this research project.

The third strength of this research project are the steps taken to enhance the trustworthiness of my research. I worked towards credibility by incorporating a longitudinal reflection prior to the interviews, researcher triangulation, and the inclusion of the interviewer's reflexive notes in my analysis of the interview data. In addition, throughout this project, my advisor has closely engaged with analysis methods design, as well as drafts of findings. During the latter, she asked questions of my interpretation from her own knowledge of the data as principal investigator in the larger study. Her involvement strengthens credibility of my research, by adding an element of analyst triangulation. Transferability, another aspect of trustworthiness, was enhanced by my writing. I included a detailed description of participants, the context and setting, and the practice changes they experienced. These details help other clinicians imagine which, if any, of these findings may transfer to their own practice setting. In addition to writing, the data collected

across two provinces helps improve transferability across primary care settings. Dependability was strengthened by my coding tree and audit trail which reflects my analytic decisions and reflexive notes. I have saved copies of these, including backup versions of the coding tree, which shows the analytic decisions made to arrive at the final codes. All of these steps work towards my thesis' confirmability, where my findings can be traced back to the original supporting data.

The first limitation of this study was the partial perspective represented by our sample of participants – a problem all research involving people has to confront.¹⁰¹ This sample of participants represents one perspective, albeit an important one in terms of the research questions; we interviewed rehabilitation professionals and asked about equitable access to their care. Their answers are reflections of their experiences, their patient populations, and how aware they are of their patients' challenges when accessing services. Like all forms of situated knowledge,¹⁰¹ therapists cannot reflect on all patients with access barriers. Groups who may not be captured in our data are patients who were completely unable to access care due to the practice changes, but were not noticed explicitly by therapists. For example, there may be patients who team members thought might benefit from rehabilitation, but these patients declined a referral due to access challenges. Future research may benefit from retrospective chart reviews, speaking to patients who are unable to access care, or speaking to a wider group of primary care providers who refer patients to rehabilitation services. This might provide new perspectives on access challenges and possible future practice to those explored here.

The second limitation was the cross-sectional data set. The interviews completed for this thesis were conducted approximately nine months into the pandemic. At that point in time, many of the participants had shifted through numerous roles, and some of the practice changes were relatively new. This timing only captured the access impacts that participants recalled at the time of the interviews, though this recall was enhanced by the request that participants review their diaries prior to the interview. Given how new the practice changes were at the time, this might have limited the participants' ability to detect access impacts. Now that the practice changes have been around for another year and a half, it is possible if we were to conduct the same interview, we may learn more, or gain more nuanced perspectives. As well, in the larger, longitudinal dataset, other groups may have been mentioned. Considering this, the original study involves three time points, which captures the changes over one year. The larger study team will

explore the access impacts related to the practice changes within the year time frame of the full dataset.

The third and final limitation is the framework. There was data relating to access that I was unable, or found it difficult to categorize within the framework. This is consistent with other studies;^{49,89} a recent scoping review on the PCAHC framework's use found that difficulty with categorization is the most common challenge identified by authors who apply it empirically.⁸⁹ I certainly experienced challenges with categorization. For example, in the virtual care data, when trying to determine the supply side change that improved alignment with the ability to seek for those from stigmatized groups, it was difficult to categorize which supply side dimension was changed that resulted in a better fit. Ultimately, I determined that the change in appointment mechanism (thus a change in availability and accommodation) was what enabled a better fit with ability to seek, however I recognize that other researchers might make different choices. In addition to difficulty with categorization, I experienced the inability to categorize some data on access, specifically where the participants spoke to changes in patient's healthcare needs. This data suggested increased need from the demand-side of healthcare, however, I was unable to categorize this within the dimensions of the framework because the framework does not include space to categorize changes in population or community healthcare needs. If changes in community health needs are not integrated into health system improvements over time, this could potentially result in unmet health needs. The entry point of the framework is at 'health care needs', and the dimensions begin at the interaction between a health organization and a health user, which for my study, meant I was unable to categorize these changing health needs within this access framework. As population needs change, such as they have in response to the crisis of the pandemic, primary care will benefit from more information about those changes in community health, to enable future adaptation in the name of equitable access.

After working with the PCAHC framework for this research study, I am recommending three changes, or clarifications to the framework which may help future evaluations of access. My first recommendation is that the definitions within each dimension should be expanded upon. If there is more information written within each definition, elaborating on what is included or excluded within each dimension, this might help resolve some of the challenges with categorization. My second recommendation is a change to the dimension of appropriateness. This critique was also

noted in Cu's review of the framework,⁸⁹ which discussed the challenges with the broadness of the appropriateness dimension. I too found this dimension to be very broad, as it encompasses any interaction, communication, or reflection of quality once the patient is in the healthcare appointment. Healthcare quality itself can be a very broad concept,¹⁷⁹ making the dimension of appropriateness extremely broad. A potential change to this dimension is to create a separate dimension that reflects the specifics of healthcare quality, or add clarity in the definition narrowing to the specific concepts within healthcare quality that relate to access to care. And finally, my third recommended change to the framework is to consider an addition that reflects changes in demand, or unmet needs. This could be an additional phase of patient-centered access at the beginning of the framework, with an associated dimension of accessibility and patient's abilities and resources, or it could be a model that identifies unmet needs that complements, or precedes the use of this framework. As I had noted above, there was no space within the framework to categorize any data that pertained to changes in demand, or unmet needs. When considering access from an equity perspective, there is likely some benefit to being able to categorize unmet health needs within an access to care framework, or have a model that precedes this framework. I acknowledge that these are only suggestions based on my experiences, and others may have different recommendations, however, these are possible considerations to inform future iterations of the PCAHC framework.

6.0 Conclusion

The purpose of the thesis was to explore access impacts that occurred as a result of the COVID-19 pandemic, and examine these under a lens of equitable access. I conducted this research as opportunity to learn how the COVID-19-induced practice changes impacted patient access, and to better understand how these changes either worked towards, or hindered Canada's primary care commitments of improving equity of access to appropriate care.¹¹ Access to healthcare is an important determinant of health, and is a key part of health equity.⁵ The findings from this interview-based research project indicate there were practice changes that enhanced equitable access, yet also suggest that new access barriers were created, which often occurred when the organizational change(s) did not align with patients' abilities and resources. Moving into the future, I hope that what was learned from this study will help inform clinical practice, and present new avenues to pursue for future research.

A key finding from this study was that virtual care can enhance equitable access, and based on this and other studies, should be continued into the future. Our study suggested it enhanced access in many ways, including but not limited to, enabling providers to follow-up more frequently, reducing transportation barriers, and helped create spaces where patients were less at risk of stigmatization. Primary care's shift to virtual care improved the match of services with patients' abilities, resulting in certain patients more able to reach and engage in care. This change enabled an ease of access that ultimately aims to improve their overall health.

Although virtual care can improve equitable access, it is not a stand-alone solution. If virtual care is to be more widely available in the future, health systems and clinicians need to proactively ensure that patients are not being left behind. When offering virtual care, organizations and providers need to consider the resources and abilities of their patient populations. People without easy access to technology, or who require extra communication support are some examples of individuals who may experience barriers to virtual care.

Future research could help us understand actions organizations can take to ensure that virtual rehabilitation care does not leave patients behind. Exploring which patients are most appropriate for virtual rehabilitation in a primary care setting, or developing a simple screening tool, framework, or checklist for primary care providers to identify who is best suited for virtual rehabilitation care is needed. Surprisingly, given the recent and widespread use of virtual care,

there are few established, published frameworks that can answer these questions, even in the broader primary care sector.¹⁸⁰ This is a gap in current knowledge. That said, since the start of the pandemic, virtual rehabilitation toolkits have been developed, including ones for virtual stroke care¹⁸¹ and neurological rehabilitation¹⁸² that could provide a useful starting point. In addition to these toolkits, there are suggested measurement frameworks for the larger world of ‘generalized telehealth’,¹⁸³ which include timeliness of care, added value, and care coordination, all of which are components of access. These toolkits and measurement frameworks could provide a useful starting point to develop future research informing us on the best and most equitable ways to implement virtual rehabilitation in a primary care setting.

Beyond virtual care, there are other, simple solutions that can enhance access, established in the literature, and reinforced here. This includes outreach and wellness checks, more frequent follow-ups, and better interprofessional team collaboration. In my study, these were all practice changes which therapists perceived improved access to care. Specifically outreach, wellness checks, and frequent follow-up showed potential to enhanced access from an equity perspective, while better team collaboration enhanced access for all patients who may benefit from rehabilitation professional care.

Outreach, wellness checks and telephone follow-ups enhanced access to preventative care, and better self-management support and education. This is similar to established recommendations for chronic disease management, which recommends health teams should be proactive in initiating contact, and that systems should enable planned and sustained follow-ups.¹⁵⁸ What is not clear from this study, nor the related research, is how rehabilitation providers should best operationalize these recommendations, and for which patients. Outreach, wellness checks, and frequent follow-ups may not be possible for all patients; they may take more time and effort on the part of clinicians, displacing other care activities. However, considering this study’s findings suggest that dedicating time to these activities improves access to healthcare and patient engagement, this presents an opportunity for future research, to better understand how this applies to rehabilitation practice, and patient outcomes. It may be beneficial to explore who will benefit most from these additional resources.

The final key finding from this research project is the value of interprofessional team collaboration as a method to enhance patient’s access to care. This is established in previous

literature,^{137–139} and was reiterated by our participants' experiences. Moving forwards, as comprehensive team-based primary care continues to expand across Canada, primary care organizations need to prioritize and facilitate interprofessional collaboration, due to its benefits for patients and access to care. Pre-pandemic, it is possible that interprofessional collaboration was not consistently a priority given the usual demands of patient care on primary care providers. However, it appears that for some, the pandemic inadvertently facilitated opportunities for interprofessional collaboration. In our study, the improved interprofessional collaboration was perceived to positively impact patient access. These findings may be exceptionally important in the context of rehabilitation professionals working in primary care, as they are relatively new members to the interprofessional team. Other providers may not be fully aware of their roles or scopes of practice, nor the extent of how rehabilitation professionals can help their patients. Practitioners working in interprofessional settings, including primary care, should dedicate time to interprofessional collaboration, and primary care organizations should facilitate these opportunities. This has potential to improve patient access to appropriate, necessary care, supporting primary care's commitments to equity of access to comprehensive care.

In conclusion, this study explored equitable access to rehabilitation professional care in the COVID-19 pandemic. This study highlighted promising new strategies to improve access to care, but also noted that the changes which enhanced equitable access were not a 'one size fits all' solution. What was learnt from this study will hopefully inform future clinical practice or set the stage for future research, all while working towards enhancing equitable access to rehabilitation in primary care.

7.0 References

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8.0 Appendices

Appendix 1: Semi-structured interview guide

Note that questions in red are the questions I developed to address my research objectives.

Semi-structured interview guide

Note: Consistent with semi-structured interviews, the interviewer should follow the flow of ideas the participant raises, rather than strictly following the interview guide. The follow-up questions that are under the main questions are prompts – this means that they are points of discussion that you can probe them on or things that we would like to have information about. Most likely, the individual will not need to be asked every one of those questions.

Starting the interview:

1. Turn on audio recorder
2. Introduce yourself (or yourselves)
3. Review consent verbally - Their former consent form included consent for the interview

Key details: As per the consent form they signed earlier this year, their information they share will be kept confidential. Identifying details, such as a clinic name, will be substituted with non-identifying details to protect their confidentiality. We will continue to use their chosen pseudonym in any presentation of the research.

During the interview, they can refuse to answer any particular question, and we'll move on. They also can opt to end the interview at any time.

Demographics

1. How many years have you practiced as an OT/PT/RT?
2. How long have you worked in this primary care setting?
3. Is this your first job in primary care?
 - a. (If yes, move to MICRO questions)
 - b. (If no, ask these:)
 - i. How many primary care clinics have you worked in?
 - ii. How long in total have you worked in primary care?

Micro (personal questions)

4. At the time of your last diaries in (date), you were (SUMMARIZE).
 - a. Please catch me up on what's happened since
5. How similar is your current work with your pre-COVID responsibilities?
 - a. What does your workday look like now, compared with before pandemic?
 - b. [prompt, if needed: Please elaborate on how your work activities and responsibilities have changed.]
6. Imagine you had full freedom to decide what you do in your workday, during this pandemic. What would you be doing?
7. **Did you see a difference in patient population now, compared to before the pandemic?**

- a. **Were patients able to access your service?**
 - b. **How do the changes in service delivery impact your patients?**
 - c. **Do you think it had an impact on quality of care? If so how?**
- 8. Do you think there are some patients that were unable to access your service?**
- a. **If yes, who was unable?**
 - b. **Why were they unable?**
 - c. **What strategies did you use to try to reach them?**
 - d. **Is there anything more you wish you could do to reach them?**
- 9. Do you think the changes made it easier for some to access your service?**
- a. **If yes, who?**
 - b. **Why do you think this works for them?**
 - c. **What changes do you think you'll keep once the pandemic ends? Tell me why...**
10. Since the beginning of the pandemic, what have you done that has been the most helpful for your patients?
- a. For your team?

Meso (teams)

11. When you talk about your team, who do you consider as being part of this?
- a. [If not the full organization, ask about the structure of their larger organization]
12. Over the course of the pandemic, how has your work within your primary care team changed?
- a. How did your primary team work together in adapting to the pandemic?
 - b. Is your role better or less understood by your team than before?
 - c. How has communication between the primary care team been different over the course of the pandemic?
 - d. Do you feel you were adequately involved in team discussions and decisions relating to the pandemic? How?
 - e. How else has your relationship with your primary care team changed?

- f. Are there things that you wish could be done differently in how your team works together in the coming months?

13. If redeployed:

In your diary entries, you mentioned being redeployed. Tell me about that experience.

- a. How was the decision to redeploy you made?
 - i. “Where did communications regarding redeployment come from?”
- b. What were your main responsibilities when you were redeployed?
- c. How did you feel about being redeployed?
- d. How did redeployment impact your role within your primary care team?
- e. What happened with your caseload when you were redeployed?
- f. Did redeployment impact the dynamic of your primary care team? How?
- g. Did your primary care team keep in touch with you while you were redeployed?
How?
 - i. [If relevant] How about the larger organization you work within?
- h. Were there others within your team that were redeployed? Who?
- i. How was your transition back into your primary care team after redeployment?
- j. Do you expect to be redeployed in the future?

14. [If no mention of redeployment in diaries or interview up to now:] Some of the other study participants mentioned being redeployed in their diaries, but you did not. To date, have you been redeployed?

[if yes, go to redeployment question series. If no, continue below]

- a. Was there ever a possibility you could have been redeployed? Is there still?
 - a. If yes, who presented it to you as an option?
 - b. Who makes the decision?
- b. Were other members in your primary care team were redeployed? Who?
 - a. If yes, did their redeployment affect you? How?

14. Do you feel supported by your primary care organization during the pandemic?

- a. What are some things your organization (specify: MyHT, FHT, CHC) did to help you adapt to the changes brought about due to the pandemic?
 - b. What is lacking? Where else do you need more support?
 - c. What types of things could fill in those current gaps?
 - d. Were your ideas and feedback sought by the primary care clinic leadership? Ie, is communication going both ways?
15. What do you think are the big challenges/ healthcare needs in your community right now?

Macro [de-emphasize if low on time, other than the provincial question]

We've talked a lot about how you and your primary care team and organization has adapted, as well as how access has changed.

Before closing, we want to shift focus to the broader regional and provincial context.

16. Think about your profession's regulatory body.
- a. What things have they done that have been most helpful in response to the pandemic?
 - b. What supports do you think would help, moving forward, from your regulatory body?
 - a. Why do you think those are important, or needed?
 - b. What would these supports help you achieve?
17. Consider your regional health organization – might be a regional health authority, or a local health integration network.
- c. What things have they done that have been most helpful in response to the pandemic?
 - d. What supports do you think would help, moving forward, from your regional health organization?

- a. Why do you think those are important, or needed?
- b. What would these supports help you achieve?

18. Think about your provincial government.

- a. What things have they done that have been most helpful in response to the pandemic?
- b. What supports do you think would help, moving forward, from your provincial government?
 - i. Why do you think those are important, or needed?
 - ii. What would these supports help you achieve?

19. To your knowledge, did any of these three external bodies assist your primary care clinic to adapt to the new changes COVID-19 brought? If so, how?

20. In your opinion, how well has your profession been integrated into the health system response to COVID19?

CLOSING: Is there anything else you would like to add, that we haven't asked about?

Thank you

1. Thank them for their time and for sharing their experiences with us, at this hectic time.
2. Remind them there is a \$50 honorarium for their participation, which will be e-transferred to them within a week of this interview.

Explain next steps

- Analysis is ongoing
- we may invite you to an interview in March, one year past the start of the pandemic.
- We will host report-back sessions with all participants in 2021 as well

If you have any questions, please be in touch with the principal investigator, Patty Thille.

NOTE: Only turn off the audio recorder once the call ends (because it's very common that people say something insightful after the recorder is turned off). If that happens, take notes and add them to your interview reflection

General prompts to keep conversation going

Please tell me more!

Is there an example of that you can share?

Is there something else that _____(whatever the question was about – e.g. what supports from your organization would help)

Appendix 2: Revised semi-structured interview guide

Note that questions in **red** are the questions, with additional prompts, that I developed to address my research objectives.

Semi-structured interview guide

Note: Consistent with semi-structured interviews, the interviewer should follow the flow of ideas the participant raises, rather than strictly following the interview guide. The follow-up questions that are under the main questions are prompts – this means that they are points of discussion that you can probe them on or things that we would like to have information about. Most likely, the individual will not need to be asked every one of those questions.

Starting the interview:

1. Turn on audiorecorder
2. Introduce yourself (or yourselves)
3. Review consent verbally - Their former consent form included consent for the interview

Key details: As per the consent form they signed earlier this year, their information they share will be kept confidential. Identifying details, such as a clinic name, will be substituted with non-identifying details to protect their confidentiality. We will continue to use their chosen pseudonym in any presentation of the research.

During the interview, they can refuse to answer any particular question, and we'll move on. They also can opt to end the interview at any time.

Demographics

1. How many years have you practiced as an OT/PT/RT?
2. How long have you worked in this primary care setting?
3. Is this your first job in primary care?

- a. (If yes, move to MICRO questions)
- b. (If no, ask these:)
 - i. How many primary care clinics have you worked in?
 - ii. How long in total have you worked in primary care?

Micro (personal questions)

- 4. At the time of your last diaries in (date), you were (SUMMARIZE).
 - a. Please catch me up on what's happened since
- 5. How similar is your current work with your pre-COVID responsibilities?
 - a. What does your workday look like now, compared with before pandemic?
 - b. [prompt, if needed: Please elaborate on how your work activities and responsibilities have changed.]
- 6. Imagine you had full freedom to decide what you do in your workday, during this pandemic. What would you be doing?
- 7. Did you see a difference in the patient population that you see now, compared to before the pandemic? (Prompts could include: Are older patients able to access your services still? Patients with language barriers? Populations without stable housing?)**
 - a. If yes – what was the difference (this question doesn't have to be asked if answered)**
 - b. Does the new ways patients access your services (eg, video, phone, email) affect which patients are able to reach you? (again, prompts: older patients, lower SES patients, can a homeless population still access you)?**
 - c. How do the changes in service delivery impact your patients?**
 - d. Do you think it had an impact on quality of care? If so how?**
- 8. Do you think there are some patients that were unable to access your service?**
 - a. If yes, who was unable?**
 - b. Why were they unable?**
 - c. What strategies did you use to try to reach them?**
 - d. Is there anything more you wish you could do to reach them?**
- 9. Do you think the changes made it easier for some to access your service?**
 - a. If yes, who?**

- b. Why do you think this works for them?**
- c. What changes do you think you'll keep once the pandemic ends? Tell me why...**

10. Since the beginning of the pandemic, what have you done that has been the most helpful for your patients?
- a. For your team?

Meso (teams)

11. When you talk about your team, who do you consider as being part of this?
- a. [If not the full organization, ask about the structure of their larger organization]
12. Over the course of the pandemic, how has your work within your primary care team changed?
- a. How do you communicate with the primary care team over the course of the pandemic?
 - i. Do you meet often?
 - ii. Do you feel communication is better or worse now? Explain.
 - b. Did you notice a change in the relationship you have with your coworkers? If so how?
 - i. Do you feel adequately involved in your team? (this does not need to be asked if participant already mentioned it).
 - c. Do you think your role is better or less understood by your team than before?
13. Do you feel supported by your primary care team during the pandemic?
- i. If No: What is lacking? What would you need to feel more supported?
 - ii. If Yes: Can you give me example of what was done that makes you feel supported?
- b. Were your ideas and feedback sought by the primary care clinic leadership? Ie, is communication going both ways?
14. If redeployed:

In your diary entries, you mentioned being redeployed. Tell me about that experience.

- a. How was the decision to redeploy you made?
 - i. “Where did communications regarding redeployment come from?”
 - ii. Where there other members of your team that got redeployed?
 - iii. How did you feel about being redeployed?
- b. What were your main responsibilities when you were redeployed?
- c. How did redeployment impact your role within your primary care team?
 - i. What happened with your caseload when you were redeployed?
 - ii. How was your transition back into your primary care team after redeployment?
- d. Did your primary care team keep in touch with you while you were redeployed?
How?

14. [If no mention of redeployment in diaries or interview up to now:] Some of the other study participants mentioned being redeployed in their diaries, but you did not, Correct?

[if yes – correct that they were NOT redeployed]

- c. Was there ever a possibility you could have been redeployed? Is there still?
 - a. Who makes the decision?
- d. Were other members in your primary care team were redeployed? Who?
 - a. Did their redeployment affect you? How?

15. What do you think are the big challenges in healthcare needs in your community right now?

Macro [de-emphasize if low on time, other than the provincial question]

We’ve talked a lot about how you and your primary care team and organization has adapted, as well as how access has changed.

Before closing, we want to shift focus to the broader regional and provincial context.

16. Think about your provincial government.

- a. What things have they done that have been most helpful in response to the pandemic?
- b. Do you think there is something that the provincial government could do to provide some support to you, or your primary care team, moving forward.
 - i. Why do you think those are important, or needed?
 - ii. What would these supports help you achieve?

17. Think about your profession's regulatory body and provincial organization.

- e. What things have they done that have been most helpful in response to the pandemic?
- f. What supports do you think would help, moving forward, from your regulatory body?
 - a. Why do you think those are important, or needed?
 - b. What would these supports help you achieve?

18. In your opinion, how well has your profession been integrated into the response to COVID19?

CLOSING: Is there anything else you would like to add, that we haven't asked about?

Thank you

1. Thank them for their time and for sharing their experiences with us, at this hectic time.
2. Remind them there is a \$50 honorarium for their participation, which will be e-transferred to them within a week of this interview.

Explain next steps

- Analysis is ongoing
- we may invite you to an interview in March, one year past the start of the pandemic.

- We will host report-back sessions with all participants in 2021 as well

If you have any questions, please be in touch with one of the principal investigators, Patty Thille.

NOTE: Only turn off the audiorecorder once the call ends (because it's very common that people say something insightful after the recorder is turned off). If that happens, take notes and add them to your interview reflection

General prompts to keep conversation going

Please tell me more!

Is there an example of that you can share?

Is there something else that _____ (whatever the question was about – e.g. what supports from your organization would help)

Appendix 3 Coding manuals

The following is the final coding manual for practice changes. The codes are in bold, and subcodes in italics. The definitions associated with each code are in plain font. The acronyms used are associated to the following: RP is rehabilitation professional(s), and PC is primary care.

Practice Change: Coded to all data that pertains to practice changes. Aggregated to subcodes of practice changes.	Virtual care: Where participants speak to shifting from in-person to providing care using virtual means.	<i>Video:</i> When RP switches from in-person care using videoconferencing.
		<i>Telephone:</i> When RP switches from in-person to care over the phone.
		<i>Other, or unclear which type of virtual care:</i> When participants refer to virtual care, but it is unclear if video or phone. Includes use of email or apps.
	Team Collaboration: Practice change that impacts how the team functions. E.g., moving from informal conversation to formal electronic communication, team meetings moved online, etc.	
	Loss of rehabilitation tasks in primary care practice: pandemic-related changes that resulted in a loss of usual work. E.g. loss of spirometry, loss of home visits, and loss of group programming.	
	New task as part of rehabilitation professional work: When RPs take on new tasks within their primary care rehab positions. This does not include task related to redeployment, nor tasks that they did previously, but have increased in frequency of referrals (e.g., smoking cessation).	<i>Outreach:</i> Categorized when participants express reaching out (e.g. cold-calling patients).
		<i>Expanded scope in primary care:</i> Categorized when participants take on new tasks, including work in new programs in PC (e.g. remote monitoring), or expand to provide care beyond their usual (e.g. Physios doing wellness checks on mental health, finances).
		<i>Managing new risks:</i> When participants do see people in person, they have to manage risks. E.g., Screen prior to, cleaning protocols, don PPE.
	Redeployment: When participants are put into roles related to the health system needs of the pandemic, which are mandatory, and take them away from their usual PC rehabilitation care. E.g., Working swabbing sites, moved to acute care sites.	<i>Full time redeployment:</i> Participants identify they stop PC practice and are redeployed elsewhere.
		<i>Partial redeployment:</i> When participants identify they are redeployed yet still working some days in their usual PC practice.
Future practice changes: Where participants speak to practice changes they intend to keep for the future		

The following is the final coding manual for access impacts. The codes are in bold, with subcodes in italics, and the definitions associated with each code are in plain font. The subcodes for access improved and access worsened were adapted for my thesis directly from Levesque et al.'s PCAHC framework.⁷

Access Impact: Any location where an impact to access is identified. Aggregated to all other access codes.	Access Improved: Where participants identify the practice changes resulted in better access.	<i>Increased approachability:</i> Where participants note that a practice change increases access via increased awareness of their services, or other health services. E.g., Putting program info in a newsletter. This encompasses therapists doing outreach, wellness checks, or any practice change (e.g., team mtgs) that enhance awareness.
		<i>Increased ability to perceive:</i> Where a practice change results in a better fit with patients' abilities to perceive that health services exist, and can address patients' health needs. Includes factors such as health literacy, health beliefs, trust and expectations.
		<i>Increased acceptability:</i> Where a practice change results access to care that is more acceptable to patients. This includes practice changes that affect professional values, norms, culture, gender. Cultural and social factors determining the possibility to seek care, and judged appropriateness of the persons seeking care.
		<i>Increased ability to seek:</i> Where a practice change results in better alignment with patients' abilities to seek care. This includes personal autonomy and capacity to chose to seek care, culture, gender, or social values.
		<i>Increased availability and accommodation:</i> Where participants note a practice change that enhances access to either the physical (or virtual) existence of health resources, and capacity to provide the care in a timely way.
		<i>Increased ability to reach:</i> When a practice change results in a better fit for patients' abilities to reach care. This includes practice changes that affect transport, physical mobility, and social support.
		<i>Increased appropriateness:</i> When participants identify an organizational change that enhances appropriateness of type of care for the patient. This includes practice changes that enhance coordination and continuity, technical and interpersonal quality, adequacy, integration and coordination of services.
		<i>Increased ability to engage:</i> Where participants note the practice change better aligns with patients' abilities to engage. This relates to the participation and involvement in treatment. This involves the capacity to communicate and understand, self management skills, and ability to interact with the nature of services offered. E.g., frequent follow ups lead to better treatment adherence.

Access worsened: Where participants identify that access has worsened.	<i>Reduced approachability:</i> Where participants note that a practice change decreases awareness of their services, or other health services. E.g., Visible presence of providers affects referrals; when they work from home, patients aren't referred.
	<i>Reduced ability to perceive:</i> Where participants spoke to practice changes that made their services less accessible, by creating a mis-alignment with patients' abilities to perceive that health services exist and can address their health needs. Includes factors such as health literacy, health beliefs, trust and expectations.
	<i>Reduced acceptability:</i> Where a practice change results access to care that is less acceptable to provide to certain patients. This includes practice changes that affect cultural and social factors determining the possibility to seek care, and judged appropriateness of the persons seeking care.
	<i>Reduced ability to seek:</i> Where a practice change results in worse alignment with patients' abilities to seek care. This includes changes that negatively impact personal autonomy and capacity to chose to seek care, culture, gender, or social values.
	<i>Reduced availability and accommodation:</i> Where participants note a practice change that worsens access to either the physical (or virtual) existence of health resources, or the capacity to provide the care in a timely way.
	<i>Reduced ability to reach:</i> When a practice change results in worse fit for patients' abilities to reach care. This includes practice changes that affect transport, physical mobility, and social support. This encompasses technology challenges; e.g., Unable to use virtual platforms due to no internet.
	<i>Reduced appropriateness:</i> When participants identify an organizational change that worsens the appropriateness of type of care for the patient. This includes practice changes that worsen coordination and continuity, technical and interpersonal quality, adequacy, integration and coordination of services.
	<i>Reduced ability to engage:</i> Where participants note the practice change creates a mis-alignment with patients' abilities to engage. This relates to the participation and involvement in treatment. This involves the capacity to communicate and understand, practice changes that negatively impact self management skills, and ability to interact with the nature of services offered. E.g., phone appointments are difficult for older adults to engage in.
	No impact on access: Where there was a practice change, but the participant identified that there was no change in who accessed their services. This includes only data where participant was either asked, or identified no access impact. Does not include data that we can infer no access impacts.
Access impacts not related to a practice change: Where access impacts are noted by participants, but they are not directly linked to a practice change. These access impacts need to be related to the pandemic. These were cross-coded with any applicable access dimension subcodes above, or, the additional subcode of: <i>Changing patient needs due to pandemic:</i> Changes in patient population health needs or reasons for referral due to the pandemic. E.g., more patients referred for mental health needs.	

