

The Impact of COVID-19 on the Roles and Responsibilities of Respiratory Therapists in Primary  
Care in Ontario, Canada

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## Abstract

**Background/Introduction:** The COVID-19 pandemic impacted health care providers as their roles changed in providing care for patients with chronic respiratory disease. The impact of the pandemic was significant in Ontario, Canada, where the already strained health care system responded by reducing in-person primary care visits and replacing them with virtual visits. Some respiratory therapists working in primary care pivoted to the provision of virtual care, while others were redeployed to acute care to manage the patient surge. Few articles explore the roles and responsibilities of respiratory therapists working in primary care.

**Purpose:** The purpose of this qualitative case study is to describe the impact of the COVID-19 pandemic on the roles and responsibilities of respiratory therapists working in primary care in Ontario, Canada. The research objectives are to define the roles and responsibilities of respiratory therapists working in primary care, explore the extent of role ambiguity, and describe how COVID-19 has impacted their practice.

**Methods:** Using case study methodology, virtual semi-structured interviews were conducted with four respiratory therapists working in primary care in Ontario. Data was analyzed using Stake's method of case study analysis.

**Results:** Respiratory therapists are a well-respected member of the interprofessional health care team, they appreciate the autonomy of their roles in primary care, and these roles were adapted during the pandemic to continue providing care to patients with chronic respiratory disease. The challenges posed by the pandemic resulted in some primary care clinics moving to virtual care, while other clinics suspended services at the peak of the pandemic. Public fear of contracting the COVID-19 virus prompted some patients to discontinue care with their primary care team, and respiratory therapists felt devalued and disconnected from their patients.

**Discussion:** The COVID-19 pandemic highlighted the strengths and vulnerabilities within the primary care setting and identified that there is a need for more respiratory therapists working in primary care to utilize their skill set in managing patients with chronic respiratory disease. Pivoting the role of the respiratory therapists to provide virtual care provides insight into how to prepare for future pandemics and minimize the disruption of care.

**Conclusion:** Future research into the roles and responsibilities of respiratory therapists working in primary care could demonstrate the need for these health care professionals in reducing the burden of chronic respiratory disease on the health care system and increase patient outcomes.

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## Dedication

I would like to dedicate this thesis to my family and friends who offered support throughout this process.

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# Chapter 1

## 1.1. Background

The World Health Organization (WHO) declared a worldwide pandemic and global public health emergency on March 11, 2020, due to COVID-19, a highly contagious severe respiratory illness caused by the novel coronavirus SARS-CoV-2. This prompted a worldwide shutdown of workplaces, schools, and non-essential businesses, as the number of infections and deaths increased. The COVID-19 pandemic has impacted many aspects of society, including healthcare and the care of chronic medical conditions such as diabetes, hypertension, and COPD (Van den Bulck et al., 2022). It placed significant demands on the health care system, which caused routine primary care resources to be redirected towards acute care, a move which prompted changes in the roles and scope of practice of some health care professionals. (Matenge et al., 2021). Key strategies that were adopted during the pandemic to facilitate the provision of regular health care include the implementation of public health measures such as social distancing and personal protective equipment such as masks, limiting in-person care and adoption of telehealth for virtual health care, and enhancing surge capacity with the addition of personnel to acute care settings (Matenge et al., 2021). Disruptions to the delivery of care for chronic conditions during the pandemic included the prioritization of acute care services with redeployment of primary care providers, and there was a reduced capacity to reorganize chronic care services to maintain care (Matenge et al., 2021; Parkinson et al., 2022). As a result, chronic conditions were often dealt with inadequately, which could lead to increased risk of exacerbations and mortality due to untimely care (Fletcher et al., 2022). In some cases, patients had not seen their primary care physicians in weeks or months, and their chronic conditions became less well-controlled (Rose & Ellen, 2020). “COVID-19 has not been good for medical care delivery, for patients, or for health care workers” (Rose & Ellen, 2020). This applies to patients with chronic respiratory disease.

People with chronic respiratory disease are at increased risk of severe illness due to infection with COVID-19 and are especially vulnerable to the worsening of their pre-existing respiratory condition because of disruptions to their care (Parkinson et al., 2022). Chronic respiratory disease management guidelines such as the asthma management guidelines and the GOLD guidelines for the management of COPD have reinforced the importance of continuing treatment to maintain control (Fletcher et al., 2022). Primary care is the place where these conditions can be managed by implementing early intervention and prevention of disease and can save money in creating a healthier population (Doshi et al., 2021). Unfortunately, the pandemic has increased vulnerability of individuals with these conditions as approximately one-third of Canadians did not see a primary care practitioner during this time (Doshi et

al., 2021). The impact of the pandemic on patients with chronic disease such as COPD was significant in Ontario, where an already strained health care system responded by reducing the number of in-person primary care visits and replacing them with virtual care visits.

## 1.2. Impact of COVID-19 on Ontario's Health Care System

Ontario is Canada's most populous province, with a 2020 population of over 14.7 million people (Glazier et al., 2021). In Ontario, the pandemic stretched the services of a health care system that was already operating at maximum capacity with the problem of delivering hallway medicine (Ontario Hospital Association, 2020). In the early months of the pandemic, there were also significant shifts in how primary care was being delivered, with an 80% reduction in office visits and greater than fifty times more virtual visits (Glazier et al., 2021). The financial impact of the first wave of the pandemic (April and May 2020) was a deficit of \$500 million to hospitals, and this continued to grow with subsequent waves (Ontario Hospital Association, 2020). This deficit resulted in difficulties for Ontario hospitals to fulfill their financial obligations for service provision and retention of staff. The difficulties incurred in the attempt to recover from wave one increased as the pandemic continued and backlogs in care increased (Ontario Hospital Association, 2020). The Ontario Hospital Association (OHA) responded by stating that there was a need for system reform and planning to meet the needs of a growing and aging population within the province. The OHA put forth a list of recommendations for changes to help support the health care system as wave two of the pandemic began. These recommendations included increased funding for wave one of the pandemic and full reimbursement for the response, increased funding for wave two, and acceptance of the "new normal" that hospitals experienced in terms of increased care as a result of the pandemic (Ontario Hospital Association, 2020).

In addition to hospital services being affected, there was a shift in how primary care services were delivered in Ontario during the pandemic. From March – July 2020 there was a 28% reduction in primary care visits compared to the same period in the previous year (Glazier et al., 2021). This resulted in some practitioners moving to provide virtual care. Early in the pandemic, the Ontario Ministry of Health authorized billing for primary care providers to facilitate virtual care, which included telephone calls, text messages and video calls (Glazier et al., 2021). During the first five months of the pandemic, virtual care constituted 71% of visits with a primary care practitioner, with the majority of these patients being women (72%) and adults aged 65 – 74 years (73%) (Glazier et al., 2021). Patients were quick to adapt to receiving virtual care and there was no increase in emergency department visits by those patients whose primary care practitioners replaced in-person visits with virtual care (Chami et al., 2023). As the numbers of individuals requiring acute care increased due to infection with the COVID-19 virus, primary care practitioners shifted their delivery of services to ensure that patients could still be "seen" in the

community to reduce the burden on emergency departments. One group of health care professionals that shifted their delivery of services in primary care was respiratory therapists.

### 1.3. Impact of COVID-19 on Respiratory Care and on Respiratory Therapists

During COVID-19, the roles and responsibilities of respiratory therapists, especially in the intensive care units, were well recognized. COVID-19 is primarily a respiratory disease, and respiratory therapists are involved in many aspects of the care of patients with the illness, from resuscitation and initiation of mechanical ventilation, to weaning and assessment for home oxygen therapy and rehabilitation (Ward et al., 2022). However, this recognition perpetuates the dominant idea that respiratory therapists are only trained to work in acute care, and they are not being utilized in chronic disease management.

It has been recognized in Canada that interprofessional primary care teams are crucial in supporting the complex health care needs of those with chronic disease (Donnelly et al., 2021). Respiratory therapists have a unique set of skills that allow them to provide care to patients with chronic cardiopulmonary disease who transition from acute care settings to community-based primary care. The COVID-19 pandemic has disrupted many aspects of health care and has pushed health care organizations to come together to create innovative ways of addressing acute and chronic illness, address health care practitioner shortages across settings and address the importance of public health infrastructure (Kollman et al., 2022). This “disruptive innovation” will allow respiratory therapists to prove their worth in primary care by showcasing their training and expertise in chronic cardiopulmonary disease (Kollman et al., 2022).

The pandemic caused some respiratory therapists to be redeployed from primary care to acute care settings such as hospitals to deal with the influx of patients, while others were redeployed at testing sites. Some respiratory therapists continued to provide primary care services but had to adapt to the new public health measures. Adaptation of respiratory therapists also included having to learn how to deliver care virtually and teach patients how to use these online platforms. This adaptation of roles involved a change in tasks performed by respiratory therapists which required altering their relationships with patients after they lost the role of performing their jobs face-to-face. (Brown et al., 2024). The result of the reorganization and adaptation of respiratory therapists was that there were fewer of them working in primary care, and a reduction in monitoring and management of patients with chronic respiratory conditions.

## 1.4. Thesis Organization

This thesis will describe how the study's purpose and objectives were achieved and is organized as follows: Chapter 2 will explain the process and results of the literature review. It also includes a discussion about professional roles and concludes with the research question and objectives. Chapter 3 describes the philosophical assumptions, the methodology of the project, and the methods that were used to collect and analyze the data. Chapter 4 presents the results of the study. Chapter 5 will discuss the results and relate them to the literature and will also present the strengths and limitations of the project. Chapter 6 provides a conclusion of the study and implications for future research and clinical practice.

Chapter 1 introduced the impact of COVID-19 on Ontario's health care system and respiratory therapy in both acute and primary care settings. The capacity of the Ontario health care system was tested when the pandemic started, and there was redeployment of health care professionals from primary care to acute care to address the influx of patients. This resulted in a reduction of primary care practitioners to manage patients with chronic diseases such as COPD.

In the next chapter, I will discuss the literature review that supports my discussion about allied health professions working in primary care, and the impact of primary care reform on the delivery of health care in Ontario.

## Chapter 2: Literature Review

### 2.1 Purpose and Method of Literature Review

The purpose of this literature review was to explore what exists about respiratory therapists working in primary care. Respiratory therapy still lacks behind other health professions in academia; therefore, there are very few articles that have respiratory therapy as their focus of interest. Due to the lack of information about respiratory therapy, the search included other allied health care professions that work in primary care settings to help provide the larger context for this research. A search was performed using Medline, Scopus, and Scholars Portal Journals, and search terms included respiratory therapists, physical/physiotherapists, occupational therapists, pharmacists, allied health, primary care, professional roles and responsibilities, chronic care model, and COVID-19. Grey literature was also examined to search for articles related to the professional roles and responsibilities of allied health care professionals working in primary care both before and during the COVID-19 pandemic. The literature review includes a description of the differences between primary health care and primary care, a discussion about the reform of primary care, followed by a discussion of the role of allied health professions, including respiratory therapists, in managing chronic lung disease in the primary care setting. Based on the review, what follows is a description of these concepts.

### 2.2 Primary Health Care vs Primary Care

#### 2.2.1 Primary Health Care

Primary health care and primary care are two terms that are often used interchangeably, and their definitions overlap, depending on the source. The two terms are quite different from each other, with primary health care encompassing the wider policy-based decision-making that occurs in the development and operationalization of health care services (World Health Organization, 2023). Primary health care is an inclusive and cost-effective approach to improving health, and it is critical in making health systems resilient to crisis situations like the COVID-19 pandemic (World Health Organization, 2022). It involves the initiatives that seek to improve access to providers, improve quality of care, increase patient and health care provider satisfaction, and provide cost-effective health care services that promote the continuity of care across the life spectrum (Thompson, 2020). Therefore, primary health care includes services that promote health, prevent disease, and provide coordinated, improved quality of care with better use of resources (Muldoon et al., 2006). It addresses the determinants of health through intersectoral collaboration and empowers individuals to participate in taking charge of their own health (World Health Organization, 2023). Primary health care goes beyond just the provision of health care and encompasses factors such as housing, environment and education in the attainment of health (Health

Canada, 2015). Teamwork and collaboration are hallmarks of primary health care, and decisions are decentralized to community-based organizations “to ensure that services are adapted to the needs and characteristics of the population served” (Muldoon et al., 2006, p. 410). Primary health care is the “central focus and main function of the health care system” (Muldoon et al., 2006, p. 410).

The five principles of primary health care are accessibility, health promotion/disease prevention, public participation, intersectoral collaboration, and technology (Canadian Nurses Association, 2015) and are described in the World Health Organization’s 1978 Declaration of Alma Ata which calls for urgent action by all governments and health organizations to “protect and promote the health of all the people of the world” (World Health Organization, 1978). According to the World Health Organization, the goal of primary health care is to “bring care as close as possible to the population that it serves” (p. 2), and it constitutes the first element of a continuing health care process (World Health Organization, 1978).

### 2.2.2 Primary Care

Primary care is encompassed in primary health care and is described as an individual's first contact with the health care system and is comprehensive, coordinated, and delivered across the lifespan of the individual (Bodenheimer et al., 2014; Donnelly et al., 2016). Primary care has also been defined by the Institute of Medicine as “the provision of integrated, accessible health care services by clinicians who are accountable for addressing a large majority of personal health care needs, developing a sustained partnership with patients, and practicing in the context of family and community” (Institute of Medicine et al., 2000, p. 1). Primary care provides person-focused care that is coordinated between caregivers across settings (Muldoon et al., 2006). It is coordinated in the sense that it can be delivered by different caregivers at different times to meet a patient’s specific needs at that time. According to the Institute of Medicine, primary care must also be “accessible and accountable” (Vanselow et al., 1995b, p. 1) and barriers such as location, geography of communities, culture and language must be addressed. In Canada, the reform of primary care was aimed at improving quality of life while reducing overall health care costs (Thompson, 2020).

## 2.3 Primary Care Reform

Primary care reform began after the release of the Romanow Report and the Health Council of Canada Report in the early 2000’s (Thompson, 2020). Each jurisdiction across Canada was responsible for how health care reform occurs, and several regions adopted Wagner’s Chronic Care Model (CCM) that was proposed in the 1990’s to improve the quality of management of chronic disease (Government of Canada, 2023). There are six elements within the CCM that aim to improve the outcomes of individuals living with chronic disease which encompass components within the community and the health care

system: 1) health care delivered by individual health care professionals as well as teams, 2) the use of evidence-based guidelines and patient preferences to make decisions regarding care, 3) patient goal setting and treatment tailored to the patient so that they can self-manage their disease, 4) the use of community resources to support patients, 5) improvement of patient safety and disclosure of errors, and 6) the use of information technology to improve the sharing of information (Reynolds et al., 2018; Slack et al., 2018).

In Ontario, new models of primary care were introduced in 1996, although primary care innovations that developed a multiprofessional care model date back to the 1970's (Peckham et al., 2018). Family Health Networks were established in 2001 and consisted primarily of physician teams and in 2005, Family Health Teams (FHTs) were established to create teams of interdisciplinary health care professionals "to improve access to primary care, improve quality and continuity of care, increase patient and provider satisfaction and increase the cost-effectiveness of primary care service" (Peckham et al., 2018, p. 22). FHT's promote health care professionals to work to their full scope of practice to support patients living with chronic conditions such as heart failure and COPD (Brooks et al., 2023). Since 2005 there are now 185 FHTs in Ontario serving 3.4 million patients in over 200 communities and consisting of physicians, nurse practitioners, nurses, dietitians, occupational therapists and other health care professionals (Ontario Ministry of Health, 2023; Peckham et al., 2018).

The key feature of primary care reform is a shift from care that is delivered primarily by physicians under a medical model of care to multidisciplinary teams of health care professionals, including respiratory therapists, providing care to patients in the community across the continuum of health using a wellness model of care (Thompson, 2020). As such, allied health professionals such as respiratory therapists can play a role in the care of patients with chronic diseases who require the services of practitioners who have disease-specific knowledge, and who are able to provide safe, timely, and appropriate care. As primary care grows beyond a physician-only care provider model to include nurse practitioners, pharmacists, dieticians, occupational therapists and physical therapists, there are new opportunities for other allied health professionals such as respiratory therapists.

Respiratory therapists work predominantly in hospitals in acute care settings. They also work in long term care, community, home care, and in primary care (Canadian Society of Respiratory Therapists, 2022). Their scope of practice, their specialized knowledge of the cardiorespiratory system, their direct implication during the diagnostic and management aspects of the acute phase of respiratory disease, and their intimate knowledge about pharmaceutical and non-pharmaceutical interventions makes them the ideal professional to manage respiratory disorders, including smoking cessation, in primary care (Slack et al., 2018). The Canadian Society of Respiratory Therapists' Position Statement on Respiratory Therapists

and Primary Care Teams supports the integration of respiratory therapists into such teams because respiratory therapists possess the skills and knowledge required to manage and educate patients with chronic respiratory disease (Canadian Society of Respiratory Therapists, 2023).

Interprofessional teams of primary care clinicians can address a wide range of health issues, disease and illness that occur over the course of a patient's life. Primary care providers must be able to address the physical, emotional, and spiritual aspects of health. Collaboration between primary care providers is key to managing chronic disease as it can involve multiple organ systems. Primary care providers must also keep the family in mind as they treat a patient, as health affects not only the individual, but the family as well. Finally, primary care practice requires that providers understand the community in which they work, know the causes of morbidity and mortality, and they must strive to strengthen the link between their services and the broader population-based health services (Vanselow et al., 1995a).

#### 2.4 Integration of Allied Health Care Professionals in Primary Care: The Importance of Roles and Responsibilities

As mentioned earlier, interprofessional team-based care can improve patient outcomes, reduce cost of care, and improve primary care capacity (Kiran, 2022). As care for patients with chronic diseases such as COPD has shifted from a hospital-based medical model of care to a holistic and wellness setting such as primary care, opportunities arise for more allied health professionals to work in this setting (Gillett et al., 2016). Professions such as social work, pharmacy, occupational therapy, dieticians, and others have been included in primary care teams for several years, although there is a lack of funding for some of these professions to expand their practice, including respiratory therapists (Donnelly et al., 2013). Hartford et al. (2021) states that COPD care is fragmented with a lack of funding and resources, and there are disconnected communication pathways between organizations and providers. Donnelly et al. (2013) identifies three factors that support the integration of OT into primary care, which could be extrapolated to include the integration of all allied health professionals into primary care, including respiratory therapists: 1) Understanding of the profession; 2) Culture of collaboration; and 3) Trust and understanding. I will be addressing each of these factors in the next few paragraphs.

It is important to understand the roles and responsibilities of the professions that comprise the interprofessional primary care team so that work can be assigned appropriately. There might be role overlap between two or more professions on the team, but this can be beneficial for patients, especially when it comes to continuity of care. Role clarification of the allied health profession leads to less conflict, promotes respect and integration of the profession into the team, and improves collaboration between members (Canadian Interprofessional Health Collaborative, 2010; Donnelly et al., 2013; Sibbald et al.,

2021). Respiratory therapists rely on physician referrals for most of their patient care. Having a physician champion helps to promote the allied health profession and promote the role of the profession to other physicians (Donnelly et al., 2013). An understanding of roles and responsibilities within the interprofessional care team allows for better integration of the members, improved communication, and conflict resolution (Canadian Interprofessional Health Collaborative, 2010). However, in addition to understanding the role definitions of members of the team, “role boundaries” (i.e. scopes of practice) also need to be understood by team members to prevent role conflicts (Giannitrapani et al., 2016).

A “role” is “a socially constructed unit of what is expected of a person in a particular position” (Ebbers & Wijnberg, 2017, p. 1345), and “responsibilities” refer to the tasks that are assigned to a specific role. Individuals are assigned or may assume a role or roles that are affiliated with a specific position of employment and within that role there are responsibilities for which the incumbent is accountable (Turner, 2001). Roles may be played differently by different individuals. Furthermore, an individual may act and feel differently depending on the situation or position that they are in (Turner, 2001). According to Turner (2001), there are five assumptions about roles that need to be taken into consideration when studying them: 1) People (actors) behave as if there were roles and make decisions on how the role is played; 2) Actors choose their actions by imagining the roles of others, and they shape their own roles accordingly; 3) Most social roles exist in pairs (e.g., Respiratory therapist and patient); 4) Role-taking presumes that an individual is familiar with the role of the person with whom they are interacting; 5) Roles are continuously being revised in relation to others’ actions and reactions in order to achieve a collaborative goal (Turner, 2001).

In an organization or setting like primary care, individuals generally have less discretion in the performance of their roles (Turner, 2001). Roles are formalized to make the individual’s work predictable and facilitate the organization’s work (Turner, 2001). Unfortunately, this can limit creativity of individuals which may impact patient care if respiratory therapists are not able to tailor treatment and disease management to a specific patient. However, we need to remember that roles are continuously being made and remade as individuals interact with others. This process of role redefinition leads to the development of informal roles that might deviate from the more formal ones (Turner, 2001). Therefore, informal roles will either take the form of role incumbents, where the informal role differs significantly from their formal ones, or as alter-roles, where “the formal roles are incomplete and vague with respect to details of their performance” (Turner, 2001, p. 243).

The hierarchical nature of organizations naturally leads to intra-role conflict (Turner, 2001). Limited time, equipment, and human resources mean that the performance of one task may undermine and limit the performance of another task. Furthermore, the enactment of roles can invoke anxiety or

frustration, which Turner (2001) refers to as “role strain”. It can result from performance or fear of performance from role overload or from intra- or inter-role conflict. Role strain stems from the stress of multiple roles that a person holds (Turner, 2001). Another example of role strain is role overload. This happens when there are demands for behaviour in one role that violate the values of another role (Turner, 2001). Even though teamwork can be the root of intra-role conflict, teamwork can also be what relieves an individual from work overload. Once roles and responsibilities are better defined or understood, interprofessional practice is advantageous for professionals, for patient care, and for the healthcare system. Indeed, for healthcare professionals, when interactions between members of the interprofessional team focus on the needs of the patient, hierarchies are overcome (de Brito et al., 2022).

Communication and trust are at the core of interprofessional collaboration (de Brito et al., 2022). The electronic medical record (EMR) is one tool that enables good communication between allied health care professionals and doctors, especially while using the messaging system (Donnelly et al., 2013). In addition to the EMR promoting communication, the co-location of interprofessional team members and the opportunity to interact face-to-face is important for the integration of allied health professions (Donnelly et al., 2013). Co-location provides the opportunity for both formal and informal ‘hallway consultations’ between team members which contributes to building trust (Donnelly et al., 2013). The creation of spaces within the work setting to enhance dialogue between professionals aids in routine communication and care planning (de Brito et al., 2022). When communication is enhanced, trust usually also follows since by knowing more about their respective role and responsibility, it eliminates power imbalance and fosters collaborative work.

Working within a culture of collaboration translates into better patient care. For patients, interprofessional collaboration has proven to decrease complications that impact hospitalization (E.g., admissions, length of stay and mortality). Therefore, at the organizational level, since patients are better managed and healthcare professionals are happier in their job, interprofessional collaboration reduces the overall cost of care (D'Amour & Oandasan, 2005). Consequently, using an interprofessional team-based approach to managing chronic respiratory disease should be beneficial.

## 2.5 The Role of Allied Health Professions in Managing Chronic Lung Disease

As of 2019, chronic obstructive pulmonary disease (COPD) is the third leading cause death in the world (World Health Organisation (WHO), 2022). COPD remains a significant health issue in Canada, and the Global Burden of Disease study estimated that the projection of global increase in COPD would rise from sixth place to third place from 1990-2020 (Leung et al., 2021). The estimated annual societal cost of COPD was \$4.52 billion in 2011 and is projected to be \$3.61 billion by 2035 (Najafzadeh et al., 2012). Chronic conditions have significant adverse consequences on health outcomes and function, but

adequate management can help mitigate their impact on quality of life and reduce the burden of disease (Feldman et al., 2012). Patients with COPD are one of the biggest patient groups that interact with respiratory therapists and require frequent visits to the emergency department and/or hospital admission (Kollef, 2017). Hospital readmissions increase the health care costs associated with managing COPD and expose these patients to increased risk of nosocomial infections. Approximately 20% of all patients with COPD readmit to the hospital within 30 days of discharge, making it one of the highest readmission rates in chronic disease (Gershon et al., 2019). Patients at higher readmission risk include those of low socioeconomic status and reduced access to primary care providers in the community (Gershon et al., 2019). Most COPD patients have complex medical conditions and see a variety of health care providers on an outpatient basis, and once they are admitted to the hospital, they may see several different health care providers (Fascia & Pedley, 2018). More providers mean gaps in care due to communication issues which may also interfere with a clear plan at discharge (Fascia & Pedley, 2018). This results in fragmented care, decreased patient satisfaction, and decreased health outcomes. Studies have shown that chronic disease management in the community saves money for the health care system by reducing hospital admissions and length of stay (Feldman et al., 2012).

Research on the integration of pharmacists in primary care has been done in European countries. Van Der Molen et al. (2017) showed that pharmacists are one allied health professional that is ideally suited to work in primary care to manage patients with COPD. Their knowledge of inhaled medications, spirometry and smoking cessation allows them to provide advice on inhaler technique, treatment adherence and self-management (Van Der Molen et al., 2017). Treatment of COPD requires screening for early identification and diagnosis, pharmaceutical and non-pharmaceutical interventions, and education on health promotion and smoking cessation. In COPD, the rate of treatment adherence averages 50%, and non-adherence leads to increased health care costs and adverse patient outcomes (Van Der Molen et al., 2017). Consequently, adding an allied health care professional to be specifically in charge of managing chronic respiratory disorders was shown to be beneficial since it can foster interprofessional communication and patient care planning, which can ultimately lead to improved quality of life, increased treatment adherence, and reduced complications like exacerbations leading to hospitalization (Van Der Molen et al., 2017; World Health Organization, 2022). Patients with chronic diseases like COPD can be effectively managed by an integrated team based in primary care (Gillett et al., 2016). However, it is important to note that respiratory therapy does not exist as a profession in European countries; therefore, their specific roles and responsibilities are being performed by other healthcare professionals, for example, pharmacists in this instance.

## 2.6 Respiratory Therapists in a Primary Care Role

Support for the role of respiratory therapists working in primary care is grounded in the profession's scope of practice and the principles of chronic disease management (Slack et al., 2018). The National Competency Framework (NCF) for the profession of respiratory therapy defines competencies that outline the scope of practice at varying stages of the career in the spirit of collaboration, client-centered care, and patient safety. Some of these competencies may be specifically directed to primary care. Examples of these competencies include: establish and maintain collaborative, supportive relationships with patients and families, consider patient goals in the development of treatment plans, provide patient education that focuses on self-management, deliver care as part of an interprofessional team, monitor patients over time to ensure optimal health and wellness and provide RT services in a primary care setting (The National Alliance of Respiratory Therapy Regulatory Bodies, 2016). These competencies are requirements of all respiratory therapy education programs across the country. In addition to the NCF, some education programs also teach the Foundational Health Education Competencies within the Canadian Network for Respiratory Care (CNRC). These include the principles of health education theories and models, integration of theoretical frameworks of health promotion and care into practice, designing a plan for learning interventions, and implementation of an education plan (Canadian Network for Respiratory Care, 2015). Respiratory therapists working in primary care settings are also encouraged to take supplemental certifications that include Certified Asthma Educator (CAE), Certified Respiratory Educator (CRE) and/or Certified Tobacco Educator (CTE). Post-diploma/post-degree certification as a CAE, CRE and/or CTE allows respiratory therapists to expand their scope of practice by obtaining the skills and knowledge in the management of chronic respiratory disease (Slack et al., 2018).

Studies show that the addition of a respiratory therapist to perform spirometry assists primary care physicians with the diagnosis of asthma and COPD and helps with staging patients with COPD according to severity of disease (Slack et al., 2018). The use of trained professionals such as respiratory therapists to perform spirometry in primary care results in better management of chronic respiratory diseases and improved patient outcomes. Therefore, respiratory therapy training, along with the supplemental certifications, makes respiratory therapists the ideal candidate to serve and manage chronic lung disease in a primary care setting. However, the roles and responsibilities of respiratory therapists have not yet been well documented. This is the gap I am trying to address with this project. By doing this, I also hope to inform the broader healthcare community and health care management of the value of using respiratory therapists in primary care, especially for the management of COPD.

Respiratory therapists working in primary care have developed and refined their roles according to the demand and nature of patient care as they have become established in primary care settings. These roles may have been disrupted during the pandemic, whether they were redeployed to acute care or not, and this would have resulted in intra- and inter-role conflict as their job responsibilities changed with redeployment and reorganization of duties. Respiratory therapists, like other healthcare professionals during the pandemic, worked short-staffed or without the proper equipment and had to make decisions about what tasks need to be executed in a timely manner to ensure the continuity of safe patient care. A change in roles due to redeployment from primary care to acute care may mean that respiratory therapists don't have the tools or knowledge necessary to perform in this new role, so they must make decisions that may appear to deviate from the formal role that is assigned to them. Inter-role conflict can occur when individuals play several different roles and there is a lack of consistency or congruency between the roles (Turner, 2001). To my knowledge, no research yet addresses how the roles and responsibilities of respiratory therapists have been influenced during the pandemic.

## 2.7 Research Question and Objectives

The purpose of this research is to answer the following question: How has COVID-19 impacted the practice (roles and responsibilities) of RTs working in Ontario primary care settings?

The three objectives are as follows:

1. To define the roles and responsibilities of respiratory therapists working in primary care in Ontario, Canada before the COVID-19 pandemic.
2. To describe the extent of role ambiguity experienced by respiratory therapists in primary care settings.
3. To describe the impact of the COVID-19 pandemic on the roles and responsibilities of respiratory therapists working in primary care.

## 2.8 Research relevance

Respiratory therapists bring a unique skill set to patients with chronic cardiopulmonary disease who transition from acute care settings to community-based primary care. The COVID-19 pandemic has disrupted many aspects of health care and has pushed health care organizations to come together to create innovative ways of addressing acute and chronic illness, health care practitioner shortages and address the importance of public health infrastructure (Kollman et al., 2022). This “disruptive innovation” will allow respiratory therapists to prove their worth in primary care by showcasing their training and expertise in chronic cardiopulmonary disease (Kollman et al., 2022). The disruption caused by the pandemic will

demonstrate what, if any, changes in the roles and responsibilities of respiratory therapists working in primary care have occurred.

In the face of the pandemic, primary care needs to be “strengthened and structured” to address people’s elementary rights to health care (Sarti et al., 2020, p. 2). According to Kumpunen et al. (2021), models of primary health care that emerged in Europe during the pandemic were 1) Coordination with public health; 2) Defining and identifying vulnerable populations; and 3) The use of digital solutions such as telehealth for remote care. Similar models can be developed for primary health care across Canada to move forward from the COVID-19 pandemic and prepare for future pandemics. Vulnerable populations such as those with chronic cardiopulmonary conditions require uninterrupted access to primary care providers and a multidisciplinary team of health care professionals to manage their conditions and prevent exacerbations which can lead to hospitalization. Increasing the workforce in primary care will allow health systems to prepare for surge capacity and ensure that there are enough providers working in the primary care sector if health care practitioners are required to be redeployed to acute care settings.

During the early stages of the COVID-19 pandemic, primary care continued to be the first point of contact for patients with the health care system, but it had difficulty in fulfilling its role in maintaining the continuum of care for those with chronic conditions like COPD (Rawaf et al., 2020). The COVID-19 pandemic allows health policy makers, health care professionals and patients to learn what worked well during the pandemic, and what new ways of working should become part of business as usual (Duckett, 2020). Patients should expect that the health care system will embrace some of the changes that were undertaken during the pandemic and demand implementation of new ways of providing care (Duckett, 2020). Primary care has shown itself to be highly adaptable in meeting the unique needs of the pandemic (Rawaf et al., 2020), and respiratory therapists have an important role that must be maintained during any future pandemic. Therefore, my research question is both innovative and relevant to the present post-COVID-19 context in which we locate ourselves.

## 2.9 Chapter Summary

This chapter defined primary health care and primary care, discussed the processes of primary care reform, and explored the roles of allied health professionals working in primary care. Clearly defined roles enable an individual to perform the tasks associated with the role and can help determine where role overlap may occur. The expansion of the profession of respiratory therapy into primary care can enhance patient outcomes through early detection of respiratory disease and intervention with education and treatment. The continued changes to primary care will hopefully allow for more respiratory therapists to work in this area, and lessons learned from the pandemic have shown the adaptability of primary care and those who work in this area.

Chapter 3 will present the philosophical assumptions of the study as well as describe the methods of data collection and the methodology that was used to examine the study results.

## Chapter 3: Philosophical Assumptions, Methodology and Methods

### 3.1 Introduction

This chapter provides the context for the research and describes the philosophical assumptions, the methodology, and the methods used to do data gathering. I will begin by describing the context of the thesis and how it is situated within a larger project. I will then explain how I used qualitative research strategy to answer my questions, followed by a discussion about the philosophical assumptions of the project. I have used the methodology of case study and this will be described, along with its strengths and challenges. Following the description of my methodology, I will present the methods that I used to gather the data. This includes the recruitment strategies and a description of how the virtual semi-structured interviews were conducted, along with the benefits and challenges of such. Then I will discuss the values embedded within qualitative research and describe my position within the study. Finally, I will explain my coding process and the application of case study analysis to the results.

### 3.2. Context of the Research

This thesis is embedded in a larger project titled *Integrating Respiratory Therapy in Primary Care (IRTiPC): Respiratory Therapists in Primary Care Settings: Mixed-Methods Pilot Research Project*, led by principal investigator Dr. Louise Chartrand. The purpose of the larger study is to determine if respiratory therapists can manage chronic respiratory diseases appropriately and efficiently in primary care. The objectives of the broader project are:

- 1. Explore the roles and responsibilities of respiratory therapists in primary care settings in Canada, and to explore how they changed with the COVID-19 pandemic.**
2. Evaluate how respiratory therapists can improve patients' health outcomes by evaluating hospitalization and other ambulatory care sensitive conditions' indicators.
3. Describe how respiratory therapists influence people living with COPD/asthma.
4. Describe how COVID-19 impacted primary care service delivery, and how this impacted COPD/asthma.

My thesis addressed the first objective.

The larger project involves data collection via virtual semi-structured interviews with respiratory therapists working in primary care in Manitoba and Ontario, as well as semi-structured interviews with patients of these respiratory therapists. The quantitative portion of the larger study is a retrospective chart review in two clinics where respiratory therapy services are provided and where services were disrupted

for varied reasons. These two clinics are in Ontario and Manitoba. Different indicators were taken into consideration to evaluate if respiratory services were helpful such as emergency department visits, primary care provider visits, etc. The data collection process to address the first objective of the larger study began in March 2023 and was completed by May 2024. To answer this objective, I have conducted qualitative research.

### 3.3. Qualitative Research

Qualitative research entails the in-depth investigation of real-world phenomena and includes methods that allow for understanding of people's experiences in ways that reflect how they make meaning of and interpret those experiences (Moser & Korstjens, 2017; Ravitch & Carl, 2021). Qualitative research approaches are used in health care research to discover more about social processes and about the behaviors of individuals (Safdar et al., 2016). The findings that a qualitative research project produces can contribute to various bodies of knowledge which target various disciplines. One of the goals of this research project is to contribute to the body of knowledge about what is known about the roles and responsibilities of respiratory therapists working in primary care.

Qualitative research is associated with the constructivist paradigm, which states that there are multiple interpretations of reality, and the researcher's goal is to understand how individuals construct their reality within a natural context (Moser & Korstjens, 2017). Qualitative research asks 'how', 'what' and 'why' questions of a smaller sample size and seeks to understand the participants' context by having the researcher interact with them, analyze data, and report findings that are supported by thick, rich description of their lived experiences (Korstjens & Moser, 2017). Unlike quantitative research, there is no predetermined sample size and data saturation occurs when there is no added information by gathering more data (Safdar et al., 2016).

Qualitative research was chosen for this project because the data collection tool (virtual semi-structured interviews) allowed for increased depth of questioning of the participants with prompting and flexibility of how the questions were asked by the interviewer. This allowed for nuances about the subject matter – roles and responsibilities and impacts of COVID-19 on practice – to be revealed during the interview. By employing a qualitative research approach, I was able to understand the context and settings in which participants addressed the issues related to their change in workload due to the COVID-19 pandemic and explain the links between causal theories, all of which provided a general picture of trends which could lead to the development of deeper theories related to the roles of respiratory therapists in primary care (Creswell, 2013).

In the next section I will discuss my philosophical approach to the research, followed by a description of the methodological framework of case study that will be used to address the clinical questions relating to the impact of the pandemic on the roles and responsibilities of respiratory therapists in primary care in Ontario.

### 3.4. Philosophical Orientation: Pragmatism

#### 3.4.1. Epistemology and Ontology

*Epistemology* describes the nature of how knowledge is created and understood, whereas *ontology* refers to the nature of reality and what can be known about it (Guba & Lincoln, 1994). In designing and executing this research project, questions around what is known about the management of chronic respiratory disease in a primary care setting and respiratory therapists' thoughts and feelings about providing this care were examined. I also focused on the impact that COVID-19 had on the roles and responsibilities of respiratory therapists and how they changed during the pandemic. My position as a respiratory therapist with experience in providing care to patients with chronic respiratory disease impacted my interpretation of the data and gave meaning and insight into the results. I see the management of chronic respiratory disease as a clinical/practical issue. Consequently, pragmatism was used as the philosophical underpinning of the project.

Pragmatism was developed in the late 19<sup>th</sup> and early 20<sup>th</sup> century and from an epistemological standpoint, it focuses on understanding practical, real-world issues (Kelly & Cordeiro, 2020). It provides the researcher with the opportunity to choose between a realist and idealist ontology and is neither completely objective nor subjective (Giacomini, 2010). Pragmatism focuses on human experience and actionable knowledge and suggests that there are many ways of interpreting the world (Kelly & Cordeiro, 2020). One of the early pragmatists was John Dewey, who suggested that all human experience involves some degree of interpretation of knowledge and beliefs, and this leads to reflection on actions which can result in new ways of knowing (Kelly & Cordeiro, 2020). As respiratory therapists adapted their practice during the pandemic, their usual roles in primary care were modified or discontinued if they were redeployed from primary care to acute care or transitioned to providing virtual care. Their experiences and “new way of knowing” shaped their ideas and beliefs and they had to change the way they did their work if they continued working in primary care. This problem solving that was done by respiratory therapists aligns with pragmatism as it focuses on an individual decision maker within a real-world situation (Helm Open, 2022) and the “practical consequences of social reality” (Kelly & Cordeiro, 2020, p. 2).

Goldkuhl (2012) states that pragmatism produces knowledge that is “aimed for general practice” (p. 143). This supports my research questions and objectives in that I sought to understand the function of respiratory therapists in primary care post-COVID-19 and will discuss the implications of my findings for future practice. There are three methodological principles for pragmatic inquiry which provide the lens for researchers to conceptualize and manage research projects: “1) Emphasis on actionable knowledge, 2) Recognition of the interconnectedness between experience, knowing and acting, and 3) A view of inquiry as an experiential process” (Kelly & Cordeiro, 2020, p. 3). The next section will discuss how my research was guided by the methodology of case study analysis.

### 3.5. Case Study as a Methodology:

A case study is a research methodology that involves an in-depth analysis of one or a small number of cases within a real-world context to understand a phenomenon. “Case study is grounded in a motivation to explore, seek understanding, and establish the meaning of experiences from the perspective of the participants” (Baron & McNeal, 2019, p. 88). Case study is used to investigate a contemporary issue when the boundaries between the phenomenon and its context are not clear (Yin, 2014). A “case” is defined by Stake as “an integrated system which has a boundary and working parts and is purposive” (Yazan, 2015, p. 17). More particularly, a case contains the phenomenon of interest within a specific time, geographical location, and social group (Crowe et al., 2011). For this thesis, the phenomenon was the impact of COVID-19, the specific time limit was 2 years post-pandemic which was 2024 as we estimated the end of the pandemic being in 2022, when all public health measures were lifted, the geographical area was Ontario, and the social group was respiratory therapists. Said differently, for this project, four cases were examined to understand the impact of COVID-19 pandemic on the roles and responsibilities of respiratory therapists in primary care. Using more than one case is called a collective case study (Baron & McNeal, 2019). Stake (1995) also uses the term “instrumental case study” to refer to the study of something other than the case. Each of the four cases were studied with a focus on the issue rather than the case; therefore, there was comparison within and across all four cases to demonstrate the issues that respiratory therapists working in primary care before, during and after the pandemic faced. This cross-case comparison looked for similarities and differences that highlighted the larger issue, which helped me to identify consistent or different patterns across the cases.

Case study methodology is suited for research when the researcher does not have control over the phenomenon of interest, and when there is limited existing knowledge about the phenomenon of interest. The COVID-19 pandemic is a contemporary issue, there are few respiratory therapists working in primary care in Canada, and their roles and responsibilities have not been discussed in the literature; therefore,

collective instrumental case study fits well to meet the objectives of this project as it explores the current issue of working in health care during a pandemic in the 21st century.

### 3.6. Study Design

To answer my research question and to meet the objectives', virtual semi-structured interviews were conducted with respiratory therapists working in primary care in Ontario. In what will follow, I will explain the benefits and challenges of using online video platforms for conducting semi-structured interviews. Additional challenges faced during the interviews for this research project will also be discussed. I will then describe the strategies used for recruitment and participant selection and discuss my inclusion and exclusion criteria. The development of the interview guide and its edits will be explained, followed by a discussion about my positionality and reflexivity as a researcher.

#### 3.6.1 Virtual Semi-Structured Interviews – Benefits and Challenges

The way we interact and communicate with each other has dramatically changed due to the COVID-19 pandemic. Physical distancing mandates throughout the pandemic required us to limit or eliminate face-to-face contact with each other, so people turned to internet-based platforms for communication for both work and personal use. The move to online video communication creates both benefits and challenges when conducting research interviews.

Data for this project was collected using virtual semi-structured interviews conducted either using Zoom or Microsoft Teams. This was a time-efficient and cost-effective means of interviewing the participants as they live in a different province than the researcher. Benefits included reduced costs for the research project when using video communication, as there was no need for travel, parking, accommodation or per diems. There was also ease in scheduling the interviews and participants could choose their time and location for the interview to take place. All discussions between myself, the research assistant, and the participants pertaining to scheduling the interviews were done via email, and all participants attended their online interview. Recruitment extended across the province of Ontario and included participants from both urban and rural settings.

A primary benefit of semi-structured interviews is that it allows for the interviews to be focused but also gives the researcher the ability to explore important ideas that are shared by the participant during the interview which can further enhance understanding of the issue (Adeoye-Olatunde & Olenik, 2021). Semi-structured interviews allow the researcher to understand the participant's unique perspective towards an issue, rather than obtain a generalized understanding of it (Adeoye-Olatunde & Olenik, 2021). They involve asking all participants the same questions but allow the interviewer to explore other ideas that may arise during the interview. The order of the questions can be altered depending on the responses,

and the researcher can ask probing or follow-up questions for additional information or clarification of responses. The open nature of semi-structured interview questions encourages depth of responses and allows new concepts to emerge (Dearnley, 2005). The nature of the interviews was that of a conversation between me and the participant where we co-constructed meanings related to the work of the respiratory therapist in primary care (Gaudet et al., 2018). An advantage of semi-structured interviews is that they allow participants to describe their experiences at length and have some control in the creation of the narrative (Gaudet et al., 2018). Although the interviews were scheduled for one hour, there was flexibility to this period dependent on the participants' availability and the trajectory of the interview.

Benefits of online video communication include a preference for this technology over in-person or telephone interviews because it allows people to remain in a private setting such as their home or work office (Oliffe et al., 2021). Oliffe et al. (2021) also state that Zoom can aid in building rapport with participants as interviewees are more comfortable in the setting of their choosing. Video communication is shaped by the language, cues, and immediacy of feedback (de Villiers et al., 2022). Interviewers can better understand their interviewees if they can see facial expressions and body language and this can be impacted by video communication; therefore, it was important that the participants remained visible throughout the interview so that the researcher could pick up on these cues and expressions (de Villiers et al., 2022). The disadvantages of the interview process include the lack of a relationship between me and the interviewees, as there was no previous social or working relationship between us. The lack of familiarity between us was impacted by our respective cultural contexts and socio-economic backgrounds and this could have affected how the participants framed their responses to the questions (Karatsareas, 2022). Social disability bias, where participants say what they believe the interviewer wants them to say, or acquiescence bias, where participants agree with what the interviewer says regardless of their beliefs also impacts the accuracy and fulsomeness of interview responses (Karatsareas, 2022). I was aware of these limitations during the interviews and worked towards minimizing them through presenting a thorough introduction of the research study to the participants, a description of the overarching project, and information about my shared professional background as a respiratory therapist.

Despite the benefits of online video communication strategies, there are some drawbacks. It is important for the interviewer and interviewee to be familiar with the platform that is used because the conversations lasted a minimum of one hour, and there were complex topics discussed pertaining to work environment and impact of the pandemic on workload and tasks performed by the respiratory therapist. Some participants had difficulty securing an internet connection. This impeded the flow of the interview as questions and responses had to be repeated. Dropped calls and the need to reconnect to the internet can

interfere with the flow of the interview and could compromise the quality of the data collected (Wakelin et al., 2024).

Some participants were unwilling or unable to turn on their cameras, but this became a requirement in subsequent rounds of recruitment. Having the camera on during the interview provides immediate feedback, and this can reduce the impact of language barriers by allowing both parties to see body language and facial expressions (de Villiers et al., 2022). Wakelin et al. (2024) suggest that the screen acts as a barrier to emotion when the interviewer and interviewee are not physically present with each other, and this reduces the connection to a “disembodied one” (p. 6). Online video interviews allow the interviewer and interviewee to see each other, but only from the shoulders up. Some studies suggest that the nuances that are present during in-person face-to-face (F2F) interviews are lost in an online interview, while others have identified no differences (Wakelin et al., 2024). Furthermore, it has been found that conducting online interviews provides the opportunity for participants to share more information than face to face because the setting makes it easier for those who might be socially awkward or uncomfortable sharing in-person to communicate in a less intimidating manner (de Villiers et al., 2022; Wakelin et al., 2024).

Younger participants may be more experienced with video communication technology, while others are naturally good communicators and were at ease during the interviews. Aside from internet connectivity, there were no issues with participants knowing how to use the online video communication technology. It was important that the interviewer and interviewee were both visible to each other during the interview so that we could respond to each other’s visual cues and establish rapport. Maintaining eye contact and demonstrating active listening with ‘umms’ and ‘ahhs’ replicate what would occur in an in-person interview (Wakelin et al., 2024).

The COVID-19 pandemic has allowed individuals and society to become more comfortable using online platforms for communicating with each other, and the use of Zoom and Microsoft Teams continues beyond the pandemic. Despite the “normal” challenges of semi-structured interviews and the increased challenges of conducting these interviews via online video, there are several benefits to the use of online mediums for conducting research interviews which include increased comfort for the participants in choosing the location of the interview and the visibility of each other to pick up on facial expressions and non-verbal cues. The increase in use of online video communications made this research possible. The next section will discuss how the participants were selected for the study and describe the challenges that I faced with recruitment.

### 3.6.2 Ethics and Recruitment

Ethics approval was obtained by the University of Manitoba (HREB H2022.109). Following ethics approval there were two rounds of recruitment. In the first round of recruitment, participants were invited to participate via an email blast from the following respiratory therapy specific organizations: The Canadian Society of Respiratory Therapists (CSRT) and the Respiratory Therapy Society of Ontario (RTSO). Respiratory therapists who self-identified as working in primary care were selected for interviews. The first round of recruitment occurred in March 2023. A second round of recruitment using the same strategies, with the inclusion of the College of Respiratory Therapists of Ontario (CRTO) was done in March 2024 following an ethics amendment. Approval was obtained to change the consent form to request that participants provide us with their registration number from the CRTO so that we could confirm that they were Registered Respiratory Therapists.

### 3.6.3 Inclusion and Exclusion Criteria

Inclusion criteria for this study included respiratory therapists who work in Ontario, and those who self-identified as working in primary care in either an urban or rural setting. Inclusion criteria also included respiratory therapists who worked in this setting during the COVID-19 pandemic. Exclusion criteria included respiratory therapists who work in acute or community care in Ontario, and those who started working in primary care post-COVID-19 pandemic. Respiratory therapists who worked in management positions in primary care were also excluded, as these positions were not being studied to answer the research question or objectives, and manager's roles would be different than those respiratory therapists who provide direct patient care in the primary care setting. Following the second round of recruitment, I added that all participants had to turn on their camera during the interviews to ensure they were who they said they were. There were 24 interviews done, but due to 12 of the participants being imposters, and another eight participants being managers or not working in primary care, four interviews fit my inclusion criteria. The interviews were conducted by me, the principal investigator Dr. Louise Chartrand, and the research assistant Sakshi Tyagi. Interviews were conducted from March 2023 – May 2024. All interviews were digitally audio-recorded. I transcribed two of the interviews, and the remainder were transcribed professionally. All participants received a gift card for \$20 as a thank-you for participating in the interviews.

### 3.7. Interview Guide

The semi-structured interview guide was developed by the larger research team. The interview questions were developed based on the objectives of my study. The guide went through several iterations and after two rounds of interviews, additional questions were created based on participant feedback. Some of the probing questions became questions on their own, as it was felt that it was important to explore

them in detail and not just within the context of another question. Please refer to Appendix A for the interview guide.

The following provides rationale for changing the interview guide and the additional questions:

Question 2: *“What made you choose or change positions into primary care?”*

This question was pulled from question 1 as a probing question because we felt that it was important that the participants tell us why they worked in primary care as opposed to acute care where most respiratory therapists work. In the first round of interviews, the participants responded that they felt a greater connection working with patients in primary care vs. acute care. This was important as it provided us with a sense of commitment by the respiratory therapists in working with patients with chronic respiratory disease in a community setting. This could have implications for how they view their roles and responsibilities and would address the research question.

Question 3: Probing question: *“Do you work in an urban or rural setting”*

Based on feedback from my thesis proposal, it was important to observe any differences in roles between working in either an urban or rural setting.

Question 5: *“What aspects of your position do you value the most? What aspects of your position do you value the least?”*

Initially this was a probing question, but due to the rich responses that we received in the first round of interviews, we decided to ask it as a stand-alone question to capture the participants’ thoughts and feelings about working in primary care. This would address the research objective of defining the roles and responsibilities.

Question 6: *“What aspects of your position differ from working in acute care?”*

Initially this was a probing question, but again, due to the rich responses that were provided in the initial round of interviews, it was determined that this question could provide us with information about the roles and responsibilities of respiratory therapists working in primary care and would address the objectives of the study.

### 3.8 Positionality of the Researcher

Situated knowledge reflects the perspective of the researcher. Since this project sits in an idealist ontology, it is important to acknowledge that the researcher has pre-existing knowledge and experience of the roles of the “actors” that are being examined in this study. According to Haraway (1988), “situated knowledges require that the object of knowledge be pictured as an actor or agent, not as a resource...and

never finally as slave to the master that closes off the dialectic in his unique agency and his authorship of “objective” knowledge” (p.592). Positionality acknowledges that the researcher co-constructs knowledge alongside their participants; therefore, the researcher’s background and experiences provide them with a lens through which they see the world (Savolainen et al., 2023).

It is important for me to acknowledge my professional background as a respiratory therapist with three decades of experience, with almost two of those decades being spent providing care to patients of all ages with acute and chronic respiratory disease. My passion for my profession and my desire to see the profession of respiratory therapy grow in primary care has undoubtedly created blind spots during this project. I was able to overcome this using the strategy of triangulation, where I consulted with my supervisor and did a participant check-in, where the results and discussion section of the present thesis were sent to one participant for comments. I hope there will be increased funding for respiratory therapy positions in primary care, especially in the province of Manitoba where I work in the Bachelor of Respiratory Therapy program at the University of Manitoba. As a respiratory therapy educator, I teach the principles of primary care and express the importance of respiratory therapists working outside of the acute care setting to promote health and wellness throughout the continuum of life.

I believe that all Canadians should have access to primary care clinics which include respiratory therapists. This requires the federal and provincial government, local policymakers and respiratory therapy educators to provide funding and human resources to create more positions for respiratory therapists to work in primary care. My goal was to consider my position and the roles of the “actors” (I.e. Participants) by representing their many voices and perspectives throughout the research process to ensure that it was responsive to their views. It is because of my motivation towards increasing the presence and roles of respiratory therapists in primary care that I undertook this project to examine the present context of the profession post-pandemic. Since it is important to state my position within the research, it is also important to assess my reflexivity in terms of my limitations in data collection and analysis.

The next section discusses the values of qualitative research that were considered in my project which include criticality, reflexivity, collaboration, and rigor.

### 3.9 Examining the Horizontal Values of Qualitative Research

Reality is constructed by our cultural, social and individual contexts, and varies between people based on their life experiences. Qualitative research requires the researcher to interact with the participants whether it is through observation or interviews; therefore, influence by the researcher on the context of the situation is inevitable (Korstjens & Moser, 2017). Researchers should strive to minimize

their interference with participants' natural settings and be aware of their own personal connections and limitations to the topic that is under investigation (Korstjens & Moser, 2017). Disciplinary perspectives can affect how we see or read issues, so researchers need to practice reflectivity to consider their disciplinary biases or limitations as they relate to their understanding of the phenomenon that is being studied (Hunt, 2009). “Qualitative research involves iterative processes of interpretation, reflection and sense-making” (Ravitch & Carl, 2021, p. 11). The researcher is an instrumental part of the research process; therefore, it is their ethical responsibility to examine and understand their own personal and professional limitations and how they might impact how the data are collected and analyzed. To guide and inform the methodological processes that a researcher selects, and to ensure that the research is ethical and valid, they must consider four values: criticality, reflexivity, collaboration and rigor. Ravitch and Carl (2021) refer to these concepts as *horizontal values* because they are presented throughout all phases of qualitative research.

“Criticality helps researchers see, engage, contextualize, and make meaning of the complexity of people’s lives, society, and the social, political and economic forces that shape and delimit them” (Ravitch & Carl, 2021, p. 12). My approach to criticality during this research project was to be aware of my position as a descendant of white settlers, who has had the benefits of white privilege throughout my education and career. This privilege has enabled me to set and attain goals in my professional life that my research participants may have struggled with. I have had access to education to achieve and make advancements throughout my career as a respiratory therapist and as a result, have held jobs in different areas where respiratory therapists may have struggled to obtain positions or be valued for their skills and knowledge. The opportunities that I have had, and continue to have, may have led to a perceived power differential between myself and the participants, and this may have impacted their interview responses. Attention to the value of criticality has enabled me to work towards creating an environment of antihegemony (Ravitch & Carl, 2021) to allow the participants to feel comfortable in sharing their experiences related to establishing or maintaining their roles in primary care prior to and during the COVID-19 pandemic.

Reflexivity on the part of the researcher allows them to assess their identity, positionality, biases, assumptions, and values in becoming aware of how they themselves are situated within the research. Personal and professional experiences impact a researcher’s reflexivity, including the data that is generated and interpreted (Ravitch & Carl, 2021). Collaboration between the researcher and the participants provides opportunities for “dialogic engagement to help foster rigorous and reflexive research as well as criticality in qualitative research” (Ravitch & Carl, 2021, p. 15). Reflexivity was operationalized through my awareness of my identity as a respiratory therapist who shares similar work

experiences and professional values as the participants. Throughout the research process, I kept a reflective journal that I would make entries into with each interview. This allowed me to capture my emotions and situation as they related to the interview. When reviewing the interview transcripts, I referred to my journal to help identify any limitations or thoughts that would impact on how I would interact with the data. This intentional activity of reflexivity is critical in conducting and analyzing research. For a sample of my journal entries, please refer to the audit trail in Appendix D.

Collaboration provides opportunities for *dialogic engagement* between individuals to promote learning and growth (Ravitch & Carl, 2021). Throughout this project, I collaborated with my supervisor, and a colleague who works in primary care but was not involved with my research to discuss my points of view about the project and its potential impacts on the practice of respiratory therapy in primary care across Canada. The conversations were not about coming to agreement on what the implications of the research could be, but rather about the processes that were undertaken to achieve the goal of addressing the research question and objectives. Conversations to help keep my thoughts organized and not go too far down the “rabbit hole” guided my investigation and writing processes. This helped with my self-reflection and addressed my limitations around power and equity between myself and the participants. Their opinions were respected and reflected upon as I collected and analyzed the data.

Rigor, also referred to as trustworthiness, refers to the overall research quality and validity. It requires designing a study that is faithful to both the research questions and the participants’ experiences (Ravitch & Carl, 2021). Rigor is essential to prevent disrespectful and unethical representations of participants’ lives and experiences. In assessing rigor/trustworthiness, Forero et al. (2018) describe Lincoln and Guba’s Four-Dimensions Criteria (FDC). These dimensions include credibility, dependability, confirmability, and transferability.

To establish credibility, there must be confidence that the results are true and believable from the perspective of the participants (Forero et al., 2018). Credibility can be established by implementing the strategies of triangulation, member checking, presenting thick descriptions of the data, using peer debriefers, and/or having an external auditor (Ravitch & Carl, 2021). For this project, one participant reviewed their interview transcript to ensure that the information captured was consistent with their responses. Peer debriefing was done between myself and my supervisor.

Dependability refers to the stability of the data and ensures that the findings of the inquiry are replicable if they occurred within the same cohort of participants, using the same coders, and within the same context (Forero et al., 2018). Data for four interviews was coded by this researcher as well as the project supervisor. Codes were discussed and modified as agreed upon by the researcher and supervisor.

Confirmability refers to the confidence that the results would be similar or agreed upon by other researchers (Forero et al., 2018; McGloin, 2008). It considers the fact that researchers are not objective, yet they seek to have data that is free from biases or other perspectives (Ravitch & Carl, 2021). To achieve this, conversations between myself and the project supervisor occurred while reviewing the data to help build initial categories and themes. My limitations of being in the same profession as the participants and hopes for increased positions and roles of respiratory therapists working in primary care were discussed in terms of how my perceptions influenced the interpretation of the data.

Finally, transferability, also known as applicability, means that the results can be generalized or transferred to other contexts or settings (Forero et al., 2018; McGloin, 2008). This can be achieved by having a thick description of both the data and the context so that the audience can consider alternate factors instead of attempting to replicate the study design and findings (Ravitch & Carl, 2021). The descriptive data provided in this thesis will allow for transferability to other contexts to help further define the roles of respiratory therapists in primary care settings in other provinces across Canada.

It is impossible to eliminate all biases; therefore, the use of tools such as reflective journals can help guide and document the reactive processes of interpreting or countering bias that occurs during the research process (Thorne et al., 1997). Steps must also be taken to ensure that researcher bias or overenthusiasm has not skewed the findings of the study. The researcher should bring their early conceptualizations of the data that represent the entire sample rather than an individual participant back to the research participants for their consideration (Thorne et al., 1997). A strategy such as this creates ideal conditions for examining the theory that arises and allows the researcher to be confident that the concepts are grounded in the data and represent the realities and are not due to researcher error (Thorne et al., 1997). For this project, I shared my initial codes and categories with one of the participants so that they could examine the concepts that I developed from the data. They also reviewed their interview transcript and the results of the study to ensure that the results were “grounded in the data” (McGloin, 2008, p. 50). An audit trail and reflective journal was maintained throughout the study to document my decision-making process and support reflexivity about my assumptions and potential biases.

In the next section, I will describe the process I used to analyze the case study to develop categorical aggregates.

### 3.10 Case Study Analysis

The analysis of the four semi-structured interviews was performed within the individual case and across the four cases to understand the roles of the participants and as such, instrumental collective case study analysis was employed. Instrumental case studies are used to understand another case, and

collective case studies utilize several cases (Gilstrap, 2009). Using Stake's terminology, categorical aggregation was used to group patterns across the cases to identify trends in the data (Yazan, 2015). The cases were analyzed to understand the roles of respiratory therapists working in primary care and describe the influencers of role behaviour. In addition, the impact of the COVID-19 pandemic on these roles was examined.

Using an inductive approach, initial categories were created by examining the data very carefully with a focus on capturing specific meanings from the data to generate categorical aggregates (Braun & Clarke, 2022; Stake, 1995). Categorizing the data from the interviews helps to identify patterns in the data so that it addresses the research question and objectives. Coding qualitative research data helps to describe the phenomena under study, determine its meaning, and allow for the creation of a descriptive framework to understand it (Williams & Moser, 2019).

I read each interview twice to familiarize myself with them. After reading each interview a third time, I made notes on initial impressions and thoughts about the responses using the 'New Comment' function in Word. I then read each interview a fourth time and added to my notes. These notes were helpful in creating the initial categories. Following this, I uploaded the transcripts to NVivo 14 for coding and comments.

Once the transcripts were in NVivo 14, my supervisor and I separately coded the interviews. After this was completed, we met to discuss and compare notes. We discussed at length, the codes that we developed. Differences and similarities in our codes were discussed, and I refined and changed my categories as our discussions progressed. After the interviews were coded, I reread the transcripts 2-3 more times after developing the initial categories to ensure that important data was captured. I read each interview a total of 8 times before coding was completed. Reflexive notes were taken during the interview and during this phase of being immersed in the data to keep track of my feelings and the reflexive process. Reading and rereading the interviews while developing the categories brought forth feelings like what the participants might have experienced during the interview, as I could put myself in their shoes being a respiratory therapist who has also worked in a similar environment.

After the initial coding was completed, categorical aggregates that were shared across all interviews were developed. Once this was completed, the transcripts were reviewed again to make sure that the aggregates reflected what was created from the data. More aggregates were created as patterns within the data were identified. Relationships between the categories were explored and further refined after discussion with my supervisor. All categories were refined to ensure that they were clearly described. Each overarching category consisted of sub-categories that described the data in terms of

answering the research question and objectives. This involved combining initial categories that were similar in nature (I.e. “Public fear of COVID-19” and “Hero to Zero” were amalgamated into one category: Public Fear.

After the categorical aggregates were agreed upon between myself and my supervisor, the results section was written to describe the connection between the data and the research question and objectives. Each categorical aggregate is described for each participant and is supported by quotes that illustrate the category.

### 3.11 Chapter Summary

Chapter 3 focused on defining the philosophical assumptions of the project and aligned it with idealism and pragmatism. The methodology and method of case study analysis which will be used to demonstrate and discuss the results, was described. The method of data collection was discussed, along with the benefits and challenges of performing virtual interviews. The issues with recruitment were discussed, as were the challenges in achieving data saturation. Details regarding modifications that were made to the interview guide after the first round of recruitment were outlined. My positionality as a respiratory therapist with similar work experiences as those who were interviewed was discussed, along with the dimensions of assessing rigor within a qualitative research study. Chapter 4 will focus on the results of the semi-structured virtual interviews that were conducted, with a description of the categorical aggregates that I created from the results.

## Chapter 4: Results

### 4.1 Introduction

This chapter presents the findings from an instrumental collective case study analysis that examined the impact of the COVID-19 pandemic on the roles and responsibilities of respiratory therapists working in primary care in Ontario, Canada. The analysis is based on data collected from four virtual semi-structured interviews. Results are presented under two categorical aggregates that I have created from the data.

The first category captures the roles and responsibilities of respiratory therapists working in primary care. Within this category are the descriptors of the influencers of role and includes the perception and value of respiratory therapists in primary care, and job satisfaction of respiratory therapists in primary care. These aggregates describe the frustration over lack of understanding of the role and value of respiratory therapists in primary care and emphasizes the autonomy of respiratory therapists in these positions, their expertise in managing chronic respiratory disease, and the need for more respiratory therapists in these positions.

The second category demonstrates the impact of the COVID-19 pandemic and showed that the pandemic required respiratory therapists to respond to public health measures by reducing or discontinuing their face-to-face contact with patients or pivot towards providing care via virtual means. This caused distress in some respiratory therapists who felt a disconnect with their patients and the inability to provide sufficient care due to not being able to see their patients in-person, perform diagnostic testing such as spirometry, and place their hands on them to perform their physical assessment skills.

The results are organized by case and the common categorical aggregate within each case provides details about the adaptation of respiratory therapists to public health protocols, employer demands, and public views about the pandemic. Each case will be discussed in detail according to the categorical aggregates. Each aggregate will be presented and supported by the data. Each case will be summarized and compared to the others in terms of findings. Following the results, Chapter 5 will present a discussion of the findings and state how they are supported or refuted by the literature.

In what follows, the cases of Amy, Harry, John and Sam will be discussed in terms of categorical aggregates that helped to define their roles and responsibilities and the impact of the COVID-19 pandemic on these roles. See Table 1 for a summary of the demographics of the participants who were interviewed.

Table 1: Participant Demographics

Registered Respiratory Therapist	Work Location	Years of Experience as an RRT	Sex/Gender	Post-RRT Credential Certification
Amy	Rural	12	Female	*CRE, ***TEACH
Harry	Urban	15	Male	*CRE, ***TEACH
John	Rural	13	Female	*CRE
Sam	Rural	23	Male	*CRE, **CTE

\*CRE: Certified Respiratory Educator

\*\*CTE: Certified Tobacco Educator

\*\*\*TEACH: Training Enhancement in Applied Cessation Counselling and Health

## 4.2 Amy

Amy has been a respiratory therapist for 12 years and works in a rural primary care setting in a Family Health Team (FHT). Prior to the COVID-19 pandemic, Amy provided in-person care to patients, performing spirometry, respiratory education, physical assessments, and smoking cessation. Amy is the only respiratory therapist within a 100 km radius, so patients requiring complete pulmonary function testing, or the acute care services of a respiratory therapist must travel this distance to receive care. Amy's patient referrals come from physicians, nurse practitioners, and other members of the interprofessional team such as social workers, pharmacists and dieticians within this 100km radius. Patients can also self-refer and are of *"all ages and all reasons...I see everything, including a lot of really weird workplace diseases"* (Amy). Patient ages range from six years old and up. Referrals occur *"anytime somebody indicates to their provider that they're having a hard time breathing, making funny noises when they breathe, or coughing a lot... the reasons for referral are so broad, really anytime there is dyspnea or coughing with no known cause that's not respiratory-related, RT gets involved and go-to for best practices"* (Amy). Once a referral is made to Amy, they see the patient for an initial spirometry test, education on disease process, trigger management, medication use, development of action plans, and smoking cessation if required. There are follow-up appointments as needed, including post-exacerbation follow-ups.

### 4.2.1 Roles and responsibilities of respiratory therapists in primary care

Patient appointments last between 1-2 hours and include history taking, spirometry, and education. More complex cases include many questions to the patient to try and assist with a diagnosis:

*“it’s a lot of history taking, a lot of I find even just general health question and answers, going through things that they’ve already done and trying to explain things to them to kind of put the pieces together, going through consults that they would have done already, trying to answer questions, doing spirometry, and then trying to... Whether or not it’s with them in the office or not, but I try to look at historical data for them to try to piece together patterns to then make an assessment to say what I think is happening, whether it’s respiratory-related or not, and make a bunch of recommendations, sometimes including referrals for other things.”*

Amy’s role consists of seeing patients in the Family Health Team clinic as well as the occasional home visit to patients who aren’t able to come into the clinic or if they have respiratory equipment at home that Amy wants to check on.

*“If somebody identifies that they have trouble physically coming in would be the trigger for me to offer it (home visit). So it’s typically somebody that has a lot of mobility trouble, that they can’t physically make it in. The last home visit I did was they had a trach. So they had just been sent home from a two-year-long stay in hospital. So sometimes it’s because I want to see their set-up at home. So if it’s like equipment-related, that would be a big reason I would choose to go see somebody at home. But I also try to piggyback on other appointments. So if they’re already in the building for something else, then I can try to see them that way. But mostly mobility or if they say that [there’s still no end stage 15:02], they can’t leave, I will offer. So I’d say like monthly, less than monthly I do a home visit” (Amy).*

Amy also keeps patient charts updated with information about patients following a hospital admission as part of the hospital discharge follow-up:

*“If it was a new diagnosis they got, a surgery that they had, we would update the charts. But then the other component is actually chatting with the patient to see how they’re doing since coming home from the hospital, and then kind of a systems navigation piece with that of arranging follow-up additional to that if required” (Amy).*

Appointments that involve spirometry (pre- and post-bronchodilator) to assist with diagnosis or see changes or trends in disease progression, and assessments occur in-person, and Amy typically sees four patients per day in the clinic. Smoking cessation sessions can occur over the phone and don’t take as much time, so they can be interspersed between the in-person appointments. It is the patient’s choice as to whether the smoking cessation occurs in-person or via the telephone. If a patient is in the clinic for spirometry and Amy knows that they smoke, they will discuss that as well. Other tasks include inhaler teaching, and education about trigger management. A typical day for Amy involves preparing the

spirometry equipment for patient testing and reviewing patient charts from previous visits to get a sense of what is required for the patient when they attend the clinic.

*“So because I have all of the information, it’s there for me to look at to do my job better. So being able to actually go through all the old stuff takes a lot of time, but then [audio briefly cuts out] to piece together all of the historical parts, which can help differentiate between chronic diseases and acute problems” (Amy).*

Amy spends 45 – 60 minutes with each patient and then 10 – 30 minutes to complete the patient’s charting.

*“Four (patients) on a normal day. [audio briefly cuts out] an RT consult type visit, because then sprinkling in smoking cessation visits over the phone, that’s easy peasy. Those don’t take as much time. But typically the more time intensive visits, typically four a day” (Amy).*

Patient consults via telephone can last up to 30 minutes.

Prior to patients being booked for an appointment with them, Amy triages all referrals and provides instruction to the administrative staff regarding booking an appointment. Amy decides which patients require a follow-up appointment and does those bookings themselves.

*“So all requests for an appointment come through me that I triage and provide instructions for booking, and then forward the triaged visit with instructions to an admin person who then is responsible for actually calling to book them. But then depending on the visit, sometimes I’ll do my own follow-ups. So, say, if I do an initial for somebody but I’m not quite done figuring out what’s happening, I’ll book a follow-up in 2-3 months to continue the first visit” (Amy).*

Amy reiterated their point about seeing patients for anything respiratory-related and has the ability to consult directly with specialists about different patient cases that might not have a straightforward diagnosis:

*“When you start to get into the weird and wonderful cases that I know that I don’t have an answer to, and I have to go and search for more information, or if I have to do... We have a program called (Program) that you can write a consult note about a patient and send it directly to a specialist and get a response right back from the specialist, completely bypassing the patient. So I do that. And so that also takes extra time to write up those referrals, wait for the answer, take whatever information you’re given from the answer to try to apply it to what’s going on, and figuring out what to do next with that” (Amy).*

#### 4.2.1.1 Perception and value of respiratory therapists in primary care

Despite being the only respiratory therapist within a 100 km radius, Amy feels that there is a lack of understanding of what respiratory therapists can do and, as a result, feels underutilized in their role. This lack of understanding of the role of respiratory therapists working in primary care and their potential in these positions is apparent throughout the profession of respiratory therapy as well as the employers.

*“So when we renew our licence here, there’s like a boatload of checkboxes that correlate with all of the different controlled acts that RTs could do, and it wants you to just check off each of the things that you do in your job. So let’s say there’s like a hundred checkboxes. There’s like one checkbox that describes my job. But I know that my job is more than one checkbox worth compared to an acute care position. So, all the 99 other checkboxes... Well, let’s not quite say 99. Let’s say like 95 of those hundred are all very, very, very specific to acute care. So, based on scope of practice as it applies to hands-on skills, they are not the same, the jobs, at all”* (Amy).

*“I don’t think that the depth and breadth of primary care is reflected in those checkboxes”* (Amy).

Colleagues within the profession who work in acute care don’t understand what the roles and responsibilities of respiratory therapists working in primary care are, but they also don’t presume that they know how to perform these roles either.

*“But when I’ve spoken with acute care RTs, they also don’t assume that they could do this job well. And a part of that is a lot of them don’t understand it. They don’t even know what it is...”* (Amy).

Amy finds it difficult to constantly be describing to other health professionals what it is that they do in their role in primary care and feels like they are continually trying to promote themselves in their role and for their profession.

*“So, it’s having to fight all of the time to say, “This is why you want an RT, not a nurse.” Like nurses have been around forever and ever and ever and ever. Everybody knows nurses. But... So, it’s a constant self-... – what’s the word I’m thinking of? – like having to talk yourself up all of the time to every single profession and being able to do that in a way that you’re not coming off as being full of yourself. Because you’re trying to promote your profession, but you are your profession. So, it’s constantly a struggle to do that in a way that’s productive”* (Amy).

Amy feels that the profession of respiratory therapy needs to do more to promote their role in primary care:

*“I think it’s a marketing problem at this point. Like I think we need to have some sort of massive marketing campaign for the RT profession”* (Amy).

Despite their frustration with a lack of understanding of what respiratory therapists' roles are in primary care, Amy does have the support of respirologists for their role and compares the specialized knowledge of respiratory therapists as chronic disease educators and managers to the roles of certified diabetes educators (CDE).

*“He said that he would love to see the amount of effort put into respiratory education with CREs as there exists for diabetes and CDEs. So comparing it to the role of CDEs for diabetes, as soon as you get it... you know how important getting a diagnosis is and how to get it with confirmation objectively. And then as soon as you get a diagnosis, especially if it's in hospital, you are immediately connected with a CDE for education. So he's like, “Why can't we do the same thing for respiratory stuff? As soon as you get a diagnosis, you are immediately connected with a CRE.”” (Amy).*

#### 4.2.1.2 Job satisfaction of respiratory therapists in primary care

Despite the challenges of working in primary care where other members of the profession, colleagues and employers don't fully understand what the roles and responsibilities of respiratory therapists are, Amy feels valued for their expertise in best-practice in respiratory disease management.

*“So, because the reasons for referral are so broad, really anytime there is dyspnea or coughing with no known cause that's not respiratory-related, RT gets involved and go-to for best practices. So I think a big, important piece of what the role should be, whether or not that's actually the case, is provider education. Like the RT in primary care should be educating the rest of the providers on best practices” (Amy).*

The referring physicians rely on Amy for treatment recommendations for their patients:

*“There is a lot of communication back to the referring physician, um, so, lots of assessments, lots of recommendations they're quite independent in their recommendations or, you know, changes to their medication or initiation of medication um, so again we work within medical directives and policies and procedures that allow them to perform these tasks” (Amy).*

Collaboration between Amy and other healthcare practitioners demonstrates the value of interprofessional care in providing smoking cessation, pulmonary rehabilitation and hospital discharge planning:

*“So smoking cessation, we're part of the STOP study through CAMH. So the three of us currently that are doing it, myself as an RT, our social worker, and our dietitian. Which is kind of nice, because depending on the client, they're better suited for one of us than the other. And then we have had various rehabs over the years with a little asterisk because I can't do it by myself. So that's staffing-dependent,*

*that the years that I've had staffing support to be able to run a rehab, it's been done. Hospital discharge follow-up was also interdisciplinary that I was... well, I started, involved in, started” (Amy).*

Being the only respiratory therapist working in a small community with a wide referral base means that physicians and other health professionals rely on Amy for their expertise and states that they are “*literally the content expert*” (Amy) when it comes to knowledge about chronic respiratory disease management.

Autonomy is greatly valued by Amy, and they appreciate the flexibility in setting their patient schedule, making decisions about patient care, and pandemic planning for spirometry testing. Amy can flex her time throughout the day to accommodate patients who can require between 10 – 90 minutes for an appointment. They can take the time that is required to provide care and education to patients.

*“I value the autonomy that I can decide what my day looks like and what projects I want to take on. They (patients) could see somebody in 10 minutes and that's all that it takes...But if somebody requires 90 minutes to go through whatever it is that needs to be discussed or done, we can do that too” (Amy).*

#### 4.2.2 Impact of COVID-19 on respiratory therapy practice

The COVID-19 pandemic caused a reduction in in-person visits to primary care clinics and a move to virtual appointments that were held via telephone or online video meeting due to the public health measures that required social distancing. This meant a discontinuation of spirometry testing and waiting to find out when the testing could be started up again.

*“Waiting for instruction for how to get back into spirometry. That was the biggest thing that changed” (Amy).*

However, it was only a few weeks before Amy was able to perform spirometry testing again once instruction was provided by leadership on what infection control precautions had to be taken.

*“So pretty quickly we got instructions of “If you're going to be doing this, these are the things that you should be doing or not doing.” So during all of COVID, there was only like three weeks that I wasn't doing spirometry” (Amy).*

Once this practice resumed, being seen in person by a health care professional was emotional for some patients as they hadn't seen someone in person for quite some time.

*“So because I started back up with in-person visits pretty quickly, I was often the only person that these people have seen in person. Like to the point that I'd had multiple people in tears because I was the first person that physically touched them in months or years” (Amy).*

Access to N95 equipment such as masks and gowns was not too difficult because there was community support and a good relationship between the primary care clinic and the hospital in Amy's community.

*"We were lucky that we had some community groups sew a bunch of gowns. So we had gowns to use. I had a bunch of... Like gloves wasn't a problem. N95s almost became a problem, but we had, I'm pretty sure we had a stockpile from SARS [laughs] that we still had. So we had a stockpile. And then we do have a decent relationship with our hospital, so we were able to share back and forth when we needed it" (Amy).*

As Amy was the only respiratory therapist in the community, they were included in the pandemic planning process to manage any surge capacity that may have occurred.

*"So they had me come in with the other ICU doc-...And we went through like the hazmat suit training and trying to come up with a plan of, if we expected a surge of too many people needing to be intubated, like where we would do it and how we would do it and that kind of stuff" (Amy).*

The impact of the increased use of technology to continue to have patient contact was minimal to Amy's practice, as they had been using it prior to the onset of the pandemic. Triaging patients over the telephone increased as Amy transitioned from performing in-person spirometry to providing telephone instruction on how to perform peak flow monitoring that patients could perform at home.

*"So then I started doing this a lot more with people. So it was part of my triaging process, that if I'd seen somebody before for spirometry and it didn't show what we wanted it to show, this would be my next offer, to do at-home monitoring for two weeks. So then I would just... it could be a virtual visit or an in-person visit to go through how to do it and how to keep track on the diary. And then after the two weeks, they would just drop it back off. And then I would analyze what they had written down and then do another little quick visit over the phone after to tell them how it went" (Amy).*

Post-COVID-19, Amy's practice went back to pre-COVID practice regarding in-person visits, except for procedures related to air exchanges in rooms where spirometry is performed. This required having more rooms for spirometry so that they can be ventilated between patients.

*"I guess the biggest change is still the air exchange... I don't want to say "requirement," because I don't think it's technically a requirement, but it's encouraged for various reasons. But I think that's the biggest thing that's different, is that I'm still not back to having people in my office. So having to bounce back and forth between other empty exam rooms, which I have the ability to do" (Amy).*

As a respiratory therapist with 12 years of experience, Amy works in a rural primary care setting and sees patients across the lifespan for any number of respiratory-related diseases and symptoms. As the only respiratory therapist within a 100km radius, they are responsible for providing education on respiratory diseases to both patients and other practitioners and is considered the expert in respiratory care in their community. Primary care physicians and respirologists depend on Amy for their expertise and recommendations for treatment. In addition to seeing patients in the primary care clinic, Amy liaises with health care professionals working in the acute care setting to complete hospital discharge planning for patients who are returning home and who follow-up with Amy.

Amy is valued for their knowledge, and they keep current in the management of chronic respiratory diseases. Amy's daily routine consists of reviewing patient charts in preparation for patient appointments, preparing the spirometry equipment and some administrative work. They also deliver patient care via the telephone to check-in with patients and provide any follow-up education or scheduling of future appointments.

Although Amy delivered some care via virtual means such as the telephone, the pandemic required a complete shift to virtual care until safety protocols were put in place to minimize the spread of the COVID-19 virus and protect patients and health care professionals. Amy had the necessary PPE supplies to return to some in-person care and as the only respiratory therapist in the community, was also involved in pandemic planning. Post-pandemic, Amy returned to a hybrid model of care with a combination of in-person and virtual care and increased safety procedures around air exchange in patient rooms where spirometry testing was performed.

Amy values the autonomy of their practice and feels like they are a well-respected member of the health care team. They wish that there was a better understanding of their role and responsibilities within their team, the public, and the profession of respiratory therapy so that more respiratory therapists could be hired into similar positions. Amy continues to describe and promote her position in primary care.

### 4.3 Harry

Harry has been a respiratory therapist for 15 years, having worked in acute, community and primary care. Their work in primary care has been intermittent both pre-COVID and during COVID and they are currently working in primary care in a Community Health Centre (CHC) in an urban setting. Harry describes primary care as being a system separate from the hospital/acute care setting in the sense that each setting has a different Electronic Medical Record (EMR) and specific charting templates. There is a difference in patient population served in the primary care setting than in the acute care setting, where

the majority of patients are those with COPD or asthma. Main tasks include inhaler teaching and disease management.

*“They’re predominantly asthma and COPD patients that we see. So, sometimes you might see some patients in other breathing conditions, but mostly it’s those two. The main tasks that we do are puffer education. So, there’s very little oxygen. There’s no mechanical ventilation. That’s different in the hospital. That’s different than home care...There’s very little CPAP. It’s strictly mostly asthma and COPD – so, trigger management, how to use your puffers, things like that”* (Harry).

In addition to these tasks, spirometry, smoking cessation, and pulmonary rehabilitation are also offered in the primary care clinic.

*“The other component is almost always spirometry – pre and post spirometry – either to diagnose asthma or COPD or to see trends and change in disease. The other component that a lot of respiratory therapists do is a couple other components. One is smoking cessation. So, they do the STOP program, which is providing smoking cessation for patients that currently smoke or vape. The other one is pulmonary rehabilitation”* (Harry).

Referrals can come from the patients themselves, and also come from physicians, nurse practitioners and other allied health professionals. Waitlists, while lengthy in other parts of the province, are not an issue for Harry as their patients wait at most one week to be seen by them.

#### 4.3.1 Roles and responsibilities of respiratory therapists in primary care

Harry describes a typical day as a combination of spirometry, smoking cessation, disease education and some administration.

*“For my whole role, 40% is spirometry screening, 40% is smoking cessation. So, that’s 80%. Then 5% is post-disease education. Once they have the diagnosis, then I’ll do disease-specific education. So we’re trying to increase that 10% administrative – like, going over tools and sending updates to providers and doing administrative tasks like checking emails. Then 5% is professional development and research...100% (of patients) receive breathing education. We go through (their whole) history, self-management, puffer technique, trigger management. I inquire about their smoking, if they do.”* (Harry).

In addition to the in-person patient care, there is administrative work such as checking emails as well as phone calls to patients that follow-up for smoking, followed by more spirometry.

*“A lot of the smoking patients, first visit is in-person. The rest is follow-ups by phone. So, a few phone follow-ups there. Then I see the patients, maybe an hour each patient...two spirometries this*

*morning. Then I have two smoking cessation visits...spirometry in the afternoon. Then I will do a little bit of admin stuff...sometimes I'll do teleconferences, and then I finish up the day” (Harry).*

Administrative meetings provide Harry the opportunity to teach the primary care team about new inhalers:

*“I have a meeting with the primary care team to go over puffers, the new puffers that have come out and all that” (Harry).*

#### *4.3.1.1 Perception and value of respiratory therapists in primary care*

The ability to share information about patients, medication, and COVID-19 was important for the primary care team. Harry states that having a respiratory therapist’s expertise was beneficial to the health care team in that it could allow others, such as a nurse practitioner, to focus on other things instead of the respiratory status of the patient. Being up to date on COVID-19 allowed Harry to provide education to the primary care team.

*“I was pretty up to speed on what was up to date so I could provide updates to statistics based on training that I had received as an RT on what is the latest and greatest on COVID and who’s most at risk and all that. Then I could relay that to the team. So, that was a benefit there...they’d have that extra RT expertise” (Harry).*

The chronic respiratory disease management program that Harry works in was evaluated after the pandemic:

*“So I had to come up with a pretty comprehensive argument or a case as to why RTs are useful in primary care. So, what I did say to the evaluator is that 100% of the patients that I see benefit, and the reason is either smoking cessation, spirometry screening, or education. The reason is because none of those...the nurse practitioners or physicians, necessarily have the time to go through all the details of trigger management” (Harry).*

Harry stated that the physician or nurse practitioner wouldn’t know to discuss respiratory disease triggers such as an allergic reaction to a dog or cat or ask what type of bedding a patient uses. The respiratory therapists ask about these potential triggers, as well as provide education about inhaled medications and use subtle ways to provide smoking cessation education.

*“They (nurse practitioners or physicians) are not going to go through all that detail. Then sometimes not even the puffer. So, I check the puffers, and they’re taking it the wrong way, maybe 80% just for the Ventolin. So that helps with disease management. Then smoking cessation...there are certain*

*tricks of the trade that I give that are harm reduction approaches for smokers, and I will go through the smoking. So every single patient benefits” (Harry).*

Harry also states that while some health care practitioners tell a patient to *“Quit smoking, or that’s it”*, there are other techniques that respiratory therapists use that help with the messaging about smoking such as motivational interviewing. He says that patient education in addition to spirometry screening can make the difference between a patient’s respiratory disease being controlled or not controlled, and that is ultimately what the health care system wants.

*“That’s all the system is looking for is, “Is their asthma and their COPD controlled? Is their CPAP in control, or is it uncontrolled?” If it’s controlled, that means it’s less burden on the system. So, that’s really the method of us” (Harry).*

#### *4.3.1.2 Job satisfaction of respiratory therapists in primary care*

Harry did not specifically discuss job satisfaction in primary care, although they did state that they feel that their role is appreciated by the interprofessional team, and they can make a difference in the lives of patients with chronic respiratory disease.

#### *4.3.2 Impact of COVID-19 on respiratory therapy practice*

Harry was not working in primary care at the beginning of the COVID-19 pandemic, but states that the role of the respiratory therapists in these positions was hit hard. Spirometry was discontinued, and that comprised 40% of the respiratory therapist’s job.

*“Spirometry...we couldn’t do it. Smoking cessation, it’s a high contact job. Let’s say for the (nicotine replacement) patches, I have to grab the patches and leave it at the front (of the office). So, we saw very few patients in-person. So, our volume went down significantly. It was completely empty” (Harry).*

The pandemic resulted in a cessation of spirometry for Harry, but they were able to pivot to providing care remotely and patients would come into the clinic to pick up their smoking cessation medication. Smoking cessation education was done over the phone. Patient supplies were sanitized and put into a bag for them to come to the clinic to pick-up.

*“There was some remote stuff done, and you have to wipe down...if you gave nicotine, you have to wipe it down completely, put it in a bag, use hand sanitizer...use gloves, use mask, and patient had to come in...it was very precautionary. The program went from 100% usage to maybe 10% or 15%...there was some remote that was done, but, again, remote is tricky because you can’t do spirometry remote. So there’s 40%, and patients were not coming in...very few” (Harry).*

There was no professional development for clinic staff at this time, administration was at a minimum, and the respiratory therapist would only see a few patients during the week.

*“There was no professional development because everything was on hold. There was little administration. So, it was really just stopped, and a few patients were doing education. So, we were lucky if we had two or three patients a week”* (Harry).

Overall, Harry stated that his services were reduced during the pandemic. To accommodate a few patients coming into the clinic, PPE had to be used. There were some difficulties with this, although Harry does not state what the specific issues were.

*“Everything went dormant...and then there was some struggles with PPE. There (were) some patients that were seen in-person, as long as they were screened and had a negative PCR test – they were definitely confirmed negative... (we had an air purifier) and PPE. We did all precautions, but the program itself suffered in volume”* (Harry).

Once patients were vaccinated and there was adequate PPE, they could come into the clinic for spirometry; however, there was fear in both patients and staff around contracting COVID-19.

*“When vaccination was rolled out where people were being vaccinated and then the centres had better control of PPE...we had a better sense of the danger; that it was not so much of a danger; that’s when spirometry slowly started coming back...At the beginning of COVID it was a complete terror, what was going on, and there was lack of PPE everywhere. Everybody was scared of going to work, and everybody was scared of getting COVID...Spirometry started coming back slowly...There was only pre (bronchodilator), so that’s a limitation there...and then we started doing more and more, slowly”* (Harry).

Infection control procedures consisted of using an air purifier in patient rooms and waiting for a few hours between patients. The time between patients slowly decreased. The clinic continues to use the air purifier, and the respiratory therapists still wear gloves and either a surgical or N95 mask.

*“We had a spirometry, and then we waited...an hour. Then it went down to half an hour, 20 minutes, and then...we still do five minutes and full blast. The last year, (spirometry) was really accelerated”* (Harry).

Once the COVID-19 restrictions were lifted, Harry states that COVID no longer had an impact on their roles and responsibilities, and everyone became more comfortable with a lower risk of contracting the virus.

*“The patients, the centre, and the clinicians became more comfortable with the risk level being lower and lower as more people got vaccinated and as centres had more control, and as the cases were going down people were getting more confident. So, as the control was going up and the things were going down, then the volume of patients coming in was proportional to that. So, it was a gradual thing to the point where now it seems like it’s completely normal” (Harry).*

Harry is a respiratory therapist with 15 years of experience across community, acute care and primary care settings, and works in a community health centre in an urban primary care setting with patients who have chronic respiratory diseases such as COPD and asthma. Their role and responsibilities include pre- and post-bronchodilator spirometry testing, smoking cessation, inhaler teaching, trigger management and pulmonary rehabilitation.

Harry’s workday is primarily spirometry (40%) and smoking cessation (40%), with additional responsibilities in providing patient education, administrative duties, and professional development and research. Each initial patient visit for smoking cessation education is in-person and lasts one hour. Subsequent appointments for smoking cessation are done over the phone. Harry performs spirometry throughout the day; they have two appointments for smoking cessation education each day and some days they do teleconferences and administration. Meetings with the primary care team provide Harry the opportunity to teach colleagues about new inhalers and other respiratory-related information related to disease management.

During the pandemic, spirometry testing was stopped due to public health measures and Harry pivoted to remote care, conducting smoking cessation over the phone and preparing equipment for patient pick-up at the clinic. Once the social distancing measures were reduced, Harry resumed spirometry testing; however, some patients remained cautious due to fear of the COVID-19 virus.

Harry believes that their role in primary care makes an impact on the health care system, and they state that providing treatment and education to patients with chronic respiratory disease can make a significant difference between a patient maintaining control of their condition or having an exacerbation which may require hospitalization. Harry stated that they have a clearly defined role working in primary care providing education and assessments to patients with chronic respiratory disease. They pivoted to remote care during the COVID-19 pandemic, and they felt that their expertise in respiratory disease makes them the ideal professional to provide care to these patients in this setting.

In contrast to Amy, Harry works in an urban setting but has a similar amount of experience as a respiratory therapist at 15 years. Both Amy and Harry experienced a shutdown of their primary care clinics at the start of the pandemic, and both pivoted to providing remote/virtual care. After spirometry

testing was resumed, Amy had sufficient PPE supplies, but Harry struggled getting PPE. Whereas Amy feels valued for her expertise and role in the primary care setting, Harry had to prove the value of respiratory therapists in primary care to management. Both Amy and Harry felt that their expertise in respiratory diseases and their management was beneficial to the health care team.

#### 4.4 John

John has been a respiratory therapist for 13 years, having worked in both acute and primary care settings, and currently works in primary care in a rural setting. They have a wide range of experience in providing care to both the adult and pediatric/neonatal patient population. Their experience working as the only respiratory therapist in a rural hospital with patients who have a variety of conditions made them appreciate their more stable role in a primary care setting.

*“Especially being in a rural hospital, you didn’t know what you were walking into at that night shift. So you can have a premature baby that is delivered in the hallway and automobile accident that’s coming into emerg(ency) and if you’re the only one there, you have to be everywhere all at once. Whereas but then after you have like a patient, they are gone...you’ve treated them, they are discharged (from) the hospital, you never see them again...whereas (in) primary care, I am able to follow my patient and their disease processes” (John).*

##### 4.4.1 Roles and responsibilities of respiratory therapists in primary care

In their role in primary care, John provides spirometry, patient education, and chronic disease management of COPD and asthma to patients ranging from six years old and up, and 60 – 75% of their patients have COPD; 20% of their patients have asthma, and the other category of patients are those with a cough that is not yet diagnosed. In addition to John, there is one other respiratory therapist and between them they see patients at sixteen different sites. This can provide challenges as patients must wait to be seen by a respiratory therapist:

*“There are challenges when you’re only there one day a week or umm or so you find that you’re at Site A for Monday and Tuesday but Site B for Wednesday and Thursday. If Site A is really backed up, I can have a four-month waitlist” (John).*

It is a busy position with several physicians referring their patients to the respiratory therapists:

*“And I get worked up quite a bit whereas the site that has only 4 doctors, it’s a smaller site and but they use me for their more difficult cases. You know what I mean like so I, I have more difficult cases with my smaller sites because I work more closely with the doctors. Do you know what I mean we can like*

*make a kind of plan for patient whereas when you have 19 doctors, you have 19 doctors sending you 19 doctors worth of patients. You're like, you're busy, busy" (John).*

John describes their role as follows:

*"My role is to provide the spirometry for diagnosis...once the diagnosis comes through, the patient comes to me for education on their disease process umm and medications and umm follow up as needed, that sort of thing. Or if they've had an exacerbation, I get post-exacerbation follow-ups, action plans. We do a lot of puffer teaching" (John).*

Professional development with additional certification is not required, but it is encouraged:

*"It's not a requirement but it's strongly encouraged to have your CRE, your certified respiratory education program underneath you umm so everybody on higher rank ahh you either have to have it or make arrangements to get that designation" (John).*

#### *4.4.1.1 Value of respiratory therapists in primary care*

Despite all the changes to patient care that occurred in the primary care setting during the pandemic, and the redeployment of some respiratory therapists to acute care, John felt that they were valued and needed to provide chronic respiratory disease management.

*"I always felt that we were valued, right? That there was any fuss with the chronic disease management, with the COPD as and asthma but I think that with this umm, with this covid, we are an untapped resource. Like in, I think, I know that my organisation has not fully realised that, yes, the potential that they have with our knowledge, but with our role umm and I feel like we've had to fight just to get back to what we were prior (to the pandemic)" (John).*

The pandemic also provided respiratory therapists with the opportunity to work to a fuller scope of practice by administering the COVID-19 vaccine as the province was trying to keep vaccine clinics open. However, once the pandemic was over, the province eliminated this responsibility from respiratory therapists:

*"There was a mad scramble because of our knowledge in our role that our college allows us to give injections... So when the vaccine clinics were open and they were scrambling for people, we told them that we can do this. Let us do this. So then they had to write all of these policies and procedures to allow us to this and now they are taking those away from us" (John).*

Despite the Ontario government making changes to remove vaccinations from the respiratory therapists' duties, RTs are still being allowed to perform nasopharyngeal swabs in case it is needed for the future:

*“They (the government) will keep that (nasopharyngeal swabbing) in our policy in case it happens again in the future but you’re gonna allow us to swab infected people but you’re not going to allow us to vaccinate, to prevent infected people” (John).*

#### 4.4.1.2 Job satisfaction of respiratory therapists in primary care

With their experience working in acute and primary care, job satisfaction is a big factor in John's continuing to work in primary care where the work is Monday to Friday. This role enables them to develop relationships with their patients and continue to provide care, whereas working in acute care means that you might only see a patient once, and there is no follow-up.

*“I like the stability of primary care. I like the Monday to Friday in primary care. The thing that with the hospital is that you especially being in a rural hospital, you didn't know what you were walking into at that shift right. So you can have a premature baby that is delivered in the hallway and automobile accident that's coming into emerg and if you're the only one there, you have to be everywhere all at once. Umm whereas but then but then after you have like a patient, they are gone right. You've, you've treated them, they are discharged in the hospital, you never see them again right whereas primary care, I am able to follow my patient and their disease processes. I am able to see them at their best days and I am able to see them on their worst days and I am able just to keep that contact and follow up with them” (John).*

John also states that they like *“being able to be part of their (patients) journey”*, where the relationship and the patient's trust for them is developed over time:

*“...it's lovely the camaraderie and then being able to you know to have them trust you as well” (John).*

There is a connection between the respiratory therapist and the patients in primary care that John values and he continues to build that connection and therapeutic relationship with each patient interaction.

#### 4.4.2 Impact of COVID-19 on respiratory therapy practice

At the beginning of the COVID-19 pandemic, John was required to discontinue spirometry. There was concern about the impact on the respiratory therapists when patients performed the test:

*“We immediately stopped spirometry, immediately. Like I remember distinctly we had one more patient and my supervisor called me and said no more. We can't afford to have patients blowing in your face when we don't know what's happening uhh and then our whole organization shut down for about a*

*week until they kind of re-grouped and figured out what the plan was umm then they started the umm Covid assessment” (John).*

During the time that the primary care clinic was closed, John was redeployed to a COVID-19 testing site. In addition to performing COVID-19 tests, John was still able to utilize his skills as a respiratory therapist:

*“I got asked a lot of times to discuss puffers... if patients were really struggling umm they were recruiting the respiratory therapist over to do the respiratory assessments on them. If they had puffers, do proper puffer teaching you know to make sure that their lungs are protected, go through some education and that was kind of like on an as-needed basis but our role there was for testing” (John).*

If other staff working at the COVID-19 testing site saw that if patients were in need of education, the respiratory therapist would be asked to provide education on inhalers use and how to take care of their underlying respiratory condition while they had COVID-19.

There were challenges involving the lack of personal protective equipment (PPE), and underlying concerns about being redeployed to acute care. John states that this was a “*very scary time*” for them as they had not worked in a hospital setting for five years:

*“I remember it was very scary, there is a lot of unknown, there was a lot of you know there is PPE issues, there was umm you know question about whether or not we were gonna get redeployed to hospitals? If you had hospital experience, you were put on a list and you could be called in, it was a very scary time” (John).*

The lockdowns were concerning to John, as they lived by themselves and had family close by that they couldn't see during the lockdowns. Things were made worse for John during this time as their daughter was expecting a child and John knew that they couldn't be there for her.

*“I lived by myself. My daughter lived about 15 mins away, she was pregnant as well and then all of the lockdowns and like she would call me and be like...my older grandson (name) has a cough and a sore throat, it's just beside herself and I was just like yeah I can't help you because nobody can leave their house but if I felt you're, if I felt he was in danger... I would direct you where to go. But kids are allowed to be sick so let's just wait it out and see what happens right and she had her baby...So she had it delivered with her partner, that's it, nobody else. She is like I wanted my (parent) and my (parent) couldn't even be there. Like, you want me in there when I was just laying in bed, in the, in the assessment centre with all the potential Covid people, you don't want me in there” (John).*

During the pandemic, John felt the public's attitude towards healthcare providers change from "hero to zero". At the beginning of the pandemic, the public was praising healthcare workers for their courage and strength in continuing to provide care, but as the pandemic progressed, people became fearful of them due to their exposure to the COVID-19 virus. John describes a situation where they prepared a meal for a friend, only to find out that they had thrown it into the garbage:

*"At the beginning, you were hero, right? People really were like oh I am really impressed... I was terrified every single day, but then as it got on like I would cook, I cooked, I remember I cooked a desert for my friend and I never thought and like I cooked you a dessert, it's beautiful, come eat it and she grabbed it and was like oh thank you very much and then come to find out it has been thrown into the garbage because of where I worked"* (John).

John describes how people started thinking that COVID-19 wasn't real and were questioning the vaccine. It was a very emotional time for John:

*"And it was like I am no longer (a) hero, I am starting to get a little emotional (cries). And it was just like, I am no longer a hero and then a lot of people in my, in my life I guess are like naysayers. Covid's not real and you know, I am not getting any vaccine and it's like but two months ago you were so proud of me for doing this and now I am, now I am, now it's all conspiracy and I am wasting my time, and nobody believes in Covid, covid's not real. It's, do you know what I mean? In the beginning, you know everybody is banging their pots and pans because these heroes are doing this work (tears up) and then a year later people are like screaming at you because you want them to get the vaccine"* (John).

In addition to the decline in public opinion about the good that health care workers were doing, John also felt that there was a lack of support by the provincial government acknowledging their work during this time:

*"And I feel like the Ontario government umm really failed respiratory therapists. I think the Ontario government umm handed nurses \$5000 for being a nurse in the, during the pandemic...And the respiratory therapists got nothing...And I was just like this is ridiculous and yet we're the ones running your ventilators and we're the ones breathing for your patients. It's not just nurses that you know that are doing this work, it's all allied health...And all of us should get some sort of recognition but we didn't, we didn't get anything"* (John).

Despite this lack of acknowledgement by the government of all health care providers, John states that they would do the work again if there was another pandemic.

*“I would do it again. I will absolutely do it all over again if I had to but just to be continuously overlooked the way that our Ontario government overlooked us during this time is just so heartbreaking”* (John).

John was ready to provide care to patients during the pandemic without hesitation:

*“I didn’t hesitate. Like they didn’t, they weren’t even asking for volunteers and I said well I can’t work, I can’t do my job because nobody knows what’s happening but if you need me, I will go in there and they scooped me right up and I said so here I am and you know I didn’t get a second thought and I also was away from my family and isolated and away from my friends and having to, to do umm this very scary work in this very scary time”* (John).

Once their redeployment to acute care ended and John returned to their work in primary care, work was done over the phone with patients. This resulted in increased time before the patients were properly diagnosed and treated by the respiratory therapist:

*“Everything was done over the phone and then patients were triaged based on umm whether or not they needed umm updated testing and if that was the case then updated testing was done in the hospital and then the results were sent back to me for a review umm and then, so it really extended the amount of time that a patient had from being assessed, to diagnosed, to treated. Umm because with me in office, I can assess them, I can test them and I can get them their treatment within the same day”* (John).

It was challenging to triage patients over the phone:

*“We would have to triage, is this patient, umm, aah, ahh, smoker or is this patient got a cold and has a cough? Umm or has this patient been in hospital with pneumonia and now they have symptoms of COPD, that sort of thing? Umm, so it really extended our treatment for these patients by a long time”* (John).

The impact of remote care was an increase in wait times as spirometry was only being done in the acute care setting. John primarily used the telephone to connect with patients, but also used video calls through their electronic medical records (EMR) program or Zoom.

*“Mostly, 99% of it was telephone call but we did have access to video calling through the EMR”* (John).

Another challenge to providing remote care during the pandemic was the internet stability, which could impact the care that John was providing to their patients:

*“If the internet goes down, so does your whole day umm and Rogers went down there for 24 hours and I think the whole world stopped for a little bit” (John).*

John struggled with providing patient care over the phone, as they did not feel prepared to deliver care via this means, and it was hard for them to assess patients when they could not see them in person.

*“Not being able to put my hands on the patients was a real struggle for me, right because people like to downplay Oh I am not sick at all” (John).*

However, John adapted their care with the use of internet resources for patients and would *“find internet resources for all these patients, internet like YouTube videos on puffers and how to use your puffers and umm internet’s resources for COPD” (John).*

Without being able to perform spirometry or see patients in person, John felt that if patients had been seen for assessment and spirometry, their lung function might not have decreased as much as it had during the pandemic.

*“I did miss it, I did miss it because a lot of my patients, I would test them every six months whereas I didn’t feel comfortable taking up a spot in the hospital for that kind of follow-up, do you know what I mean? Umm and then when and I found that now that my patients are coming back to me that they have lost like 10% values in their FEV1...They hadn’t had a test done in 3 years, 4 years even. Right, so what happened they’ve had pneumonia a couple of times or had exacerbation a couple of times...being able to have that data maybe would have prevented them from losing those volumes” (John).*

Once public health measures were lifted, spirometry was restarted in John’s primary care setting, but there was uncertainty about the procedures surrounding it:

*“So, we were able to start spirometry in October, so we’ve only been doing it (coughs) for about 5 months umm but there was a lot, even now there is still a lot of questioning about it, right? Are you allowed to have spirometry in a carpeted room? I don’t know (laughs). Nobody knows, right? Aah, whereas before it wasn’t a big deal, umm so now our, our organisation has reverted back to umm we’ve always, the practitioners have always had to mask but our patients are now required to mask” (John).*

Post-COVID-19 procedures now include asking patients if they are symptomatic or have been infected with the virus, and they assume that all patients have had COVID-19:

*“Now it’s like, have you had a COVID infection? You have? Do you have long-COVID? How long have your symptoms been going on? Has this been going on since you had a COVID infection? Is*

*this new? Are you fully vaccinated for COVID? Like so we ask a lot more ahh infectious-type questions I guess, right, like now we have to assume everybody has COVID” (John).*

John’s post-COVID-19 practice still includes virtual care as part of a hybrid care model, where they will connect with patients over the phone to check in after a change in their medications instead of coming into the office.

*“I do hybrid right now umm so I see them in person umm every 6 months to a year, like if they, if they are well controlled I see them in a year umm or if, if they, but I will touch base with them over the phone if I had done any medication changes just to see how is the new medication doing, right are you okay, whereas before I would have them come back into the office after 2 months” (John).*

PPE measures are still in place where N95 masks are worn by the respiratory therapists when they perform spirometry, but surgical masks are worn for all patient encounters that don’t involve spirometry. The air had to be filtered between patients, which took three hours, and John was responsible for wiping down the rooms after each patient. This resulted in a reduction in the number of patients that John could see in a day:

*“I had 5 different rooms. So, I would have a patient in room 1 and then I would wipe it down and then that room couldn’t be used for another 3 hours... And my next patient would have to go in room no 2 and I would do testing there and wipe everything down and then that room couldn’t be used for another 3 hours and, and then the third room and then back to the first room and the second room” (John).*

Overall, John values their role in primary care and for the most part, also feels valued by the interprofessional team. The pandemic required John to leave their primary care practice when they were redeployed to a COVID-19 testing and vaccination site, but they were able to return to their primary care role to provide care remotely via virtual methods. During the pandemic, John felt the public’s opinion of health care workers change from “hero to zero” as fears about the COVID-19 virus and vaccination grew. Despite this, John states that they would continue doing their work in primary care and would go through redeployment again if required.

John has 13 years of experience as a respiratory therapist and works in a rural primary care setting providing chronic respiratory disease management to patients ranging from six years old and up. 75% of patients have COPD, 20% of patients have asthma, and 5% have a cough that is not yet diagnosed. John works with another respiratory therapist on the primary care team to provide care across sixteen sites within the community health centre. Their typical day consists of spirometry testing, chronic respiratory disease management and education, and inhaler teaching. Several physicians refer to John in

the primary care setting and they can be very busy with many referrals for their services. John appreciates the patient-centred approach to care in the primary care setting, where they can develop long-term relationships with patients which allow them to monitor disease progression and offer ongoing support, which they find fulfilling.

The onset of the COVID-19 pandemic brought significant changes to John's practice in the primary care setting when spirometry testing was stopped as per public health measures to reduce the spread of the virus. This discontinuation of services and stoppage of John's work in primary care resulted in them being redeployed to a COVID-19 testing site where they continued to use their respiratory therapy skills providing education on how to use inhalers and manage respiratory symptoms. Anxiety was a contributing factor to John's stress of redeployment due to the shortages of PPE and the possibility of being redeployed to acute care. Post-pandemic, John resumed spirometry testing with new safety protocols in place regarding patient contact and air quality. They also adapted to providing care through a hybrid model of in-person and virtual care. There were challenges in providing virtual care, but John was adaptable in supporting patients using online education resources for patients to access on their own.

The pandemic also brought a change in the public's perception of respiratory therapists, as John reported that they went from "hero to zero" in terms of first being applauded for their commitment to providing care during this difficult time then facing fear and distrust as misinformation about the virus spread. In addition, John expressed frustration with the Ontario government for not recognizing the efforts of respiratory therapists during the pandemic compared to other health professionals such as nurses; however, John remains committed to the profession and stated that they would continue to provide respiratory therapy in any capacity during another pandemic. Overall, John demonstrated commitment to their work as a respiratory therapist in whatever capacity is required and feels that their work in primary care is valued by their patients and colleagues.

Like Amy, John works in a rural primary care setting and has a similar number of years of experience as a respiratory therapist as both Amy and Harry. Their roles are similar, except John does not provide smoking cessation interventions. At the beginning of the pandemic John also experienced a shutdown of primary care services, but they were redeployed to a COVID-19 testing site for a period of time and then returned to the primary care clinic to provide care via virtual means. Both Harry and John had difficulty accessing sufficient PPE supplies during the pandemic and John continues to use some PPE post-pandemic. Both Amy and John feel valued by the interprofessional primary care team and both value and enjoy their roles in this setting.

## 4.5 Sam

Sam is a respiratory therapist who works in a primary care setting in rural Ontario. They have been a respiratory therapist since 2001 and have worked in acute care and community care (home oxygen company). They have been working in primary care at a Community Health Centre (CHC) for the past twelve years where they work in a pulmonary rehabilitation program, perform spirometry, smoking cessation and patient education. Their work is spread throughout five different locations, and patient referrals come from various health care providers.

*“Most of my referrals come internally – so, from our internal physicians and nurse practitioners. We also accept from external. So, we have two respirologists in (community) that refer mainly to us... We also take referrals from... a geriatric emergency nurse at our local emergency (department)” (Sam).*

Sam states that the community health centre is quite busy with referrals and their position is increasing from part-time to full-time because of additional funding to the centre. Patients can also self-refer to the primary care clinic, although physician approval is required for the patient to participate in the exercise portion of the pulmonary rehabilitation program. Physician approval is easy to obtain and there is minimal delay.

*“We do take self-referrals as well. With the self-referrals, we do try to go after their main provider – like, their primary care provider – for a referral just to get some clearance for the exercise piece. So, I’ve never had a problem with anybody getting a referral. So, a patient would come in self-referred. I’d get their permission to go talk to their primary care provider. If they’re part of the CHC, it’s super easy. If they’re external, then it’s usually just a phone call or a fax, and the form is usually back pretty quick. So, I’ve never had a problem getting the referral” (Sam).*

### 4.5.1 Roles and responsibilities of respiratory therapists in primary care

The main responsibilities of the respiratory therapists at the CHC include the provision of education for both patients and providers. Sam provides guidance to the physicians on how to interpret spirometry and pulmonary function test results, makes recommendations on what inhaled medications to prescribe, and provides general support to patients and families.

*“(The) main part of my job in primary care is education – so, provide [inaudible 0:06:29] likewise. So, as much as we try to educate our providers on reading spirometry PFTs, they just need that support. So, my door is always open. I have people in and out of my office all day just wanting some guidance on what to do with this person. “This is what’s going on. What do I put them on puffer-wise?” Smoking cessation, obviously. “They’ve been on this inhaler for this many months. It’s not making a difference. What do I do?” So, I’m a CRA as well, so we do all the inhaler education as well. I’m a*

*resource, I guess, provider. Patients call me directly, and we have lots of interesting conversations with respiratory concerns as well, a lot of family support. So, spouse isn't [doing 0:07:23] well, the spouse calls for some support. "Kid's asthma's flared up. What do I do?" It's a lot of support, a lot of education"* (Sam).

Sam states that compared to the hospital, working in primary care is more relaxed, and there are no emergent situations. They do home visits if patients are not able to attend the clinic.

*"So, compared to the hospital, it's a little bit more low key. It's no emergent situations. Compared to the home care stuff I was doing before, I'm not on the road as much. Now, I do do home visits. So, if people can't come in to see us, sometimes it's nice to have a set of eyes. So, I have a little bit more flexibility in my schedule than a provider would, so I would get sent out to do respiratory assessment if there's any concerns, but I'm not on the road as much"* (Sam).

Additional certification was required to work in primary care, and Sam is a Certified Respiratory Educator (CRE) and a Certified Tobacco Educator (CTE).

#### *4.5.1.1 Value of respiratory therapists in primary care*

After the pandemic when things returned to more of a pre-pandemic state, Sam felt that their role in primary care was more utilized. Their role hasn't changed, but it was good to return to in-person care.

*"I find that my role there is more utilized... My role at the health centre hasn't changed. I do appreciate the face-to-face. You learn that you can do a lot more face-to-face over phone or over messaging, especially with the older population that I deal with, right? They need that face-to-face support"* (Sam).

#### *4.5.1.2 Job satisfaction of respiratory therapists in primary care*

Sam enjoys their work in primary care with a schedule of weekdays with hours of 0800 – 1600 hrs and appreciates the work-life balance that working at the CHC offers. They have flexibility in their work schedule in that they can leave the office and do a home visit if patients are not able to make it into the clinic:

*"I do home visits...I have a little bit more flexibility in my schedule...so, that's kind of a nice perk, but it's also nice to get to see people in their own environment and get the full picture of what actually is going on"* (Sam).

Throughout the shifting work roles during the COVID-19 pandemic, Sam was satisfied with their role in primary care:

*“I was always happy. I was glad I wasn’t a hospital RT. It made me really appreciate my role. I am very fortunate. We have very, very good management who is... like, their communication is incredible. I can’t say enough about our management” (Sam).*

Management was in support of the adaptations that Sam made to their role to accommodate the shutdown of in-person care and the shift to virtual care.

#### 4.5.2 Impact of COVID-19 on respiratory therapy practice

When the COVID-19 pandemic started in 2020, Sam’s work in the CHC became virtual, and pulmonary rehabilitation continued this way until they were redeployed to acute care. There were challenges in providing virtual care for a senior population who wasn’t familiar with the technology, and it was difficult for patients to give and receive support from the other participants in the virtual pulmonary rehabilitation program:

*“Everything went virtual. So, running pulmonary rehab is the main part of my job at that time, main population being maybe 70 years old plus. So, to go virtual with that population, it was interesting. We went Zoom to do exercises from home. So, some of our people couldn’t understand the camera. So, we’d have people up like this. We’d have people that we couldn’t see. It was a huge learning curve for our clients, and to exercise at home was different. They don’t get the support from each other that they typically get. So, we went from a group of about 25 people twice a week, exercising, getting to know each other, monitoring each other, “What’s new with the kids,” to going online. It’s not quite the same trying to catch up with everybody in a Zoom. Then just after we got all that set up, I was redeployed to the hospital” (Sam).*

During their redeployment, Sam was replaced at the CHC by a nurse who continued the pulmonary rehabilitation program and provided smoking cessation. After not having worked in acute care for 18 years, Sam felt it difficult to perform the tasks that were required, so they were redeployed to a COVID-19 testing site. They continue to spend one day per week at the testing site, in addition to their role at the CHC.

*“I hadn’t been in a hospital for 18 years. So, to go from this to that, it was unbelievable. So, I lasted less than two weeks. I said, “I can’t do this. This wasn’t made for me.” Then in November of 2020, I was redeployed to our COVID assessment centre – so, swabbing, assessing, and that’s actually where I am today. So, we’re still open. We’re very, very slow, thank God. So, I’ve been here since November of 2020, one day a week” (Sam).*

In addition to providing virtual care via Zoom or telephone during the pandemic, Sam would also see patients in the community, but did not enter their homes. Some patients stopped participating in the virtual pulmonary rehabilitation program, and when in-person programming resumed, some patients remained in the virtual program:

*“We ended up doing a few porch visits to try and do some education. So, we were laptops, phones, whatever out on the porch, and we would do what we could that way. We lost a few of them. A few of them didn’t have any way of using virtual. So, as much as we could do on the phone, we were doing on the phone, but you can’t lead exercise to that population over the phone. So, a lot of them unfortunately just stop participating. We did lose half of our group during COVID... When we were able to bring people back in-person, we brought in the people that didn’t have virtual access, and then we continued to offer our program via Zoom at the same time. So, we had people on the computer, people live, in-person. Actually, we’ve had to maintain that just because of transportation issues and things like that. Now that we know we can do it... It’s something that ended up lasting. So, we’re still doing the Zoom/in-person for pulmonary rehab” (Sam).*

There were challenges in providing virtual care in a rural community including transportation for patients, and an unreliable internet connection, but the respiratory therapists and other staff at the CHC were adaptable in maintaining some patients and continuing to receive referrals. Sam is hopeful that the patients who lost touch with the clinic during the pandemic will be able to reconnect with the services provided by the CHC.

*“It’s just the clients from a couple years ago that you know are still out there. They still need the support, and as much as a phone call so often helps, it’s just not the same as what they were getting before. So, it is kind of disappointing, but hopefully we’ll get them back” (Sam).*

Challenges to providing care post-COVID-19 include managing patients who are against vaccination or who don’t believe that COVID-19 is real, combined with patients who continue to receive vaccinations. Some patients continue to wear a mask, while others refused to wear masks even at the peak of the pandemic:

*“We still have those anti-vaxxers, anti-maskers, “COVID isn’t real.” Then we have the people that are over-the-top scared of COVID. So, yeah, we want them to discuss but not these extreme views. We have one man that is just extreme anti-vax, anti-mask, anti-everything. Then we have a bunch of them that are still getting their fifth, sixth booster as they can... some of them will not take their mask off. They’re just so afraid. Then other ones wouldn’t wear masks all of COVID” (Sam).*

Spirometry was discontinued during the pandemic for nine months, and once the CHC received direction about what services they could provide, Sam restarted spirometry with full support from management. The challenge in performing spirometry once it was restarted was the time that was required to allow air exchange and cleaning of rooms between patients:

*“My management was in full support either way. If I was comfortable doing it, they were okay with restarting it. So, as soon as we were just kind of getting some direction ahead... (Community) Health was supporting us a little bit. So, once we discussed with them and what I would be doing... The big thing was rooms. After we did one spirometry, they wanted the room to sit empty for three hours after. So, our health centre at that time was still fairly [inaudible 0:20:44] so I would go from one exam to another to another exam room. I had lots of exam rooms to pick from. So, basically, I would do one. We would shut that room down, air filters, and I would move to another room. So, every three hours I was allowed to go back in that first room. So, that was a bit of a process. Then once we were kind of more open to the public and that rule was still in effect, then I kind of slowed down because I only had so many rooms to use. So, just depended on my room availability at that time” (Sam).*

Sam was responsible for cleaning the rooms and could only see three patients each day for spirometry.

Once the pandemic restrictions were lifted, patient education got easier to do, and patients seem to be in better shape and more accountable when they are seen in person.

*“With patients, the education is a lot easier. Trying to teach an inhaler virtually or over the phone is a challenge. In-person, it just seems to go a lot smoother. Provider-wise too, I wasn’t in touch with as many providers. It’s different to communicate through messaging over EMR versus in-person. Our group is in a lot better shape as well. Our pulmonary rehab guys, when they’re on a treadmill for 20 minutes, half an hour, they’re just in better shape, right? But they’re not doing that at home. So, just overall, our pulmonary rehab groups have been a lot better now that we’re back in-person. They’re not hospitalized as often. They seem to be better controlled. My smokers seem to be a lot more accountable again now that we’re back in person, face-to-face. I find they’re more honest when they’re face-to-face” (Sam).*

Overall, Sam didn’t feel that respiratory therapists working in primary care were utilized as much as those working in acute care during the pandemic.

*“I don’t think I was utilized as much as other RTs during COVID, which was fine. I think a hospital RT obviously was very needed. Home oxygen, very needed. Primary care, I don’t think we were used as much, which, again, totally fine, until they figured out that I could swab, and then I got sent to*

*COVID centre. But the first probably six months of COVID I was not utilized very much. Other than a couple hours a day for pulmonary rehab, I didn't have much of a role" (Sam).*

Sam's role in primary care was well-defined prior to the COVID-19 pandemic. There was some uncertainty about their role during the pandemic when they were initially redeployed to acute care and then moved to a COVID-19 testing site. Post-pandemic, Sam returned to their primary care role at the CHC where they felt more valued for their knowledge and expertise in managing patients with chronic respiratory disease.

Sam has 23 years of experience as a respiratory therapist and works in a rural primary care setting in a community health centre where they provide spirometry testing, smoking cessation education, chronic disease management and pulmonary rehabilitation. They work across five different locations and receive patient referrals from physicians and other health professionals. Patients can also self-refer to the respiratory therapist. Sam's main responsibility is to provide education to patients and health care providers. They assist physicians with the interpretation and diagnosis of spirometry test results and make recommendations on what inhaled medications to prescribe. In addition to in-person care, Sam also provides telephone consultations with patients and family members who have questions about managing symptoms related to chronic respiratory disease. Home visits are also provided to those patients who are unable to attend the clinic.

During the COVID-19 pandemic, Sam's role transitioned to virtual care, although this was difficult for older patients who struggled with technology. The pulmonary rehabilitation which Sam oversaw also moved to a virtual format, which was challenging for patient's as well as the program's sense of community. There were additional challenges with internet connections in a rural area. Sam was redeployed to the acute care setting for a time before being moved to a COVID-19 testing site, where they continued to work one day per week.

Post-pandemic, Sam was able to return to the community health centre to resume their role delivering in-person care. Sam expressed satisfaction in their work in primary care and noted that patients seem to be more accountable to their treatment plan when they are seen in person. Challenges post-pandemic include some ongoing patient fear about coming into the clinic due to concerns about contracting COVID-19, and other patients who don't believe that COVID is real.

Overall, Sam feels that they are supported by management to perform their role, although they don't feel that respiratory therapists were utilized to the same extent as those who work in acute care during the pandemic. Sam enjoys their Monday-Friday routine and enjoys the work-life balance that

comes with working in the primary care setting. They feel like their role is well-defined and they are valued for their knowledge in managing chronic respiratory diseases.

Of the four respiratory therapists that were interviewed for this study, Sam has the most experience as a respiratory therapist with 23 years of experience. Like Amy and John, Sam also works in a rural setting. Both John and Sam stated that they find the primary care setting to be more relaxed compared to working in acute care. All four respiratory therapists experienced a shutdown of their respective primary care clinics and like John, Sam was also redeployed to a COVID-19 testing site. Amy, John, and Sam all feel underutilized in their primary care positions but valued for their expertise in chronic respiratory disease management.

#### 4.6 Chapter Summary

This chapter presented the findings from interviews that were conducted virtually with four respiratory therapists working in primary care in Ontario, Canada after the COVID-19 pandemic. Harry works in an urban setting, and Amy, John and Sam each work in a rural setting. The interviews described the categorical aggregates that focused on the roles and responsibilities of respiratory therapists working in primary care, two subcategories which described role influencers, and the impact of COVID-19 on these roles and responsibilities. The results defined the roles of respiratory therapists and described specific tasks that they perform as part of the interprofessional health care team in primary care. The COVID-19 pandemic resulted in a partial or complete shut-down of primary care services for a period while the government and employers made decisions on how the work of primary care health care practitioners was delivered. Adaptations to providing in-person care resulted in the move to virtual care by means of telephone contact or videoconferencing with patients. Respiratory therapists feel valued and supported by their employers and colleagues working in primary care, although the pandemic left some feeling undervalued and underutilized post-pandemic. Overall, these four respiratory therapists working in primary care enjoy the work-life balance with no shift work or night shifts and will continue to do their work in this setting providing care to patients with chronic respiratory disease.

The next chapter will discuss the results as they pertain to the overall question and objectives of the study and will explore the implications of the findings for future research of the roles and responsibilities of respiratory therapists working in primary care in Ontario and Canada.

## Chapter 5: Discussion

### 5.1 Introduction

This chapter will discuss the results that were presented in the previous chapter and compare them to the literature review in terms of the value of including respiratory therapists on the primary care team for the management of chronic respiratory disease and the impact of the COVID-19 pandemic on respiratory therapists and their provision of care during this unprecedented time.

The role of the respiratory therapist has been developing and evolving and has grown from being an inhalation therapist, responsible for providing oxygen therapy post-World War II, managing iron lungs during the polio epidemic in the 1950's, initiating and maintaining life supporting mechanical ventilators, to providing patient education and chronic cardiopulmonary disease management as part of the interprofessional health care team (Mirshahi, 2018; Rickards & Kitts, 2018). In March 2020 we experienced a worldwide pandemic which prompted the discontinuation of some services and left patients without care (Gray et al., 2023). People minimized social contact due to the public health measures that were instituted, and any primary care services that continued during this time were the result of adaptations to the provision of care. The respiratory therapists that were interviewed for this study were innovative and creative in finding alternate ways to provide care to their patients during the COVID-19 pandemic using virtual technologies, although some patients had difficulties with navigating the new virtual world. Factors contributing to these difficulties include challenges with digital literacy required to connect via computer or smart phone. Another factor is the advanced age of some patients and associated physical or cognitive limitations. Some patients had limited or no access to internet, while others preferred to discontinue care during this time. This is congruent with the literature which states similar findings across the provision of primary care during the COVID-19 pandemic (Brown et al., 2024; Gray et al., 2023).

The creation of a system of health teams in Ontario was intended to identify and respond to local population needs; however, it is unclear what combination of health care providers is required to do so (Allana et al., 2022). The respiratory therapists in the present study stated that they had to define their roles and explain or defend them to their colleagues and managers to establish their positions in primary care. Clearly defined tasks that are tied to health care providers such as respiratory therapists working in primary care can provide the opportunity to work with patients in the community to identify their needs and connect them with other health care services. Respiratory therapists, with their vast knowledge of chronic cardiopulmonary disease, understanding of the determinants of health, patient education and

health promotion are “capable of providing leadership and case management in the primary care setting” (Canadian Society of Respiratory Therapists, 2023, p. 2).

What follows will be a discussion of the findings of the present study which demonstrates how the research objectives were achieved and how they relate to the literature. This study had three objectives: 1) To define the roles and responsibilities of respiratory therapists working in primary care in Ontario, Canada before the COVID-19 pandemic, 2) To describe the extent of role ambiguity experienced by respiratory therapists in primary care settings and 3) To describe the impact of the COVID-19 pandemic on the roles and responsibilities of respiratory therapists in primary care. The discussion examines each of those objectives and will compare our results with the literature.

## 5.2 Define the roles and responsibilities of respiratory therapists working in primary care in Ontario, Canada

“A role is a package of broadly recognized rights and obligations that would be expected of anyone occupying a given position embedded within a system of social relations” (Hage & Powers, 1992, p. 7). In the healthcare context, a role encompasses a series of tasks and expectations that guide a professional’s responsibilities within a particular setting. For respiratory therapists working in primary care in Ontario, many tasks are well established, while others are more fluid, reflecting the evolving nature of their role. These therapists are increasingly relied upon to fill gaps in chronic disease management, especially for respiratory conditions like chronic obstructive pulmonary disease (COPD), where they often take on responsibilities that extend beyond traditional primary care boundaries (Canadian Thoracic Society, 2019). As healthcare teams adapt to better meet patient needs, respiratory therapists in Ontario’s primary care system must balance well-defined tasks with the need to navigate less structured responsibilities that vary according to team expectations and healthcare demand (Ministry of Health and Long-Term Care (MOHLTC), 2020)

The recent implementation of Family Health Teams (FHTs) in Ontario introduced new models of collaborative care, emphasizing interprofessional cooperation to improve patient access to various healthcare providers (Haj-Ali et al., 2021). Yet, while these teams aim to address local population needs, it remains uncertain which healthcare professionals are best suited to carry out specific responsibilities within each team (Allana et al., 2022). Respiratory therapists in this study highlighted the need to clarify their roles to peers and managers to effectively establish their place within primary care settings; this was also echoed in Jackson et al. (2019). This reality suggests that, although respiratory therapists have essential skills and knowledge related to chronic respiratory care, they frequently face the challenge of defining their position within the broader healthcare team. A clearly defined set of tasks tied to their

expertise can help optimize their contributions to chronic disease management, allowing them to effectively identify patient needs and facilitate connections to additional health resources as required (Vachon et al., 2022). By distinguishing their unique role, respiratory therapists help ensure a consistent and integrated approach to patient care across the primary care continuum (Canadian Thoracic Society, 2019).

Primary care services play a crucial role in the diagnosis and ongoing management of COPD, assisting with disease progression monitoring, managing exacerbations, encouraging medication adherence, and fostering personalized action plans (Vachon et al., 2022, p. 260). Spirometry is a key diagnostic tool not only for identifying COPD but also for guiding medication management (Canadian Thoracic Society, 2019). It helps clinicians assess the severity of the disease, decide on appropriate medication regimens, and determine whether additional treatments like airway clearance therapy or specific lung recruitment strategies are needed (Gershon et al., 2019). Regular spirometry assessments allow respiratory therapists to tailor treatments and monitor changes in lung function over time (Ministry of Health and Long-Term Care (MOHLTC), 2020).

All four respiratory therapists in this study identified COPD management as a core component of their role in primary care. This includes conducting spirometry, instructing patients on inhaler use, and providing targeted education (Vachon et al., 2022). Proper inhaler technique is essential for the management of COPD, as the correct use of inhalers ensures that medication reaches the lungs effectively (Lavorini et al., 2014). However, the complexity of inhaler devices and the variety of types available can often confuse patients, making it difficult to remember the correct technique. Although pharmacists are valuable resources for this education, they may not see patients on a regular basis, and patients often assume that they will master inhaler technique after a single demonstration (Boulet, 2012). Many patients require consistent reminders and guidance on proper technique to achieve optimal medication delivery (Lavorini et al., 2014).

Beyond inhalers, airway clearance therapy is another critical component of COPD management. This type of therapy helps clear mucus and improve lung function, but it requires precise technique to be effective (Osadnik et al., 2012). Respiratory therapists are integral in teaching patients how to properly perform airway clearance techniques to prevent the accumulation of mucus that can lead to infections or exacerbations (Canadian Thoracic Society, 2019). However, much like inhaler use, airway clearance therapy requires frequent reinforcement to ensure that patients can perform it correctly and consistently at home (Osadnik et al., 2012). The combined approach of medication adherence, inhaler technique, and airway clearance therapy plays a pivotal role in improving the health outcomes of COPD patients; however, these tasks are not uniformly carried out by all primary care providers. For example, Vachon et

al. (2022) found that only one-third of primary care physicians provide COPD action plans, with a significant number of patients not receiving self-management education. This inconsistency further underscores the unique and essential role respiratory therapists play in primary care (Boulet, 2012).

A key advantage of respiratory therapists in primary care is their capacity to provide continuity of care and build meaningful, ongoing relationships with patients (Ministry of Health and Long-Term Care (MOHLTC), 2020). This continuity allows respiratory therapists to monitor their patients' progress closely, assess their adherence to treatment plans, and provide personalized education at regular intervals (Jackson et al., 2019). By fostering trust and open communication, respiratory therapists can help patients feel more comfortable discussing difficulties they may encounter with their treatment, including the correct use of inhalers or other prescribed therapies (Boulet, 2012). For patients managing chronic conditions like COPD, this supportive relationship can make a significant difference, as it encourages consistent engagement in self-care practices and enhances overall treatment outcomes (Vachon et al., 2022). The familiarity that develops between respiratory therapists and their patients also enables them to better recognize subtle changes in their patients' health, providing timely interventions that may prevent exacerbations and reduce hospital visits (Canadian Thoracic Society, 2019). This relational aspect of care is not only valuable to patient outcomes but also deeply meaningful for respiratory therapists, who often express a strong commitment to supporting their patients' long-term health and quality of life (Jackson et al., 2019). With their specialized training in respiratory disease management and extensive knowledge of inhaled medications, respiratory therapists address a critical need by offering personalized care and empowering patients through education. Their role thus compliments and strengthens the overall primary care team by bridging existing service gaps, particularly in areas of chronic respiratory disease management.

Building on their specialized training in respiratory disease management and extensive knowledge of inhaled medications, respiratory therapists also play an essential role in educating the primary care team (Ontario Ministry of Health, 2019). While they empower patients through personalized care, they also provide guidance to other healthcare professionals, ensuring that the team remains informed about the latest practices in respiratory care. This includes educating colleagues on proper inhaler techniques, airway clearance therapy, and other respiratory-related issues (Boulet, 2012). By sharing their expertise, respiratory therapists help enhance the team's overall understanding of chronic respiratory diseases, thereby fostering a more coordinated and effective approach to patient care (Ministry of Health and Long-Term Care (MOHLTC), 2020). This collaborative approach strengthens the team's ability to manage complex respiratory conditions and improves the consistency and quality of care provided to patients (Jackson et al., 2019). Ultimately, respiratory therapists not only bridge service gaps

for patients but also contribute to the continuous education of the healthcare team, further elevating the level of care delivered within the primary care setting (Vachon et al., 2022).

A core element of the respiratory therapist's role in primary care is autonomy, which aligns closely with their specialized competencies (Canadian Thoracic Society, 2019). High levels of professional autonomy allow respiratory therapists to make independent, evidence-based decisions that enhance patient outcomes and support effective chronic respiratory management (Gershon et al., 2019). Consistent with findings among other healthcare professionals, such as nurse practitioners (Pron, 2013), this autonomy enables respiratory therapists to exercise their clinical judgment, make recommendations on inhaler use, optimize medication plans, and develop individualized action plans. Amy, one of the participants in this study, noted the added autonomy of being the only respiratory therapist in their clinic, where their expertise in respiratory management is frequently sought by physicians and team members. In Sam's case, autonomy is further complemented by the flexibility to alternate between clinic visits and home visits, which allows for tailored interventions based on patient needs in diverse settings. This flexibility enhances Sam's ability to utilize their respiratory care skills in unique, patient-centered contexts, demonstrating how autonomy and adaptability in practice enable respiratory therapists to provide holistic, continuous care that extends beyond the clinic setting (Gershon et al., 2019).

Several factors contribute to this high degree of autonomy, including years of practice and additional certification. The respiratory therapists in this study all had over a decade of experience and held advanced credentials as Certified Respiratory Educators or Certified Tobacco Educators. These qualifications foster professional confidence, further enhancing autonomous practice (Jackson et al., 2019). Similarly, research by Jorgenson et al. (2014) on pharmacists in primary care indicates that specialized training and credentials facilitate integration into interprofessional teams, reinforcing the value of advanced qualifications in supporting a well-defined and autonomous role within collaborative care settings.

In summary, the roles and responsibilities of respiratory therapists in Ontario's primary care settings are deeply rooted in their specialized skills in respiratory disease management, patient education, and continuity of care (Canadian Thoracic Society, 2019; Vachon et al., 2022). The autonomy afforded to them allows them to apply these competencies effectively across clinical and community settings, meeting complex respiratory health needs (Gershon et al., 2019). However, the flexibility and autonomy that characterize their role can also bring a certain level of role ambiguity, as these therapists navigate tasks that may not be traditionally or explicitly defined. This ambiguity places additional responsibilities on respiratory therapists to delineate their contributions within primary care teams, which will be further explored in the next section (Jackson et al., 2019).

### 5.3 Describe the extent of role ambiguity experienced by respiratory therapists in primary care settings

Research defining the roles and responsibilities of respiratory therapists in primary care is limited. Studies of allied health professions, such as occupational therapy (OT), show a similar lack of role clarity. Despite being present in primary care for over two decades, many OTs still encounter misunderstandings about their roles (Donnelly et al., 2016). This ambiguity is even more pronounced for respiratory therapy, a younger profession historically grounded in acute care settings. The Respiratory Therapy Society of Ontario's (RTSO) 2020 Role Profile highlights the unique contributions respiratory therapists make across acute, community, and primary care settings (Respiratory Therapy Society of Ontario, 2020). Yet, in primary care, respiratory therapist roles remain poorly defined and underrecognized, especially in managing chronic conditions such as COPD. Given the increasing demand for chronic disease management in primary care, there is significant opportunity for respiratory therapists to establish a stronger presence in this setting (Donnelly et al., 2016). To enhance integration, primary care teams and policymakers must promote respiratory therapy roles within interprofessional frameworks (Canadian Society of Respiratory Therapists, 2023).

In this study, respiratory therapists consistently reported that their roles were not well-defined. Amy, for example, had to advocate directly with policymakers and their organization to secure a position in their Family Health Team for chronic respiratory management. Harry similarly faced challenges justifying the role of the respiratory therapist on their urban primary care team. These findings align with Jorgenson et al. (2014), which revealed that pharmacists faced similar obstacles when entering urban primary care teams, particularly when lacking established collaborative relationships. Role integration may be more challenging in urban environments, where the availability of other healthcare professionals can reduce the visibility of each professional's specific contributions. Respiratory therapists in rural settings, in contrast, may experience easier integration due to a greater reliance on collaborative relationships within smaller care teams.

A significant factor contributing to this role ambiguity is the lack of understanding among managers, respiratory therapists in acute care, and the regulatory body, the College of Respiratory Therapists of Ontario (CRTO), of what respiratory therapists can do in primary care. The license renewal forms for Ontario respiratory therapists predominantly emphasize acute care tasks, with limited attention to primary care duties, thereby creating further disconnect. Amy expressed frustration with this, feeling that their core responsibilities in primary care such as chronic disease management and patient education are unacknowledged by both their peers and the licensing body. This oversight highlights a broader

professional identity issue, where the scope of respiratory therapy practice in primary care is often overshadowed by its acute care roots, even though the competencies required in primary care settings are distinct and increasingly in demand (Canadian Society of Respiratory Therapists, 2023).

Advocacy from within the respiratory therapy profession and by professional advocacy organizations is necessary to address this gap in role definition. Without clear, acknowledged responsibilities, healthcare teams may struggle to leverage respiratory therapists' expertise in chronic disease management, ultimately compromising patient care. Frustration and miscommunication resulting from unclear roles can further hinder the integration of respiratory therapists into interprofessional teams (Jorgenson et al., 2014). Vachon et al. (2022) highlight this gap, reporting that many nurses and physicians feel underqualified to support patients with COPD, despite respiratory therapists being well-suited to this task. However, without a clearly defined role in primary care, respiratory therapists are frequently underutilized, creating a missed opportunity for optimized patient outcomes.

Smoking cessation is another area that illustrates the ambiguity in respiratory therapists' roles. For some respiratory therapists, smoking cessation support is a central task, allowing them to leverage their expertise in respiratory health to help patients quit smoking. For others, this task is either shared with or delegated to other healthcare professionals, such as nurses or pharmacists (Gershon et al., 2021). This is the case with John, who does not provide smoking cessation support, and it is the responsibility of other professionals in the clinic. This overlap in responsibilities creates job ambiguity, as the division of tasks related to smoking cessation is not consistently defined across primary care settings. This inconsistency can lead to confusion among both healthcare professionals and patients, ultimately affecting the quality of smoking cessation support provided. Further clarification of roles in smoking cessation is needed to ensure that patients receive consistent and effective guidance, regardless of which healthcare professional is providing the service.

In summary, while autonomy in practice affords respiratory therapists in primary care a significant degree of professional flexibility, this autonomy often comes with the burden of role ambiguity, which can be especially challenging during atypical circumstances. For instance, the COVID-19 pandemic underscored the impact of this role ambiguity, as respiratory therapists had to navigate shifting responsibilities and expectations with limited guidelines specific to primary care settings. Such events illustrate how unclear roles can intensify the demands on respiratory therapists, contributing to added stress and underscoring the need for clearer role delineation in primary care. The next section will further explore how these factors affect respiratory therapists' professional experiences and the overall effectiveness of primary care teams.

## 5.4 Describe the impact of the COVID-19 pandemic on the roles and responsibilities of respiratory therapists in primary care

The COVID-19 pandemic heightened the visibility and societal perception of non-physician healthcare providers, transforming previously less prominent roles into highly visible “heroic” positions (Hennekam et al., 2020). Healthcare providers, including respiratory therapists, found themselves in the media spotlight as essential workers, symbolizing resilience and dedication (Hennekam et al., 2020). Reflecting on this, John, one of the respiratory therapists in this study, expressed pride in being recognized for continuing patient care in the face of uncertainty. However, as pandemic-related fear evolved, a sense of distrust toward healthcare providers also emerged, complicating respiratory therapists' interactions with their communities. For instance, John noted a transition from “hero to zero,” describing the unexpected shift from public admiration to devaluation and mistrust.

Despite this fluctuating public sentiment, respiratory therapists adapted their care delivery by pivoting to virtual care or accepting redeployment to acute care or COVID-19 testing sites, driven by a commitment to patient care continuity. The experience underscored the importance of preparedness for future crises by fostering resilience and adaptability in healthcare teams (Willems et al., 2024). For respiratory therapists, the pandemic spotlighted their capacity to innovate and persevere, reinforcing their value as adaptable healthcare professionals capable of sustaining essential services during crises (Devoe & Bazemore, 2021). This adaptability is central to interprofessional models that enhance the resilience and responsiveness of primary care teams to evolving public health demands.

A core aspect of resilience is the ability to maintain psychological balance under stress, defined by Austin and Gregory (2021) as “the ability to adapt to and maintain psychological equilibrium during times of high stress” (p. 1868). For respiratory therapists, pandemic-related stress stemmed from shifting quickly from in-person to virtual care or accepting redeployment assignments. This adaptability is vital in mitigating burnout and fostering long-term resilience, ensuring that healthcare professionals can meet patient needs effectively without compromising their well-being. According to Austin and Gregory (2021), building resilient systems within primary care helps ensure continuous care delivery under strain, emphasizing the necessity of a responsive and supportive workplace culture.

Integrated care models, as Allana et al. (2022) discuss, depend on healthcare providers' capacity to adjust their services based on evolving patient needs across various settings. The pandemic underscored the importance of flexibility, as respiratory therapists had to rapidly adopt new workflows and deliver care virtually. Respiratory therapists encountered specific challenges with elderly patients,

who often struggled with digital tools or lived in rural areas with unstable internet connections, making it difficult to conduct virtual assessments or maintain continuous care. Respiratory therapists reported concerns about patients not fully disclosing symptoms remotely, leading to difficulties in providing adequate support without the benefit of physical assessments. In response to these barriers, respiratory therapists adapted their approaches, using online educational resources to help patients access supportive information outside of direct consultation. Allana et al. (2022) suggest that healthcare systems are most effective when providers are both adaptable and willing to assume new roles. For respiratory therapists, flexibility became paramount in transitioning to virtual care and facing redeployment requirements, demonstrating their resilience and resourcefulness amid unpredictable changes in care delivery.

The COVID-19 pandemic highlighted the vital role of primary care as the first point of contact for many patients, reinforcing the importance of respiratory therapists as essential frontline providers within interprofessional teams (Vega-Dienstmaier et al., 2023). Their role in delivering evidence-based, patient-centered care that is adaptable to the diverse needs of patients became increasingly apparent. During this time, certain aspects of the respiratory therapy scope of practice that were previously under-recognized were clarified. Specifically, respiratory therapists are authorized to administer medications via various injection routes, such as subcutaneous, intramuscular, and intravenous, provided it aligns with their professional scope and individual competencies. This clarification was especially important as the pandemic brought into focus that respiratory therapists could administer vaccines, such as those for influenza, pneumococcal pneumonia, and COVID-19, aimed at preventing respiratory-related conditions (College of Respiratory Therapists of Ontario, 2020). Prior to the pandemic, this task was not fully clear, but it became more defined at the provincial level during the crisis. It is now essential for respiratory therapists to have the appropriate knowledge and training to administer these vaccines safely, and it is recommended that their competency be verified through mechanisms such as training attendance records or other forms of documentation. This clarification of responsibilities not only solidified the respiratory therapist's role in primary care but also emphasized their critical contribution to patient care during public health challenges.

As respiratory therapists increasingly adopted virtual care during the pandemic, the hybrid model of care delivery, a combination of in-person and virtual visits, became a prominent approach post-pandemic. This hybrid model allowed respiratory therapists to extend their services to a broader and more diverse patient population, including those in rural or underserved areas who may have previously had limited access to in-person care. The integration of virtual care also increased the autonomy of respiratory therapists, enabling them to manage patient care with greater flexibility and efficiency. Although certain procedures, such as spirometry, cannot be performed virtually and thus necessitate in-person visits, the

hybrid model has proven particularly effective in areas such as smoking cessation support. Virtual platforms allow respiratory therapists to deliver education, track progress, and provide ongoing support remotely, which can enhance patient engagement and follow-up, ultimately leading to more comprehensive and accessible care for individuals seeking to quit smoking. While it cannot fully replace the face-to-face component of respiratory therapy, this hybrid model enhances care delivery by increasing access, improving continuity of care, and fostering stronger patient-practitioner relationships across diverse populations.

In summary, while the COVID-19 pandemic provided respiratory therapists with unprecedented visibility and recognition, it also exposed them to role-specific challenges, including public apprehension, work-family strain, and logistical barriers to the provision of remote care. Their experiences underscored the importance of interprofessional training and resilient systems to empower respiratory therapists to navigate high-stress scenarios effectively. However, the pandemic also highlighted how role ambiguity can exacerbate distress in such crises, pointing to a need for clearer, standardized role definitions to support respiratory therapists' vital contributions to primary care in future public health emergencies. The next section will discuss the strengths and limitations of the project.

## 5.5 Strengths and Limitations

There is a paucity of literature focusing on the roles and responsibilities of respiratory therapists working in primary care, and no research that explores the impact of the COVID-19 pandemic on this profession. The first strength of this project is that it contributes to the literature by filling the gap that exists on the lack of definition of the roles and responsibilities of respiratory therapists in primary care in Canada. It also describes the impact of the COVID-19 pandemic on these roles and responsibilities. This information can help respiratory therapy educators, employers, and the greater health care system in providing training and allocating funding to secure positions for respiratory therapists in primary care. As the population ages and the prevalence of chronic conditions increases, there will be an increased need for health care providers to work in primary care settings to minimize the patient surge in the acute care setting where resources continue to be scarce. While the role of other health professionals such as pharmacists, occupational therapists and nurses in primary care are defined, there is a lack of this information to promote respiratory therapists working in this setting. I believe that this study can contribute to this information.

Another strength of this study are the steps that were taken to enhance the trustworthiness of the research. Throughout the study, my supervisor remained very engaged with me, from the development of the interview guide to the literature review, methodology and analysis designs, to review of several drafts throughout all stages of the project. My supervisor asked me questions about my perspective on the data

based on her own knowledge of being the principal investigator on the larger project and her familiarity of the research processes which were new to me. We engaged in discussions about different methodologies as we pivoted throughout the project and encountered roadblocks with participant recruitment which required changes to the methodology. Transferability was achieved by including descriptions of the participants' work context prior to the pandemic and the adaptability and creativity of them in altering their tasks during the pandemic. This can help other clinicians determine which of these findings can be transferred to their primary care practice.

Maintaining an audit trail throughout the project helped me to be reflective of my experience in working with the data and capture my own potential biases. It provided me a place to document the decisions that were made throughout the research and writing processes and captures the steps of my research through interactions with the data and discussions with my supervisor.

Member check-in by having one participant review their transcript and results added dependability and reliability of the results by ensuring that the results accurately reflected their views and experiences. Through this process, transparency was enhanced by including one participant's feedback on my description of the data. However, we could have done this procedure with all our participants, if we would have known that we would have done only 4 interviews.

In addition to the strengths, there are several limitations to this project. The first is the sample size. Initially, my aim was to complete fifteen interviews and apply interpretive description to the results. However, due to the issues with prolonged recruitment, individuals posing as respiratory therapists, and a finite amount of time to complete the project, there were only four suitable interviews to analyze. This required a change in methodology to case study analysis. As the project focused on respiratory therapists working in primary care in one province, it was only the perspective of a small sample of individuals that was captured. Future research without the timelines of a master's program could enable researchers to gather more information from a larger sample of respiratory therapists which could provide further insight into defining their roles and responsibilities in primary care.

A second limitation could be that the four respiratory therapists who were interviewed for this study all had more than ten years of experience in the profession. Afshari et al. (2021) found that years of work experience had a positive correlation with resiliency in nurses during the COVID-19 pandemic. The same could be said for the respiratory therapists in this study, as all four of them demonstrated resilience in adapting to the stoppage of in-person activities such as spirometry and the move to virtual care for a period. They also demonstrated innovation in continuing to provide services to patients via "porch visits"

to drop off equipment or educate patients about how to manage their respiratory symptoms when they presented to a COVID-19 testing site.

A third limitation to this study could be that sex/gender differences and marital/family status were not taken into consideration. Furthermore, we I did not take into consideration racial or ethnic background of the participants. The study by Afshari et al. (2021) found that female nurses had lower levels of resilience than male nurses, and nurses with children also had lower levels of resilience compared to those without children. This could also factor into the respiratory therapists' ability to be creative in finding new ways of providing care to their patients during the pandemic depending on their concern about exposure to the virus and transmission to a partner or children.

Finally, as this study only focused on four respiratory therapists working in one Canadian province, the findings will not necessarily be applicable to respiratory therapists working in other provinces since healthcare professionals are regulated by provincial authorities.

## 5.6 Chapter Summary

This chapter discussed the findings of the project, presented how the three objectives of the study were achieved, and related the findings to the literature. This study adds to the literature that defines the roles and responsibilities of allied health professions, specifically respiratory therapists, working in the primary care setting. It explores the role ambiguity of a profession that is newer to the primary care setting and provides new information regarding the impacts of the COVID-19 pandemic on respiratory therapists in primary care. Next steps would be to sample a larger size of respiratory therapists in primary care across Canada to assess the extent of role ambiguity of this evolving profession.

## Chapter 6: Conclusion

This research has defined the roles and responsibilities of respiratory therapists working in primary care in Ontario, Canada. It demonstrates the importance of team factors and interprofessional collaboration in the provision of care to patients with chronic respiratory disease. A clear understanding of respiratory therapists' roles is imperative to integrating more respiratory therapists in primary care across the country. Role clarification of health care professionals can lead to increased communication, collaboration, and empowerment, which provides improved management of COPD, improved quality of care, and improved patient and health care provider experiences (Sibbald et al., 2023). The establishment of a clearly defined scope of practice for respiratory therapy within primary care can promote enhanced treatment with accurate diagnoses and medication management. Respiratory therapists' expertise in clinical practice and professional judgment, their ability to work autonomously in a collaborative fashion, and promote patient-centred care can improve patient outcomes and reduce utilization of the acute care sector of health care. This research supports that of Rickards and Kitts (2018), who state that the roles of respiratory therapists need to be established to enhance quality of care for patients with COPD.

As we have moved from a pandemic to an endemic, more research is still needed to fully understand how the roles of health care professionals working in primary care were impacted by COVID-19. Primary care entered the pandemic with fewer resources than the acute care setting, and with the redeployment of primary care practitioners like respiratory therapists to acute care or COVID-19 testing sites, there was an even greater gap or discontinuation of primary care services (Devoe & Bazemore, 2021). This present study demonstrates the resilience of respiratory therapists in adapting their primary care to provide virtual care and optimize public health measures to maintain contact with their patients to provide education and support during the pandemic.

As an emerging role, the primary care respiratory therapists in this study had to demonstrate their creativity in proving their worth to the team, their contribution to pandemic planning, and their commitment to lifelong learning and sharing their knowledge about respiratory disease and keeping current on the developments related to the COVID-19 virus and its treatment. To continue in these roles and be sought after by other members of their team they must remain innovative and imaginative, otherwise, their role might disappear. The respiratory therapists in this study morphed their practice and continued to be important members of the primary care team during an uncertain time.

Despite the impact of the COVID-19 pandemic, respiratory therapists demonstrated high adaptability and resilience in transitioning to remote or virtual care, managing the fear and negativity of the public towards them continuing to work during the pandemic, and continuing to provide leadership during times of uncertainty and stress with their knowledge of chronic respiratory diseases. Although

there was a loss of some patients during the pandemic due to their fear of contracting the virus or challenges with using technology to receive care, respiratory therapists still felt like they were making a difference in their patients' lives by continuing to provide care to others.

Regardless of their years of experience in the field, it is imperative to understand the potential impact of respiratory therapists working in primary care in reducing and preventing exacerbations and hospitalizations due to chronic respiratory disease. A clear statement of scope of practice for respiratory therapists in primary care is necessary to grow the profession in this area of practice and promote the role to other members of the interprofessional health care team. The CSRT's "Position Statement on Respiratory Therapists and Primary Care Teams" recommends that governments should provide funding to expand primary care teams that include respiratory therapists (Canadian Society of Respiratory Therapists, 2023). Further research is needed to explore the roles and responsibilities of respiratory therapists working in primary care across Canada to support their integration into primary care teams. Future research could also explore the perception of leaders and policymakers regarding the roles and responsibilities of respiratory therapists in primary care teams and their ability to reduce overall costs related to the treatment of chronic respiratory disease. Finally, respiratory therapy regulatory bodies and education programs need to expand the scope of practice and training of respiratory therapists across Canada to include prescribing inhaled medications and smoking cessation medications, ordering spirometry testing and chest x-rays, administering influenza/pneumonia/COVID-19 vaccinations and other responsibilities related to the diagnosis and management of individuals with chronic respiratory diseases such as asthma and COPD.

In conclusion, this study explored the roles and responsibilities of respiratory therapists prior to the COVID-19 pandemic, it highlighted the role ambiguity that exists among respiratory therapists in primary care, and it described the impact of the pandemic on those roles and responsibilities. It highlights the innovation of respiratory therapists and their commitment to providing patient care during turbulent times. It demonstrates the resilience and creativity of respiratory therapists and justifies the inclusion of them on the interprofessional primary care team. Hopefully, the findings from this study will support the expansion of the role of the respiratory therapist beyond the walls of the acute care setting and will entice policymakers and governments to increase funding for positions in primary care.

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# Appendix A

## Interview Guide for Respiratory Therapists

**Protocol Title:** Integrating Respiratory Therapy in Primary Care (IRTiPC): Respiratory Therapists in Primary Care Settings: Mixed-method pilot research project – Qualitative portion of the study

### **Introduction questions:**

1. Please tell me about what your background and experience has been like as a respiratory therapist.

Potential probe questions:

- *How long have you worked as a respiratory therapist?*
- *What areas of respiratory therapy have you worked in?*

2. What made you choose or change positions into primary care?

3. Can you please describe to me your primary care setting?

Potential probe questions:

- *Do you work in a rural or an urban setting?*
- *How do you get your referrals?*
- *What is the population that you serve? Age/disease specific/total #*
- *Ontario RT: In what type of primary care setting do you work? ? (I.e. Community Health Center/Family Health Team/in hospital- home care).*
- *What does your interaction with patient look like?*
- *Do you do home visits?*
  - *If yes, what does a home visit entail?*
- *Do you have rostered or unrostered patients, or a combination of both?*
- *Ontario RT: Do you split your time between different sites?*

4. How would you describe the role and responsibility of respiratory therapists working in primary care?

Potential probe questions:

- *What do you see as the difference in working in a primary care setting compared to your previous workplaces?*

- *Are you involved in the provision of any interdisciplinary programs? (for example, smoking cessation, rehabilitation, heart failure, hospital discharge, system navigation)*
  - *Please describe how your role and practice has changed when you shifted to primary care.*
  - *What additional professional development did you require to work in primary care?*
  - *What might have helped better prepare you for working in primary care?*
5. What aspects of your position do you value the most? What aspects of your position do you value the least?
6. What aspects of your position in primary care differ from working in acute care?  
Potential probe questions:
- *Are there tasks in primary care that you think you should be performing and aren't?*
    - i. *If yes, what tasks?*
  - *How does your scope of practice in primary care differ from that in acute care?*
7. What aspects of your position in primary care differ from working in home care?
8. Describe to me what your typical workday is like.  
Potential probe questions:
- *What routine tasks do you perform?*
  - *How many patients do you see in a day?*
  - *Do you have control over your own schedule?*
  - *Do you have the ability to complete non-patient tasks during work hours? (I.e administrative work etc.)*
  - *Are there parts of your position that you don't think should be done by the RT?*

**Start of COVID-19:**

9. When COVID-19 started, what changes to your role and responsibilities occurred?  
Potential probe questions:
- *How was your position impacted by COVID-19?*
  - *Were you redeployed to acute care or a COVID-19 testing site? If yes, tell me more about that experience.*
    - *How did the redeployment fit with your role as an RT?*

10. How did you feel about your role as an RT during the pandemic?

11. If you had to use remote or virtual technology to connect with clients, what was this experience like for you?

Potential probe questions:

- *What adjustments did you need to make to your practice to use technology when connecting with clients?*
- *What were the challenges you faced using the technology to provide care?*
- *How well prepared did you feel in shifting to the use of remote or virtual technologies?*
- *What might have helped you more effectively provide care through remote or virtual technology?*
- *If you did not use remote or virtual:*
  - *Why?*
  - *How did you connect with clients?*

12. Please describe to me what happened to spirometry in your area?

Potential probe questions:

- *Manitoba: How did you manage without this information.*
- *When did you restart and from where did the decision come from?*
- *Did you miss doing spirometry?*

## **Post COVID-19**

13. Now that the COVID-19 restrictions have lifted, how has this changed your roles and responsibilities?

Potential probe questions:

- *What has it been like for you to return to direct contact with patients?*
- *How would you describe the difference now compared to before the start of COVID-19?*
- *What has changed in terms of your practice with the shifts between COVID restrictions and return to more “normal” direct care?*
- *How would you describe your work satisfaction through the shifts with the COVID pandemic?*

14. What other thoughts do you have in relation to your role as respiratory therapist in the primary care setting during the transitions over the COVID-19 pandemic?

15. Please answer the following demographic questions:

- i. What is your age?
- ii. How many years have you worked as an RT?
- iii. What is the highest level of education that you have achieved?
- iv. What additional training/certification do you have?
- v. Do you work in a rural or urban setting?

# Appendix B

## Research Participant Information and Consent Form for Respiratory Therapists

**Title of Study:** Respiratory Therapists in Primary Care Settings: Mixed-Methods Pilot Study

**Principal Investigator:** Dr. Louise Chartrand, University of Manitoba

**Sponsor:** N/A

**Funder:** University of Manitoba – University Research Collaborative Program (URCP)

You are being asked to participate in a research study involving an interview. Please take your time to review this consent form and discuss any questions you may have with the study staff, your friends or family before you make your decision. This consent form may contain words that you do not understand. Please ask the study staff to explain any words or information that you do not clearly understand.

### **Purpose of this Study**

Canadian provinces have initiated system wide changes to improve chronic disease management service delivery in primary care settings. Many provinces have adopted a systems approach to primary care and chronic disease management, which resulted in the formation of interdisciplinary teams. To manage chronic lung disorder, respiratory therapist has been one of the allied health who got added to the team. However, there is limited evidence to support the success and the effectiveness of using this profession. In March 2020, the world shut down because of Covid-19. Public health measures impacted the primary care setting. Therefore, this research is being conducted to study the effectiveness of adding Respiratory Therapists (RTs) to chronic care management teams in a clinical setting and the impact that Covid-19 had on your care and health.

The objectives of this study are to:

1. Explore the roles and responsibilities of RTs in primary care settings in Canada (e.g. by starting with the province of Ontario and Manitoba), and to explore how did it change with the Covid-19 pandemic.
2. Evaluate how RTs can improve patients' health outcomes – by evaluating hospitalization and other ambulatory care sensitive conditions indicators.
3. Describe how RTs impacts people living with COPD/Asthma illness.
4. Describe how Covid-19 impacted Primary Care service delivery, and how this influenced COPD/Asthma illness.

### **Participant Selection**

You are being asked to participate in this study because you are a respiratory therapist working in Primary Care in Ontario or Manitoba.

A total of 8-10 participants will be asked to participate.

### **Study procedures**

- The method of data collection for this study will be individual phone or videoconference interview.
- Participation in the study will be for one session that will last about one hour.
- The interview will be conducted by study personnel.

- During the interview, you will be asked some questions relating to your employment and your role as a respiratory therapist in Primary Care. These questions will help us to better understand your work and the impact Covid-19 had on your practice.
- The sessions will be audio-taped, and the audiotapes will be transcribed by Point West transcription company, a professional transcription company.
- Transcribers will sign a form stating that they will not discuss any item on the tape with anyone other than the researchers.
- The audiotapes will be stored in locked files before and after being transcribed. Tapes will be destroyed once transcription is verified.
- You will be sent a copy of the final report, and you will have the chance to comment before it is made public.

### **Risks and Discomforts**

There are no anticipated physical or emotional risks to participants. Your identity will remain confidential. If a question makes you feel uncomfortable, you do not have to answer any question that makes you feel uncomfortable or that you find too upsetting.

### **Benefits**

Being an interview may not help you directly, but information gained may help the profession of respiratory therapy in the future.

### **Costs**

There is no cost to you to attend the individual interview.

### **Payment for participation**

You will receive 20\$ gift card for your participation.

### **Confidentiality**

We will do everything possible to keep your personal information confidential. Your name is only being collected to maintain a participant file. Your personal identifiers will not be linked to any of the study outcomes or published. A list of names and addresses of participants will be kept in a secure file so we can send you a summary of the results of the study. If the results of this study are presented in a meeting, or published, nobody will be able to tell that you were in the study. Please note that although you will not be identified as the speaker, your words may be used to highlight a specific point. The collection and access to personal information will be in compliance with provincial and federal privacy legislation.

Audiotapes of our discussion will be typed and used to prepare a report. The typed notes will be kept for five years in a secure locked file cabinet and office. Only the research staff will have access to them and know your name.

Some people or groups may need to check the study records to make sure all the information is correct. All of these people have a professional responsibility to protect your privacy.

These people or groups are:

- The Health Research Ethics Board of the University of Manitoba which is responsible for the protection of people in research and has reviewed this study for ethical acceptability
- Quality assurance staff of the University of Manitoba and who ensure the study is being conducted properly.

All records will be kept in a locked secure area and only those persons identified will have access to these records. If any of your research records need to be copied to any of the above, your name and all identifying information will be removed. No information revealing any personal information such as your name, address or telephone number will leave the University of Manitoba.

### **Voluntary Participation/Withdrawal from the Study**

Your decision to take part in this study is voluntary. You may refuse to participate, or you may withdraw from the study at any time. Your participation or discontinuance in the study will not constitute an element of your job performance or evaluation nor will it be part of your personal record at any of these institutions.

### **Questions**

If any questions come up during or after the study contact the principal investigator and the study staff: Louise Chartrand at [louise.chartrand@umanitoba.ca](mailto:louise.chartrand@umanitoba.ca)

For questions about your rights as a research participant, you may contact The University of Manitoba, Bannatyne Campus Research Ethics Board Office at (204) 789-3389

### **Consent Signatures:**

1. I have read all 3 pages of the consent form.
2. I have had a chance to ask questions and have received satisfactory answers to all of my questions.
3. I understand that by signing this consent form I have not waived any of my legal rights as a participant in this study.
4. I understand that my records, which may include identifying information, may be reviewed by the research staff working with the Principal Investigator and the agencies and organizations listed in the Confidentiality section of this document.
5. I understand that I may withdraw from the study at any time and my data may be withdrawn prior to publication.
6. I understand I will be provided with a copy of the consent form for my records.
7. I agree to participate in the study.

Participant signature \_\_\_\_\_

Date \_\_\_\_\_

(day/month/year)

Participant printed name: \_\_\_\_\_

**I, the undersigned, have fully explained the relevant details of this research study to the participant named above and believe that the participant has understood and has knowingly given their consent.**

Printed Name: \_\_\_\_\_ Date \_\_\_\_\_

(day/month/year)

Signature: \_\_\_\_\_

Role in the study: \_\_\_\_\_

Relationship (if any) to study team members: \_\_\_\_\_

## Appendix C

### Summary Of Categorical Aggregates from Interview Coding

<b>CATEGORICAL AGGREGATE</b>	<b>DESCRIPTION</b>
1. Roles and responsibilities of respiratory therapists in primary care	<ul style="list-style-type: none"><li>• Describes the roles and responsibilities of respiratory therapists.</li><li>• Defines the pre-COVID-19 practice.</li></ul>
2. Impact of COVID-19 on respiratory therapists' practice	<ul style="list-style-type: none"><li>• Addresses the challenges of providing care during the pandemic.</li><li>• Addresses the role adaptation of respiratory therapists during the pandemic (Transition to remote/virtual care).</li><li>• Addresses the post-COVID practice of respiratory therapists.</li></ul>
3. The perception and value of respiratory therapists in primary care	<ul style="list-style-type: none"><li>• Lack of understanding respiratory therapists' role in primary care.</li><li>• Lack of value of respiratory therapists' role during pandemic.</li><li>• Support for respiratory therapists' role in primary care.</li><li>• Referral method to respiratory therapists in primary care.</li></ul>
4. Job satisfaction of respiratory therapists in primary care	<ul style="list-style-type: none"><li>• Emphasizes the autonomy and expertise of respiratory therapists working in primary care.</li><li>• Addresses the lack of respiratory therapy positions in primary care.</li></ul>

## Appendix D

### Audit Trail – Reflexive Transcription Memos

Date	Notes
Sept 15/2023	Reading Mack's interview. Manager of a lung health program. Very impressed about the autonomy and decision-making abilities in their position. Very passionate about being a patient advocate. Don't know if I will be able to include this case since, they are a manager and does not have a daily role in providing patient care.
Sept 20/2023	Reading Mack's interview. Impressed that anyone, including patients, can refer to the program. Autonomy in role. RT values being part of the team and recognizes the impact of their role on patient care. Sensed their frustration in moving to virtual care during COVID. Clinic was closed and so spirometry was stopped. RT was creative in providing virtual care from their kitchen table. Frustration in providing virtual care to elderly patients who had difficulty with the technology. Sensed relief in the RT when they were able to return to in-person work to be able to show patients in-person how to use their home ventilators. RT's developed thorough processes regarding PPE so that they could continue seeing patients in their homes during pandemic. RT felt the public stigma during COVID - I can't imagine how awkward they must have felt when wearing their scrubs in public and people would avoid them. Very sad - public stigma - hero to zero. Shocked at how the public responded to seeing the RT in scrubs on the street. Public fear! Frustrating to have spirometry stop then start then stop again during various waves of the pandemic. COVID seems to have provided a learning opportunity in how to manage PPE and equipment being brought into patient's homes. More willing to provide assistance to patients over the phone since COVID.
October 4/2023	Reading Harry's interview today. They were trained in Manitoba - interesting, so they have a frame of reference to compare two provinces. Unfortunately, there are only a couple of positions for RTs in primary care in MB. It is frustrating to know this and also presume that there is a larger need for RTs in primary care across the country. But I am getting ahead of myself and need to just focus on the interviews from Ontario. Need to identify the difference between rostered and non-rostered patients in my paper?
January 24/2024	Excited to read through the interviews again. It takes several reads before I feel like I have a handle on the context of the transcripts. I am trying to keep an open mind, but it is hard because I can put myself in the shoes of the RT's. Hard not to infer feelings as I read interviews.
Feb 6/2024	Feeling calm about reviewing the interviews today. I think I am getting the hang of it but want to do a good job for Louise. I hope that I am on the right track with developing themes and commenting on the interviews. I have read all eight interviews several times and today I will select four to use. I can relate to the RT's frustrations in wanting to provide care to the patients - it reminds me of working in Yorkton when I was the only RT and wanted to be there for all of my patients and help provide care.

Feb 6/2024	<p>John interview: There is a lack of RT positions in primary care and 2 RT's cover 16 sites, so waitlists are up to 4 months!!! Is there a lack of funding for RT positions or is there a lack of awareness of what RT's can do in primary care? It is nice to hear that there is physician respect for the role and knowledge of the RT. RT worried about redeployment to acute care after being out of it for 5 years. I felt the same way at the beginning of COVID when the health region was looking for any RT (including those of us who worked at the university) to consider returning to acute care to help with patient surge. This caused me anxiety about whether I would be forced to go back to acute care and feeling guilty for not volunteering. There is a question of patient safety when you haven't done a job for over 10 years. RT feeling of "hero to zero" when dealing with the public fear. It seems like there is a general lack of public and employer (i.e. health region) respect for allied health during the pandemic - nursing received \$5k - nothing for RT. Lack of value placed on the RT's role. It makes me proud to hear that despite this, the RT would do it again if they had to - RT feels committed to their work, regardless of the situation. I can relate to their frustration in not being able to see patients in person - it would be hard to deliver care over the phone and with seniors who had difficulty with virtual means of communication.</p>
Feb 8/2024	<p>Reviewing interviews. It feels good to go back to the transcripts and read my thoughts and comments and add to them. Hopefully it will make sense to Louise when she reads my comments. Sam interview: Challenges for the RT being redeployed to acute care after working in primary care/home care for 18 years. It's frustrating to know that the RT was replaced by RN to do smoking cessation and PR when they were redeployed. It seems that it might have been easy to move RT's back into acute care since that's where the role originated. Maybe the role in primary care wasn't respected enough to keep them in there so they were replaced by nursing who has a more historic role in primary care. It's amazing how adaptable RTs were in providing care to patients during pandemic - providing care on the front porch to avoid going into patients' homes or using virtual care for those who couldn't/wouldn't come into the office. Lots of frustration in patient's dropping off during the pandemic because they couldn't use virtual means or wouldn't come back after the pandemic. Frustration over reduced accountability by patients during pandemic. There is increased accountability when they have to come in person. It is also easier to provide care in person than via virtual means. Patients and RT felt relieved when restrictions were lifted, and patients could be seen in the clinic again. "Peace of mind". RT happy with role, feels supported by management - although I would feel slighted at the fact that I was replaced by another profession due to redeployment during the pandemic - BUT maybe this shows the versatility of the IP team members, and the role overlap that must be understood in order to provide good patient care. RT didn't feel very utilized during the first six months of the pandemic and didn't feel like they had much of a role. (RT needs to define their role and any role overlap/conflict that might occur on the team).</p>
Feb 13/2024	<p>Harry interview: I found it interesting that their clinic has no waitlist - maybe it is because there is a lack of awareness that there is an RT position? RT is very busy but there is a lot of repetition. They manage to get all of their work done during the day (including admin work). RT positions don't seem to have any admin support. I wonder if this is because there is lack of understanding of the role. Public fear of contracting COVID is real! Patients were afraid to come to the clinics during this time, so the program stopped. It seems like there is a lack of understanding of the role of RT in primary care, and it was "easy" to discontinue services during the pandemic, especially since there was no in-person contact for a while (and you can't do spirometry virtually). Smoking cessation was done over the phone. Different than another RT interview, this one stated that things returned to "normal" post-COVID when patients returned to the</p>

	<p>clinic. RT's seem to take pride in being the "experts" in respiratory health and airway management - they provided education to the other clinic staff. There is pride in the profession, but it definitely seems to be underutilized due to lack of understanding of the profession. Seems like there is a theme of RT's feeling supported by MD's - so why aren't there more positions? Is it due to funding or is no one pushing for more RT's in primary care?</p>
June 24/24	<p>Reviewing my coding in NVivo and adding a few more quotes from John's interview (P1). I have identified all four of the interviews as Participants and assigned a number to them. Maybe I am doing too much cross-referencing by adding this layer of identification? I guess it depends on how I will identify the participants in my thesis. Reading through John's interview again and I get so upset when reading about them feeling like they have gone from hero to zero. It is heartbreaking and I can just imagine how they feel. And to be slighted by the government by not receiving the hazard pay during COVID-19, just another example of how there is little understanding about the importance of RT's. It doesn't seem to matter if we are working in acute care or another setting, we just aren't valued as much as other HCP's.</p>
June 24/24	<p>Reviewing codes in NVivo - amalgamated "Frustration" into "Challenges of providing care during COVID-19" / "Access to PPE" amalgamated into "Impact of COVID-19 on Primary Care Practice"</p>
June 24/24	<p>Initial codes: Benefits of working in primary care/ Challenges of providing care during COVID-19/ Comprehensiveness of care/ Hero to Zero/ Impact of COVID-19 on Primary care practice/ Job satisfaction/ Lack of RT positions in primary care/ Lack of value of RT role during COVID-19/ post-COVID practice/ Public fear of COVID-19/ Referral method/ Remote care/ Role adaptation/ Roles and responsibilities/ RT as expert/ Support for RT role/ Value of RT.</p>
July 3/2024	<p>Reviewing interviews and list of codes. I think that "Benefits of working in primary care" and "Job satisfaction" are similar in that I have coded the same information from John's interview into both codes. So, I might combine these two codes into "Benefits of working in primary care".</p>
July 8/2024	<p>Reviewing "Amy" interview. I can totally relate to her feelings about her work as an RT, because it was how I felt 25 years ago in SK. The frustration of knowing that you know more about what to do with your patients than a lot of doctors know. The lack of understanding of how much knowledge RT's have in managing chronic lung disease, and the role of working in acute care and primary care and the impact that we can have on patients. This RT interview shows the passion of the RT and how much they value their role in primary care. I can sense their frustration in the lack of understanding of what RT's can do for their patients and for MDs and other members of the team.</p>
Aug 12/2024	<p>Reviewing interview coding. Enjoying the work of coding interviews and creating themes from the codes. Going back over what I have coded and have refined the many themes into four main themes.</p>
Sept 10/2024	<p>Reviewing the transcripts for John, Harry and Sam. I am pleased with the themes that I have created from the data. They are representative of the interview data.</p>
Sept 11/2024	<p>Reviewing Harry and Sam's transcripts. The codes are applicable to these interviews and there are comparisons across cases. The transcripts have some rich descriptions of the RTs daily work and roles and responsibilities. There is comparison across cases with the shut down of primary care services and redeployment of some RTs during the pandemic. I feel a lot of passion in the RTs as they really enjoy their work in primary care.</p>