Tripartite Preparedness and Response During the COVID-19 Pandemic: A First Nations' Perspective

by

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Abstract

First Nations and other Indigenous populations experience higher rates of infection and more severe outcomes associated with disease and illness than is observed in the general Canadian population (Lee et al., 2023; Pickering et al., 2023; World Health Organization, 2009). Health inequities are rooted in and further complicated by factors such as the Indigenous social determinants of health (ISDoH) (Reading & Wien, 2009), that reflect issues including but not limited to inadequate or insufficient housing, lack of a potable water supply, poor access to healthcare services, and difficulty with the transport of goods and services that are attributable to geographic remoteness and lack of federal/provincial action. The compounded effects of the ISDoH on First Nations peoples resulted in higher rates of morbidity and more severe outcomes associated with the COVID-19 pandemic than was observed in the broader Canadian population (Fleury & Chatwood, 2022; Clark et al., 2021). This qualitative research sought to understand the ways in which 4 First Nations in Northwestern Ontario were both supported and underserved by federal and provincial governments, and the ways that autonomous mitigation efforts were organized and implemented by each community. Purposeful and snowball sampling were used to complete in-depth semi-structured interviews with 14 key informants from 2 rural First Nations, 2 remote First Nations, and 2 provincial territorial organizations. Key informants were all Anishinaabe and included Chiefs, former leadership, Deputy Chiefs, health directors, nurses, community health representatives, and pandemic response team members. Thematic analysis resulted in three key themes: (1) barriers to effective pandemic response for First Nations; (2) facilitators to effective pandemic response for First Nations; and (3) supporting First Nations in building paths forward. Each key theme had several subthemes. Theme 1: (1) federal and provincial governments, encompassing factors such as funding flow, inadequate funding, and

time delays for funding and resources; and (2) the social determinants of health, which included lack of access to healthcare services, overcrowded housing, access to potable water, and lack of infrastructure. Theme 2: (1) community; (2) positive leadership; (3) community and Anishinaabe nursing; (4) vaccine uptake; (5) the Sioux Lookout First Nations Health Authority; (6) provincial territorial organizations to support information sharing; and (7) social media as a surveillance measure. Theme 3: (1) improved preparedness and resourcing; (2) improved communications and coordination; and (3) self-determination. Findings suggest that the prioritization of autonomous response efforts and each First Nations right to self-determination are foundational to effective pandemic mitigation, requiring that federal and provincial governments respect each First Nations' inherent rights to sovereignty during prospective public health emergencies.

Author's Declaration of Originality

I hereby declare that I am the sole author of this thesis.

This is a true copy of the thesis, including any required final revisions as accepted by my examiners.

I understand that my thesis may be made electronically available to the public.

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Chapter 1: Introduction & Overview

Context

Coronavirus Disease 2019 (COVID-19)

A severe acute respiratory syndrome (SARS-CoV-2) was identified and isolated on December 31, 2019, in Wuhan, China (Sun et al., 2020; Zhu et al., 2020). SARS-CoV-2, now referred to as coronavirus disease (COVID-19), is a ribonucleic acid coronavirus that presents as viral pneumonia (Sun et al., 2020), with early onset indicators primarily causing respiratory and digestive tract symptoms (Huang et al., 2020). The World Health Organization (WHO) declared a public health emergency of international concern because of COVID-19 on January 30, 2020, which rapidly progressed to the status of global pandemic by March 11, 2020 (Sun et al., 2020; World Health Organization, 2020, pg. 1).

Symptoms at onset of SARS-CoV-2 may include fever, cough, and/or fatigue, with less frequent reports of symptoms such as headache, sputum production, coughing up blood, and diarrhea (Huang et al., 2020). Severe symptoms may include pneumonia, acute respiratory distress syndrome, septic shock, and systemic multiple organ failure syndrome (Huang et al., 2020). The primary source of transmission of COVID-19 is patients who have already become infected. Although some individuals who contract the virus may remain asymptomatic, they may still be infectious. Infection is spread directly through person-to-person contact, or through indirect contact via aerosols from respiratory tracts (Algahtani et al., 2020). The high transmissibility of COVID-19 in conjunction with the particular health status and vulnerability faced by many First Nations populations, place this demographic at an increased risk associated with the virus (Power et al., 2020; Reading & Wien, 2009).

First Nations in Ontario

Ontario's population comprises 22% of the overall Canadian First Nations' demographic, with 133 First Nations located predominantly in remote regions of the province (Indigenous Services Canada, 2020). Many of the 133 First Nations are geographically isolated and are not accessible year-round by road, resulting in numerous issues associated with the transport of food, water, resources, access to healthcare services, and other necessities (Galway, 2016; VanderBurgh et al., 2020; Batal et al., 2021). Ontario First Nations have been further impacted by existent historical and systemic factors such as colonization and colonialism, which have resulted in vast inequities related to health outcomes, socioeconomic conditions, and access to healthcare services (Reading & Wien, 2009; Kirmayer et al., 2011; MacDonald & Steenbeek, 2015). These systemic factors are overarching and pervade most Canadian institutions as well as the broader Canadian culture. The result has been poorer health outcomes overall for Indigenous populations in Ontario, with high rates of comorbid health conditions, which are a vital consideration in the context of viral pandemics (Reading & Wien, 2009; Kirmayer et al., 2011; Power et al., 2020).

Indigenous Social Determinants of Health

The compounded effects of the social determinants of health (SDoH) as experienced by Indigenous peoples living within Canada put these populations at an elevated risk of contracting and transmitting infectious disease and illness, while also resulting in increased rates of morbidity and mortality associated with such illness (Reading & Wien, 2009; Greenwood & De Leeuw, 2012). These implications on health outcomes are direct by-products of the SDoH that place an enhanced burden of illness upon these populations (Reading & Wien, 2009; Greenwood & De Leeuw, 2012). Reading and Wien (2009) developed a framework to guide understanding

of the SDoH as they relate to Indigenous persons (ISDoH) to provide consideration of an Indigenous specific framework relative to the determinants of health. The development of such a framework has proven to be fundamental to the appreciation of existent health inequities given contemporary and historical contexts within Canada. These are the proximal, intermediate, and distal determinants of health. Proximal ISDoH are often relied upon to explain inequities on a social scale as they include direct health related behaviours, physical environments, and socioeconomic status (Czyzewski, 2011; Reading & Wien, 2009). Systems level factors of influence such as the available health care system, education system, sovereignty over lands and resources, and cultural continuity have been deemed among the most relevant intermediate ISDoH. Structural social determinants of influence on Indigenous populations such as colonialism, racism, and self-determination are identified as distal ISDOH (Czyzewski, 2011; Reading & Wien, 2009). In addition to the impacts of the SDOH, Indigenous populations simultaneously experience the complex interplay between the proximal, intermediate, and distal ISDoH, thereby further impacting these populations (Reading, 2009; Reading & Wien, 2009).

Proximal Determinants. The proximal social determinants of health include factors that primarily effect the physical, mental, emotional, or spiritual health and well-being of an individual, community, or population (Reading & Wien, 2009; Greenwood & De Leeuw, 2012). Important proximal determinants impacting health outcomes for First Nations populations include inequitable access to healthcare services and supplies, insufficient or inadequate housing, lack of adequate and nutritious food sources, and inequitable access to clean water, all of which are strongly associated with high transmissibility of infectious disease and illness (Zarychanski et al., 2010; Reading & Wien, 2009; Lavoie et al., 2021). Many Canadian First Nations experience poorly maintained or nonexistent infrastructure, housing insecurity, food insecurity, as well as

cultural and traditional devaluation (Gordon et al., 2015; Reading & Wien, 2009; Lavoie et al., 2021). Geographic remoteness is a key factor in determining the level of access to healthcare, with most underserved communities located in isolated and remote regions of Canada (Schiff & Moeller, 2021, p. 15). Inequitable access to healthcare services and supplies may be particularly detrimental within the context of a viral pandemic when considering alternate proximal determinants such as overcrowded housing conditions, and the nonexistent infrastructure that often translates to inadequate access to clean water supply (Schiff & Moeller, 2021, p. 15). In Ontario, the location of many First Nations in predominantly northern and remote regions of the province results in difficulties facilitating the transport of medical equipment, supplies, and services, and complicates efforts to secure long term medical professionals and practitioners (Lavoie et al., 2021; MacLeod et al., 2004; Mazareeuw et al., 2018).

Policy decision-making impacts remote First Nations in Ontario since most funding is allocated to more populous regions of the province, which are primarily non-Indigenous (Collins et al., 2017). Where it is possible to transport medications into remote First Nations, the availability and lifespan of pharmaceuticals, supplies, and personal protective equipment must be continually assessed to inform accurate decisions about shipment protocols (Moghadas et al., 2011; Gordon et al., 2015). Time constraints in shipment as well as potential expiration of medications, vaccines, and personal protective equipment were identified as a significant challenge in serving remote First Nations during the H1N1 pandemic (Moghadas et al., 2011; Charania & Tsuji, 2011).

Between 2006 and 2016, the on-reserve First Nations population grew by nearly 53%, leading to further crowding in communities already facing housing crises as a result of inadequate and insufficient infrastructure, maintenance issues, and construction that was poorly

equipped for extreme temperatures (Statistics Canada, 2016; McNally & Martin, 2017; Webster, 2015). In many remote First Nations in Ontario, winter conditions are more extreme than in the rest of the province, resulting in difficulties and high costs associated with accessing building supplies, and constructing adequately insulated and ventilated dwellings (McNally & Martin, 2017; Webster, 2015). Shipment of products for the maintenance, repair, and construction of houses is often dependent upon limited season ice roads or transport via small aircraft, making it extremely difficult for many communities to sufficiently address community housing needs (McNally & Martin, 2017; Webster, 2015).

As of February 15, 2020, 61 long-term drinking water advisories persisted across Canada, many of which were located in remote northern First Nations of Ontario; some extending back for more than 25 years (Indigenous Services Canada, 2020). With these long-standing issues surrounding accessibility to potable water sources, basic hygienic and disinfection processes become difficult to manage, especially within the scope of a highly transmissible viral pandemic such as COVID-19 (Yang et al., 2020). Many communities facing boil water advisories may not possess a sufficient water supply if forced to go into immediate lockdown and may not have the time or resources available to meet community needs for the duration of closure (Chief L. Cowie-Carr, personal communication, March 31, 2021). Lack of a potable water source within the community could mean the increase of spread of disease, as well as a diminished capacity to manage disease severity and outbreak (Chief L. Cowie-Carr, personal communication, March 31, 2021; Yang et al., 2020).

Intermediate Determinants. Healthcare is a critical intermediate social determinant of health (Lavoie et al., 2020). The existence of multiple jurisdictions each with differing policies relevant to the health and wellbeing of First Nations peoples has resulted in the discordant

application of various health policies at each tier of government (Collins et al., 2017). Overlapping jurisdictions create conflicts in terms of identifying effective procedures to follow and assignment of the responsibility for provision of care for First Nations in Ontario (Lavoie et al., 2020; Collins et al., 2017; Gordon et al., 2015; Mazareeuw et al., 2018). A tripartite system between federal, provincial, and local First Nations governments share joint responsibility for the provision of services, leaving vast gaps in the consistency for public health delivery, support, and funding (Lavoie et al., 2020; Collins et al., 2017). The outcome of this tripartite structure has been varying levels of healthcare delivery for First Nations, limited numbers of personnel and facilities within each community, and discrepant funding formulae (Lavoie et al., 2010a; 2010b; 2020; Mazareeuw et al., 2018; Collins et al., 2017).

Distal Determinants. ***Colonialism.*** Colonialism is an important historical consideration in the context of pandemics, as are the associated neocolonial policies that provide the contemporary framework for systemic racism and persistent marginalization of Indigenous peoples in social, economic, and political strata (Truth & Reconciliation Commission of Canada, 2015). The intent of colonialism in Canada has been to facilitate the disappearance of Indigenous peoples. The disappearance of Indigenous civilizations has been orchestrated through acts of settler violence in Indigenous societies, and innumerable acts of institutional abuse and systematic degradation that have had lasting effects on the health and wellbeing of these populations (Lavoie et al., 2010a; Czyzewski, 2011; Henderson & Wakeham, 2009; Pearce et al., 2019; Horrill et al., 2019). The Indian Act has been a primary tool for the implementation of ongoing methodical degradation that is currently upheld in Canadian federal legislation (Morden, 2016).

Nine years after the establishment of Canadian confederacy, federal authorities created the Indian Act of 1876. Enactment of this legislation meant that Indigenous peoples of Canada were forced to concede controls over nearly all aspects of autonomy, status, land, resources, education, and health (Reading & Wien, 2009; Truth & Reconciliation Commission of Canada, 2015). These populations were dispossessed of their traditional territories and were subsequently forced onto small reserves as a result of the overarching system of colonial oppression and suppression. The result of settler-colonial genocide in Canada has been the vast deconstruction of Indigenous social, economic, and health systems (Lavoie et al., 2010a; Morden, 2016; Pearce et al., 2019; Horrill et al., 2019).

First Nations continue to experience social, economic, and political disadvantages as a result of colonialism (Kim, 2009; Pearce et al., 2019; Horrill et al., 2019). The policies implemented to force assimilation have dissolved cultural continuity and have unfavourably shaped the respective health outcomes of these populations (Reading & Wien, 2009; Lavoie et al., 2010a). In 2015, the Canadian government affirmed their responsibility for inequalities following the report of the Truth and Reconciliation Commission of Canada, which outlined intergenerational trauma imposed upon Indigenous peoples through acts of systemic discrimination, persecution, and genocide in the form of the residential school system and through policies initiated and supported through the Indian Act (Lavoie et al., 2010a; Truth & Reconciliation Commission of Canada, 2015; Morden, 2016). The effects of these policies have crossed multiple lineages; thus, conceptualizations of health inequities must include the impact of colonization, colonialism and intergenerational trauma in order to fully capture the indicating precursors to poorer health outcomes when compared to the general Canadian population. There are two critical inequities associated with colonization and colonialism that influence the life

course and health outcomes for Indigenous populations; the residential school system, and the persistent loss of socioeconomic status over time due to systematic oppression (Kim, 2019; Lavoie et al., 2010a; Pearce et al., 2019; Horrill et al., 2019; Truth & Reconciliation Commission of Canada, 2015).

Residential Schools. Implementation of the Indian Act of 1876 provided the impetus for the residential school system which persisted until 1996, when the last federal residential school was closed (Regan, 2010; Truth & Reconciliation Commission of Canada, 2015). This led directly to the disruption of spiritual and cultural values for Indigenous families and communities across the country (Reading & Wien, 2009; Truth & Reconciliation Commission of Canada, 2015). The social, cultural, political, and interpersonal impacts stemming from the residential school system have been some of the most persuasive by-products of colonialism (Kim, 2019). Adverse policies have initiated the deterioration of overall health, well-being, and sociocultural functioning that endure in the contemporary societal fabric (Kim, 2019; Lavoie et al., 2010a; Wilk et al., 2017; Smallwood et al., 2021). Residential school attendance was mandated by the Canadian government to ensure assimilation of Indigenous children into the broader culture, with integration continuing contemporaneously under Canadian child welfare policies (Blackstock, 2011).

Childhood and adolescence are crucial periods for formative development and relational maturation, making these imperative times to consider (Blackstock, 2011; Wilk et al., 2017). In childhood, access to quality education is a protective factor for future health status through the promotion of academic and social skill development, self-care and health literacy, and the fostering of positive interpersonal relationships (Blackstock, 2011; Elias et al., 2012). Nurturance and protective development are possible through the educational setting, but only if

facilitated with caring support networks, and ample resources for the maintenance of a rich learning environment. Residential schools were not intended to provide an optimal environment for the advancement of learning and healthy cognitive or social development (Elias et al., 2012; Truth & Reconciliation Commission of Canada, 2015).

Government officials and the Royal Canadian Mounted Police forcibly took children from their families and home communities. These children were abruptly taken to residential schools where many remained for most of their formative years, placing extreme emotional duress on Indigenous children, parents, families, and communities (Regan, 2010, Truth & Reconciliation Commission of Canada, 2015). Children remained in isolation from their homes, with many perishing in their efforts to return to their communities and reunite with their families (Reading & Wien, 2009). Family separation in childhood has been shown to be a major risk factor for mental health difficulties such as depression and anxiety (Gilman et al., 2003; De Bellis & Zisk, 2014; Wilk et al., 2017). Family stress in childhood and adolescence can result in dysregulated brain functioning in subsequent years of life (Taylor et al., 2006; De Bellis & Zisk, 2014). These and other impacts are clear indicators of how enactment of the residential school system directly obstructed the mental health of Indigenous populations forced to leave their families and attend these schools.

Ethnocentric standards were mandated in residential schools and children were prohibited from speaking their native languages or practicing any cultural customs (Regan, 2010). Many students who attended residential school experienced significant loss in cultural identity and extensive shame due to traumas and abuses suffered in these institutions (Reading & Wien, 2009). Cultural identity and traditional cohesion are strong indicators of health for Indigenous peoples, thus the loss of these values continue to have direct implications on the

overall well-being of these populations (Reading & Wien, 2009; De Bellis & Zisk, 2014; Wilk et al., 2017; Smallwood et al., 2021). Children were subjected to pervasive verbal, emotional, physical, sexual, and spiritual abuse, further compounding the effects of lost cultural identity (Reading & Wien, 2009; Regan, 2010). Abuse during childhood has been associated with poor health status leading to increased hospitalizations for physical and psychological illnesses in adulthood (Moeller et al., 1993; De Bellis & Zisk, 2014). Residential school survivors experience increased rates of anxiety, depression, suicidal ideation, and suicide attempts (Elias et al. 2012). According to Kim (2019), Indigenous families with residential school histories demonstrate increased rates of stress, and decreased overall wellness, indicating that colonialism is directly linked to cumulative health inequities experienced by Indigenous peoples in Canada (Bombay et al., 2014; Truth & Reconciliation Commission of Canada, 2015; Wilk et al., 2017; Smallwood et al., 2021).

Comorbid Health Conditions

Although most coronaviruses are mild in humans, COVID-19 can be quite severe, particularly for individuals who are elderly or have underlying health conditions (Huang et al., 2020; Algahtani et al., 2020; Public Health Agency of Canada, 2020). High risk populations for communicability and transmission of COVID-19 include older adults, individuals with underlying medical conditions such as heart, kidney, or liver disease, hypertension, diabetes, respiratory disease, cancer, or individuals with a compromised immune system resulting from illness or treatment such as chemotherapy and immune suppressant therapy. Populations living in overcrowded or poorly ventilated areas are also considered to be at an increased risk of transmission (Algahtani et al., 2020; Public Health Agency of Canada, 2020).

According to the First Nations Regional Health Survey (2018), nearly 60% First Nations adults, 33% First Nations youth, and 28.5% of First Nations children reported having one or more chronic health conditions. Among the most frequently reported conditions were high blood pressure (17.2% compared to 12.0% for non-Indigenous counterparts), diabetes (15.9% versus 7.3% for non-Indigenous), asthma (>10.0% versus 8.3%), heart disease (7.1% versus 5.0%), kidney disease (3.3% versus 1.0%), emphysema, chronic bronchitis, or chronic obstructive pulmonary disease (COPD) (2.5% versus 1.8%), cancer (37.0% versus 7.1%), tuberculosis (2.4% versus 0.06%), or HIV/AIDS (0.2% versus 0.17%) (First Nations Regional Health Survey, 2018). The presence of two or more chronic health conditions among First Nations children aged 0 to 5 was (8.4%, 95% CI: 6.9, 10.1); aged 6-11 (13.0%, 95% CI: 11.5, 14.6); aged 12-14 (12.5%, 95% CI: 10.8, 14.5); aged 15-17 (17.5%, 95% CI; 15.8, 19.4); aged 18-29 (20.8%, 95% CI: 18.4, 23.4); aged 30-39 (31.8%, 95% CI: 28.0, 35.9); aged 40-49 (43.4%, 95% CI: 40.1, 46.7): aged 50-59 (55.3%, 95% CI: 52.4, 58.2): aged 60 or older (74.6%, 95% CI: 72.1, 77.0) (First Nations Regional Health Survey, 2018).

Impacts of Determinants of Health on Indigenous Health and Well-Being

With more than half of all First Nations communities in Ontario being located in geographically remote or isolated regions of the province, there is limited or minimal availability of healthcare services and supplies (Horrill et al., 2018; Mazareeuw et al., 2018). Primary healthcare providers are not available consistently in most communities, often resulting in the inundation of health professionals during their locum periods (Gordon et al., 2015). Furthermore, information regarding viral prevention and intervention is most often presented in English, making it difficult for Indigenous language speakers to clearly comprehend or disseminate information regarding appropriate interventions (Charania & Tsuji, 2011). Barriers

to effective pandemic mitigation strategies have been identified as lack of supplies, insufficient monies, lack of trained personnel, and poor community awareness (Gordon et al., 2015; Charania & Tsuji, 2012). These barriers make it difficult to enforce mitigation measures which could effectively address community outbreak concerns (Charania & Tsuji, 2012). The timely distribution of pharmaceutical interventions to remote locations as well as culturally appropriate education is crucial for improving outcomes, but this is only achievable through a coordinated effort on the part of federal, provincial, and territorial governments (McNeill & Topping, 2018; Smith et al., 2021).

There may be time delays in the rates at which infection rise, as well as increased delays between infection and time of hospitalization for individuals living in remote First Nations that are largely attributable to geographic isolation and remoteness (Morrison et al., 2014), Although living in remote or isolated communities may initially provide a barrier to the introduction of infectious disease or illness, once the community is exposed it is very difficult to moderate the transmission and spread of illness (Gordon et al., 2015; Morrison et al., 2014; Kyoon-Achan & Write, 2020; Craft et al., 2020). Characteristics of many Ontario First Nations such as geographic remoteness, and inadequate access to healthcare impact community pandemic response capacity significantly (Richardson et al., 2012; Gordon et al., 2015). The ability to mitigate the spread of infectious disease or illness is heavily reliant upon the ongoing accessibility of healthcare professionals and supplies, making effective response difficult to achieve and maintain (Gordon et al., 2015). Non-pharmaceutical interventions are especially vital during pandemics and should be implemented where possible as a primary intervening measure during public health emergencies (Charania & Tsuji, 2012; Gordon et al., 2015; McNeill & Topping, 2018).

Research by Charania and Tsuji (2011; 2012) indicate that mitigation measures should incorporate traditional values and processes to facilitate community acceptance and further enhance adherence. A very clear link has been established between social factors and health outcomes for First Nations populations in Canada and Canada's response has been to focus on emergent services rather than preventative measures, causing a greater burden of illness for impacted communities (Kirmayer et al., 2011; VanderBurgh et al., 2020; McNeill & Topping, 2018).

During a pandemic, it may be acceptable to sacrifice human rights for the benefit of the broader populous through forced isolation or other mitigation measures (World Health Organization, 2020), however these actions may pose a greater concern for First Nations than other populations. Rural and remote First Nations may not have adequate notice to prepare for an immediate lockdown and thus, may be forced to survive under the constraints of compounded issues such as inadequate water supply, insufficient food resources, overcrowded housing, and limited or poor access to other essential supplies and personal protective equipment (Chief L. Cowie-Carr, personal communication, March 31, 2021).

Pandemic Impacts on Indigenous Populations

There is a long-documented history demonstrating that First Nations and other Indigenous populations are at an increased risk of experiencing more severe outcomes associated with disease and illness generally (World Health Organization, 2009; Rubinstein et al., 2011; Richardson et al., 2012; Spence & White, 2010; Betts et al., 2023). This is particularly concerning in the context of infectious disease pandemics (World Health Organization, 2009; Boggild et al., 2011; Robinson et al., 2012). Although pandemics impact the broader population

indiscriminately, there is a significant demarcation for Indigenous peoples globally (Power et al., 2020; World Health Organization, 2009). Prior to COVID-19, the last major pandemic event to impact First Nations in Canada was the H1N1 pandemic of 2009 – 2010. Findings from the H1N1 pandemic demonstrate that Indigenous populations experienced a higher incidence of infection from the virus as well as more severe outcomes associated with illness when compared to non-Indigenous populations (World Health Organization, 2009; Lee et al., 2008; Wilkinson et al., 2010). Limited access to healthcare was a perpetuating factor leading to increased rates of respiratory illness For Ontario First Nations populations during the H1N1 pandemic when comparing on-reserve individuals to those living off-reserve (Morrison et al., 2014). Those living on reserve experienced a 44% increase in rates of hospitalization and emergency room visits compared to those living off reserve (VanderBurgh et al., 2020). Analyses also found that First Nations were disproportionately impacted by the virus, with individuals living on reserve being 2.8 times more likely to be hospitalized after contracting H1N1 and 6.5 times more likely to be admitted to ICU with the virus than their non-Indigenous counterparts (Boggild et al., 2011; Robinson et al., 2012). Poorer outcomes for Indigenous peoples were further associated with infection and a greater risk of mortality when compared to non-Indigenous counterparts (Mostaco-Guidolin, 2013; Moghadas et al., 2011). Historically, pandemic vulnerability has been directly related to poorer health status, diminished health outcomes, increased rates of infectious disease and illness, higher rates of mortality, as well as broader impacts caused and further complicated by the determinants of health for Indigenous populations and their intersections (Kelm, 1999; World Health Organization, 2009; Robinson et al., 2012; Spence & White, 2010; Boggild et al., 2011).

In response to the 2009 H1N1 event, federal and provincial governments developed pandemic preparedness response guidelines with the purpose of mitigating the severity of impacts on Indigenous populations during subsequent public health emergencies (National Collaborating Centre for Aboriginal Health, 2016; Mostaco-Guidolin, 2013). Health inequities, limited access to resources, disruptions of cultural and traditional values, and minimal socio-political autonomy are endemic to Indigenous peoples around the world, further complicating existent susceptibility to illness and disease (World Health Organization, 2009; Power et al., 2020; Kirmayer et al., 2011). Colonization has meant the disruption of cultural, traditional, social, and economic systems for Indigenous peoples living within Canada, and this has directly resulted in widespread social inequities, shorter life expectancies, reduced quality of life, intergenerational poverty and traumas, and poorer physical and mental health (Kirmayer et al., 2011; Greenwood et al., 2018; Power et al., 2020). Colonization has shown significant effects on the social determinants of health, thereby exacerbating pandemic vulnerability for Indigenous peoples (Greenwood et al., 2018. MacDonald & Steenbeek, 2015).

Chapter 2: Literature Review

Introduction

The health of Indigenous populations in Canada has primarily been shaped through the enactment of legislation and policies that remain harmful to the physical, mental, emotional, and spiritual well-being of Indigenous peoples (Smallwood et al., 2021; Boyer, 2011; Reading & Wien, 2009). First Nations health in Canada is not regulated by a single governing body but is instead governed through a tripartite system that divides responsibility among federal, provincial, and local community leadership. This tripartite system of regulation often translates into delays in health service acquisition, excessive time constraints in accessing healthcare services and supplies, disruptions in treatments or therapies, and more severe outcomes for Indigenous populations living in isolated or geographically remote regions of the country (Lavoie, et al., 2021; Lavoie et al., 2016). As a direct by-product of the existent health disparities endured by many First Nations' peoples, increased vulnerability to infectious disease and pandemic illness are a primary concern. A review of literature relevant to response efforts, preparedness measures, barriers to the attainment of supports and services, and determinant factors of influence for First Nations in Canada during pandemics will provide the context for the qualitative research.

Literature Search Strategy

CINAHL was chosen as a primary database of interest for the proposed research because of its focus upon cumulative indices to nursing and allied health literature. PubMed was chosen for its focus upon biomedical journals and periodicals, providing bibliographic citations and authors' abstracts relating to all aspects of medicine, nursing, the healthcare system, and

preclinical sciences. Medline was used for the current literature search because of its focus upon international literature on biomedicine, including the allied health fields and the biological and physical sciences, humanities, and information science as they relate to medicine and health care. Web of Science was selected for their multidisciplinary index to the journal literature of the arts and humanities, socials sciences, and science. The rationale behind the selection of these four databases was to capture the most representative conception of COVID-19 in conjunction with the associated health outcomes resultant from pandemic impacts on First Nations in Canada and Ontario. Articles that explored global Indigenous experiences of COVID-19 and infectious disease or illness were also included where Canadian Indigenous populations were featured. The total number of articles reviewed for the combined searches were 2,521, with 61 articles qualifying for inclusion per predetermined criteria. Google Scholar was used to identify supplementary background information where required. The search queries and results are outlined in *Appendix A*.

Overview of Findings

Primary themes that emerged during the literature review included Pandemic Response, Indigenous Preparedness and Associated Impacts, Illness Prevention, Health Promotion, Healthcare and Surveillance, Lessons Learned from First Nations in Canada, and a Summary of Recommendations for pandemic mitigation. Themes have been organized and will be presented to represent the historical and ongoing status of facilitators and barriers to effective pandemic response for First Nations and other Indigenous communities in Canada. For the purposes of this informational review, I had the privilege of speaking with Chiefs and other Indigenous

leadership to better understand contextual factors impacting the ability to respond effectively to public health emergencies such as the COVID-19 pandemic.

Pandemic Response

Novel respiratory and other emerging infectious disease pathogens provide a continual risk to global and Canadian health, causing particular concern for marginalized segments of the population (McNeill &Topping, 2018; Ali et al., 2020; Combden et al., 2022; Lee et al., 2023). Experiences with global outbreaks such as the H1N1 and COVID-19 pandemics demonstrate that the coordination of efforts regarding decision making and information sharing can be extremely complicated, especially during periods of high stress (McNeill & Topping, 2018; Morrison et al., 2014; McMahon et al., 2020). Canada has been faulted globally for their lack of adequate pandemic response and their failure to maintain pertinent surveillance systems linked to the WHO's alert program (Combden et al., 2022). Failure to recognize the imminence of impending pandemic outbreaks, combined with current antiquated reporting systems in use by the PHAC have been criticized as unnecessary contributors to effects experienced by Indigenous populations (Combden et al., 2022). Further, effective mitigation efforts require accurate representations of a given population's sociodemographic, health, and behavioural indicators, none of which have been collected for Indigenous populations with the degree of specificity required for effective planning (Lavoie et al., 2020). Additional issues arise for planning in First Nations and other Indigenous communities when governments assume homogeneity for all citizens, and in doing so fail to recognize the vast cultural and traditional diversity of Indigenous peoples across the country (Lavoie et al., 2020; Betts et al., 2023).

Numerous time delays arise in the transfer of vital information during high pressure periods such as viral outbreaks, with each tier of government often providing incongruent

information for protocol measures (Fleury & Chatwood, 2022; Lavoie et al., 2020; McNeill & Topping; 2018; Morrison et al., 2015). Operational measures may not be clear for health professionals, resulting in unnecessary confusion about appropriate actions, protocols, and procedures to follow (Lavoie, 2013; McNeill & Topping, 2018; Morrison et al., 2014; Combden et al., 2022). Delayed or nonexistent communication regarding ongoing pandemic intervention strategies has been expressed as a main concern impacting adherence to effective mitigation for many First Nations during the COVID-19 pandemic (Fleury & Chatwood, 2022). Fleury and Chatwood (2022), indicate that discussing risk attributes for community members and increased health communication delivered from First Nations' leadership could be effective methods moderating the spread of illness and infection.

Smith and colleagues (2021), affirm that although the current pandemic has been devastating for the Canadian population in general, remote and isolated First Nations continue to experience a disproportionate impact from the virus due to overcrowded and inadequate housing, mobility or transportation limitations, lack of potable water resources, and poor access to medical services and supplies. Compounding factors leading to more severe outcomes for these populations include high rates of comorbid health conditions, and hesitancy to access and adhere to medical treatments or interventions as a result of the colonial legacy of medical maltreatment (Smith et al., 2021; Fleury & Chatwood, 2022). Moderating the spread of infection within First Nations requires a comprehensive and interdisciplinary approach that simultaneously engages Indigenous values and prerogatives with jurisdictional public health measures (Smith et al., 2021; Craft et al., 2020).

Roles for preventative and interventive action taken in coordination with optimally viable procedural regulations need to be flexible and adaptive to respond to the specific needs of each First Nation during a public health emergency (Lavoie et al., 2010a; 2010b; Lavoie, 2013; Charania & Tsuji, 2011; 2012). This is a fundamental priority for pandemic response in addressing the needs of First Nations during public health emergencies in Ontario, since effective action requires the coordination of efforts across federal, provincial, and local/regional levels of government while simultaneously acting in accordance with the requirements of each First Nations' determinations (Fleury & Chatwood, 2022; Richardson & Crawford, 2020; Charania & Tsuji, 2011; 2012). Consistent implementation of action items across jurisdictions must be contingent upon the individual needs of each community, rather than the current 'patchwork' system designed to provide immediate action without consideration of long-term effects or outcomes (Fleury & Chatwood, 2022; Ali et al., 2020).

Indigenous Preparedness & Associated Impacts

Colonialism and colonization have innumerable ongoing impacts for Indigenous peoples living within Canada that include broad systemic barriers to equity, causing impediments to the access of timely and effective healthcare (Richardson & Crawford, 2020). Canada's constitutionally identified Indigenous peoples have different levels of government responsible for the delivery of healthcare, and these variations leave fundamental gaps in the provision of essential services (Fleury & Chatwood, 2022; Richardson et al., 2012; Morrison et al., 2014). In Canada, the federal government typically provides health funding for Inuit and First Nations populations while Metis peoples are primarily funded under provincial health jurisdictions (Morrison et al., 2014; Lavoie et al., 2010a). This disjointed funding system is further complicated by the fact that First Nations and Metis populations may live geographically close to

one another yet experience differential access to healthcare and non-insured health coverage (Morrison et al., 2014).

Challenges faced by Indigenous communities during public health emergencies and other crises are vastly different from those faced by the general population and differences must be acknowledged and supported in the development of pandemic preparedness plans (Chief L. Cowie-Carr, personal communication, March 31, 2021; Fleury & Chatwood, 2022; Clark et al., 2021; Richardson & Crawford, 2020; Charania & Tsuji, 2011; 2012; Betts et al., 2023). Indigenous populations living in remote locations of Canada face increased challenges resultant from limited access to, and the delivery of, healthcare services overall (Chief L. Cowie-Carr, personal communication, March 31, 2021; Morrison et al., 2014; Fleury & Chatwood, 2022; Richardson & Crawford, 2020).

Although Richardson and Crawford (2020) claim that First Nations have experienced lower rates of infection and illness from COVID-19 when compared to the general Canadian population, their evaluation of rates of infection in Indigenous communities likely misrepresent the true breadth of impact for these populations since they were completed in the early stages of the COVID-19 pandemic at a time when many First Nations were implementing strong lockdown and mitigation measures autonomously. In addition, the authors fail to account for the relative size of First Nations' communities in relation to the rates of infection, as well as the delayed community-exposure that occurs within geographically remote or isolated regions. The latter is evidenced by Clark and colleagues (2021), who report that 58% of Canada's overall mortality rate during the current pandemic has been felt by Indigenous peoples living on-reserve.

Illness Prevention, Health Promotion, Healthcare, and Surveillance

Challenges emerged for Indigenous populations in Canada with the implementation of vaccination policies during the second wave of H1N1 in relation to determining priority groups, eligibility criteria, and workforce requirements (Boggild et al., 2011). Similar trends have been observed during the COVID-19 pandemic, with initial reports indicating hesitancy to receive pharmaceutical interventions because of poor or nonexistent communication regarding vaccine efficacy or risk attributes for viral infection (Fleury & Chatwood, 2022; Mosby & Swidrovich, 2021). An evaluation of educational resources available for First Nations' in Ontario related to COVID-19 demonstrated that minimal information had been provided surrounding symptomology, susceptibility, or course of treatment for the virus (Fleury & Chatwood, 2022).

Cross-cultural barriers have remained key challenges during the current pandemic to mitigating the spread of infection, with many healthcare providers who are practicing within First Nations finding it difficult to develop trusting relationships if considered an 'outsider' (Clark et al., 2021; Lavoie et al., 2010a; 2010b; Lavoie, 2013). Language differences may provide additional barriers to training or interacting with individuals in some communities, particularly in remote regions of the province where the dominant language may not be English (Charania & Tsuji, 2011; 2012; Driedger et al., 2013; Pollock et al., 2012).

The retention of healthcare staff is an ongoing issue and this has impacted the provision of care during COVID. Many staff have been required to work long stretches while boarding away from their homes in remote communities (Lavoie et al., 2010a; 2010b; Lavoie, 2013). Fostering positive and trusting relationships with Indigenous nursing leadership has yielded significant returns for Indigenous communities thus far, and may be crucial for improvements in vaccine distribution, advocacy, and viral interventions (Clark et al., 2021). The continued

resourcing of Indigenous nursing leadership must be a priority during COVID-19 as this provides community members with trusted and efficient avenues to care that are culturally responsive (Clark et al., 2021).

Where public health records exist in First Nations, they are often kept in a paper-based system rather than the electronic systems being utilized elsewhere in Canada, making tracking of illness and vaccines difficult (LeBlanc et al., 2019; Lavoie et al., 2010b; Lavoie, 2013). This may lead to issues with maintaining accurate records and establishing effective surveillance systems. Regulations enacted to protect public health are often rendered obsolete since few individuals are trained in policing these systems. The importance of utilizing virtual resources to address health and assessment needs became evident during COVID-19, with many care providers being forced to adapt quickly to patient or client needs under pandemic lockdown (McMahon et al., 2020). McMahon and colleagues (2020), acknowledge that the implementation of virtual care systems requires further examination into aspects surrounding costs, equity, accessibility, and availability of resources in the varied jurisdictions across Canada, but reflect that this could be a meaningful starting point for the enhancement of supports where geographic remoteness or isolation are barriers to functional healthcare provision.

Lack of adherence and compliance with regulations may arise from inadequate efforts to present educational materials in a manner that is in alignment with cultural protocols, which may lead to an increased burden of illness, particularly in northern and remote communities in the province (Fleury & Chatwood, 2022; Charania & Tsuji, 2011; 2012; Richardson & Crawford, 2020). Geographic isolation or remoteness further complicate issues for First Nations since accessing and obtaining healthcare services requires travel into larger urban centres within the province (Fleury & Chatwood, 2022). Immediate lockdowns and other provincially mandated

public health measures unfairly burden Indigenous populations since many are unable to facilitate care for their citizens without the ability to access supports, resources, or healthcare services from proximal municipalities (Chief L. Cowie-Carr, personal communication, March 31, 2021; Etowa et al., 2021).

Vast rates of infection during the COVID-19 pandemic have led to the inundation of the Canadian healthcare system, with the disproportionate allocation of services and resources being directed at pandemic response (Etowa et al., 2021). This has resulted in delayed diagnoses and treatments for non-COVID related health issues, poorer overall health outcomes, lack of adherence to interventive therapies, and a nearly unmanageable strain on healthcare professionals (Etowa et al., 2021). Indigenous peoples and other vulnerable segments of the population experience a majority of the burden caused by the reprioritization of healthcare services to address pandemic impacts, and are less able to access or obtain necessary care (Etowa et al., 2021; Richardson & Crawford, 2020; Clarke, 2016). Etowa and colleagues (2021), reported that the top concerns identified for accessing all healthcare services, (specialized, diagnostic, non-emergent surgical, primary contact, and informational), were language barriers, wait times, travel, and financial costs associated with movement from remote or isolated regions of the province. Factors related to sex, level of education, region of residence, and perceived health status were contributing aspects of an individual's ability to obtain timely healthcare services, calling into question Canada's approach to health equity (Etowa et al., 2021; Richardson & Crawford, 2020; Clarke, 2016).

Lessons Learned: First Nations in Canada

First Nations in Manitoba. Investigations into outcomes of the H1N1 pandemic of 2009 – 2010 have offered minimal tangible guidance for preparedness measures or response

efforts during COVID-19 in First Nations and other Indigenous communities in Canada (Kyoon-Achan & Write, 2020). While Canadian and provincial governments are endeavouring to work in partnership with global health initiatives to alleviate the effects of COVID-19, First Nations have often been left out of general jurisdictional and fiduciary efforts (Kyoon-Achan & Write, 2020; Craft et al., 2020).

During the 2009 H1N1 outbreak, a tripartite table was established in Manitoba that included representatives from provincial and federal governments as well as First Nations and Metis self-governing organizations (Richardson et al., 2012). As part of this endeavour, the provincial minister of health liaised regularly with the tripartite table to develop communication strategies for access to primary healthcare in northern regions of the province (Richardson et al., 2012). A sub-committee responsible for equity and ethics was established to collect feedback from communities and to ensure First Nations and other Indigenous communities would receive equitable access to vaccines and other health resources. The sub-committee was responsible for the facilitation of responses to pandemic outbreak, and for the allotment of planning resources that were deployed to remote areas for the delivery of patient care (Richardson et al., 2012). Indigenous patients experiencing severe illness and requiring hospitalization were obliged to leave their home communities for transport to the southern part of the province in order to access critical care health services, which must be considered in prospective efforts to improve outcomes (Richardson et al., 2012; Morrison et al., 2014).

Feedback from Indigenous leadership stressed the importance of developing self-governance systems for health services and supplementation. In Manitoba, H1N1 flu kits were developed and distributed with the assistance of Manitoba Health and delivered to First Nations communities where pharmacies and nursing stations were absent or not readily accessible

(Richarson et al., 2012). Governments supported the use of traditional medicines where desired and when it was indicated that relevant resources could be located (Richardson et al., 2012). Gauging from previous experiences with pandemic response in First Nations, there must be an understanding that organizations and communities have developed their own plans for response to emerging crises such as viral pandemics (Morrison et al., 2014; Richardson et al., 2012; Charania & Tsuji, 2011; 2012). This underscores the necessity for continual communication at all levels of the healthcare system, in coordination with First Nations' leadership for the development of effective and coherent mitigation strategies that align with cultural and traditional values (Charania & Tsuji, 2011; 2012; Richardson et al., 2012; Morrison et al., 2014; Richardson & Crawford, 2020).

Structural and administrative inequities caused by a lack of infrastructure funding contribute further to complications during emergent crises for First Nations and other Indigenous populations across Canada (Kyoon-Achan & Write, 2020; Pickering et al., 2023). A key recommendation for improved mitigation has been for the social determinants of health to be remedied for Indigenous populations, but in the years following the H1N1 pandemic very little has been done in this regard, leading to poorer outcomes related to COVID-19 (Kyoon-Achan & Write, 2020; Fleury & Chatwood, 2022; Pickering et al., 2023). Moderation of the spread of COVID-19 in geographically remote First Nations would therefore require that these factors be addressed in coordination with common findings that traditional values and approaches to healing and wellness must be honoured.

A remote and isolated First Nation in northern Manitoba has been successful thus far in averting a COVID-19 outbreak. This community has built internal capacity toward self-determination and self-governance as central aspects of their re-empowerment and

disestablishment from colonialism, and further attribute these features as foundational to the realization of their prevention measures (Kyoon-Achan & Write, 2020). As an initial step toward addressing the effects of COVID-19, community members took initiative to educate and inform themselves on viral transmission, susceptibility, risk factors, and critical attributes for prevention (Kyoon-Achan & Write, 2020). Available resources and services were continually assessed in order to determine existent gaps for redress, and all deficiencies that could contribute to infection or outbreak were illuminated (Kyoon-Achan & Write, 2020). Appropriate public health measures in coordination with effective clinical supports have been identified as contributors to prevention, particularly where community members could be educated about individual and collective susceptibilities to illness (Kyoon-Achan & Write, 2020).

A community pandemic planning and preparation team comprised of leadership, directors, and program managers led emergency response measures within the community to ensure that all aspects of the preparedness plan were in order, with the understanding that the optimal approach to improving outcomes with COVID-19 was to prevent initial infection (Kyoon-Achan & Write, 2020). An emergency planning document was developed to foster a sense of readiness for leadership and membership, serving as a directive for immediate action in the event of outbreak (Kyoon-Achan & Write, 2020). Joint decision-making was essential for all manners of mitigation; guidelines for at-risk segments of the population, protocol for public gathering spaces, and lockdown or quarantine procedures (Kyoon-Achan & Write, 2020). Information from provincial public health agencies was requested by community leadership and summaries were provided so that the pandemic team could evaluate the information to guide their First Nation's mitigation efforts (Kyoon-Achan & Write, 2020). For individuals more aligned with cultural values and wellness, traditional healers and medicine people came together

to provide their support, thereby fostering an essential collaboration between traditional and biomedical approaches that ultimately led to improved outcomes (Kyoon-Achan & Write, 2020).

Manitoba provincial public health agencies facilitated infection control training that incorporated instruction on the proper use of PPE, sanitizing procedures, and methods for using household items for effective cleansing and disinfection purposes (Kyoon-Achan & Write, 2020). Food and essential items were distributed to high-risk persons such as elders and those with comorbid health conditions to ensure the minimization of exposure to pathogens, and a pre-emptive state of emergency was declared by the First Nation to prevent COVID-19 from entering the community (Kyoon-Achan & Write, 2020). Quarantine centres were established, housing persons returning from urban centres for a mandatory two-week observation period until a negative infection value could be validated, thereby safeguarding the well-being of all community members (Kyoon-Achan & Write, 2020).

During emergent crises such as pandemics, funding is distributed to each province, with the onus upon provincial leadership to manage and enforce public health measures independently (Kyoon-Achan & Write, 2020; Craft et al., 2020), leading to the inequitable distribution of resources, particularly where Indigenous communities are concerned (Craft et al., 2020). Indigenous leadership may be provided with information regarding proposed interventive and preventative methods, however dissemination and translation for community members remains a challenge where pandemic guidelines have not been pre-emptively established (Kyoon-Achan & Write, 2020). The Manitoba government has responded productively to First Nations within the province through the provision of PPE, the dispersal of emergency preparedness funds, and the staging of continuous information conferences to ensure Indigenous populations are effectively informed and supported throughout COVID-19 (Kyoon-Achan & Write, 2020).

According to Kyoon-Achan and Write (2020), responsibility for First Nations pandemic preparedness and response has been delegated to Indigenous Services Canada (ISC), which is the parliamentary ministry responsible for Indigenous healthcare. Craft and colleagues (2020), reported in their examination of law and policy surrounding the current pandemic that the Canadian government was not upholding their constitutionally enacted fiduciary responsibilities to Indigenous communities, thus further exploration into ISC's efforts may be required to authenticate the viability of the federal response.

A First Nation in British Columbia. In March of 2020, a geographically remote First Nation in British Columbia experienced an outbreak of COVID-19, providing researchers an opportunity to track the epidemiological and public health measures enacted within the community (Smith et al., 2021. Upon detection of COVID-19, immediate action was taken in the First Nation to implement widespread testing, traffic going into the community was limited to residents, and mandatory nightly curfews were enforced via tsunami alarms (Smith et al., 2021). Within seven days, eight residents became infected with the virus in a community of 1,000 people, requiring the declaration of a state of emergency (Smith et al., 2021). During the COVID-19 outbreak which lasted a few weeks in total, 30 individuals became infected (cumulative incidence of 3,144 per 100,000 population, compared to 49.7 per 100,000 population for British Columbia in general), five were hospitalized, two of those hospitalized were admitted to ICU, and one passed away, putting hospitalization rates at 17.0% of total infected, those admitted to ICU at 40.0%, the mortality rate for this outbreak at 3.0%, with percent positivity in the community at 18.0% (Smith et al., 2020).

The effective mitigation of the continued spread of infection in this First Nation required community-driven approaches that were supported by provincial services and resources (Smith

et al., 2020). Through the support of the British Columbian government, investigations were completed with the use of case report forms, data was tracked with public health systems, and continual engagement was established with the regional epidemiologist, the First Nation's communicable disease nurse, and the community health nurse (Smith et al., 2021). Testing was facilitated through the establishment of drive through centres, and in-home visits for situations where individuals were unable to obtain transport (Smith et al., 2021). Trusted community members such as nurses or leadership led the efforts in contact tracing, information sharing, and educational material distribution, with social media being the primary tool for dissemination (Smith et al., 2021).

Documentation and tracing of this outbreak in a remote First Nation affords invaluable insight into concerns surrounding the spread of infection, while also illuminating the requirement for specialized funding and resource allocation given the complexity of contextual and environmental factors. Support from dedicated medical professionals and coordinated efforts from provincial public health agencies offered many allowances that were influential in moderating the spread of COVID-19 (Smith et al., 2021). Although these provisions facilitated improved outcomes, it is important to note that many of the resources and services that were made available to this First Nation are not accessible to First Nations across Canada and findings are therefore not generalizable within the scope of pandemic mitigation in Indigenous communities more broadly. British Columbia has never formally signed treaties with the First peoples of the province, therefore Aboriginal title has never been relinquished. As a result, Indigenous populations within British Columbia retain the power of Aboriginal claims to their lands which provide First Nations with the authority to negotiate directly with the federal government for their jurisdictional prerogatives, and the retention of these rights are not

translatable to Indigenous communities in Ontario (former Ontario Regional Chief C. Fox, personal communication, August 2, 2022; Wood & Rossiter, 2011).

Summary of Recommendations for Pandemic Mitigation

Pandemic prevention strategies post-H1N1 included recommendations to adopt methods for impact assessments on health inequities, to increase engagement between services and communities, to strengthen the vital role of families and communities, to promote more equitable distribution of supplies and services in efforts to reduce impacts resulting from the determinants of health, to enhance prevention programs, and to encourage more outreach (Boggild et al., 2011; Richardson et al., 2012; Morrison et al., 2014; Charania & Tsuji, 2011; 2012). Enhancing pandemic preparedness at the provincial level must include establishing community-led recommended structures and elements for strategy development with an oversight body and multi-stakeholder networks (Richardson et al., 2012; McNeill & Topping, 2018). Further, it is imperative that emergency response policies and laws are developed by each First Nation based upon their governance priorities, with supplementation and ample resourcing by the federal and provincial governments (Craft et al., 2020). In Ontario, there are no specific provincial or federal funding sources for First Nations during emergent crises such as pandemics, meaning that Indigenous communities are often excluded from their region's allotment, contrary to Canada's constitutionally asserted fiduciary responsibilities (Craft et al., 2020).

An emphasis on Indigenous self-determination coupled with Indigenous leadership and culturally relevant mitigation planning is required if improved outcomes are to be observed during prospective pandemic outbreaks (Clark et al., 2021; Richardson & Crawford, 2020; Charania & Tsuji, 2011; 2012; Fleury & Chatwood, 2022; Kyoon Achan & Write, 2020). Core tenets of forthcoming pandemic preparedness planning according to McMahon and associates

(2020), are '…capacity, expertise, and leadership…', indicating that First Nations and other Indigenous populations must be afforded their rights to self-determination in the establishment of effective policy reform. There must be greater clarity in communicating policy guidelines such that information is presented consistently, effectively, and in a manner that is easily digestible to Indigenous and other interventive leadership (Boggild et al., 2011; Mosby & Swidrovich, 2021; Clark et al., 2021; Kyoon-Achan & Write, 2020). The perspectives of northern and remote communities must be illuminated as a foundational prerogative in future planning endeavours for effective mitigation reform to become a reality (Clark et al., 2021; Charania & Tsuji, 2011; 2012; Robinson et al., 2012; Boggild et al., 2011; Lavoie, 2013).

Several impediments to adequate healthcare delivery have arisen during the H1N1 and COVID-19 pandemics that could provide guidance for prospective pandemic preparedness planning in geographically remote and isolated regions of Canada (Boggild et al., 2011; Charania & Tsuji, 2011; 2012; Robinson et al., 2012; Driedger et al., 2013; Clark et al., 2021; Fleury & Chatwood, 2022; Smith et al., 2021). Kyoon-Achan and Write (2020), assert that with strong community leadership, effective avenues of knowledge distribution, prerogatives directed by First Nations' that endeavour to integrate wider public health resources, and clear approaches to emergency measures guidelines, the successful prevention of COVID-19 outbreaks within remote and isolated communities is possible.

Gaps in Literature & Conclusion

The H1N1 pandemic of 2009 – 2010 was the first global viral pandemic to impact First Nations populations in Canada since the Spanish Flu, which occurred from 1918 – 1920 (Parks Canada Agency, G. of C. 2021, September 8, pg. 1; Fleury & Chatwood, 2022). Prior to H1N1, little consideration had been given to the burden of illness that viral pandemics cause for First

Nations populations. Barriers to mitigating the spread of infection become further complicated by the ISDoH (Reading & Wien, 2009; Lavoie et al., 2010a; 2010b; Lavoie, 2013), but at the onset of the H1N1 pandemic, such determinants were only in the formative stages of being understood. In the aftermath of H1N1, it became evident that health outcomes, rates of morbidity, and rates of mortality were much higher for First Nations and other Indigenous peoples than was observed in the general Canadian population (Fleury & Chatwood, 2022; National Collaborating Centre for Aboriginal Health, 2016; Public Health Agency of Canada, 2020).

Researchers and academics understand that health outcomes for Indigenous peoples have been impacted by complexities beyond health status, which has led to the realization that certain federal and provincial policies must be put into place in response to these broader considerations for the effective moderation of the spread and course of pandemic illness (Mostaco-Guidolin et al., 2013; Morrison et al., 2014). Despite this awareness, very little relevant literature existed prior to the H1N1 and COVID-19 pandemics that endeavoured to address inequities in the provision of supports and services to First Nations for pandemic mitigation efforts. Charania and Tsuji (2011; 2012), along with Lavoie and colleagues (2010a; 2010b; Lavoie, 2013) were among the researchers leading the way in working collaboratively with Ontario's First Nations to identify rates of hospitalization and intensive care unit admissions for infection with the H1N1 virus. Charania and Tsuji (2011; 2012), and Mostaco-Guidolin and colleagues, (2013), provided the impetus for further consideration of the burden of illness and impacts for rural and remote First Nations populations, but additional research is still required if effective improvements in policy reform are to be achieved. Current research centred upon First Nations in Ontario and COVID-19 is minimal but has been useful in illuminating the requirement for governments to

honour Indigenous self-determination and foster Indigenous-led interventions and mitigation initiatives for the improvement of health outcomes for these populations (Smith et al., 2021; Kyoon-Achan & Write, 2020; Fleury & Chatwood, 2022). Literature focussed upon the First Nations' perspective in relation to the efficacy of pandemic preparedness policy and barriers to service provision is limited. Existent research is primarily based upon First Nations experiences in other provinces, is centred upon health outcomes, morbidity, mortality, impacts of colonialism and colonization, and determinant factors of health inequities, comparing on-reserve to urban Indigenous populations. Little consideration has been given to where the gaps in mitigation policy are for the federal, provincial, and local or regional governments. There has been nominal research to date exploring the ways in which First Nations populations in Ontario have been forced to cope with, prepare for, and address emergent issues arising from pandemic illness. Pandemic preparedness and response require a policy overhaul, providing special consideration for the circumstances experienced by many First Nations in rural and remote regions of Northwestern Ontario, but existent literature has not yet fully disclosed the ways in which this should be facilitated and supported.

Research Questions

The central research question for this study was: What have the experiences of First Nations in northwestern Ontario been with respect to pandemic mitigation and intervention during COVID-19? Attainment of answers to the research question were centred around understanding the experiences of 4 First Nations in northwestern Ontario as they relate to COVID-19. The developed research questions listed below were intended to determine which pandemic response services, supports, and resources were offered by each of the governing bodies; federal, provincial, and local or regional, in order to determine whether each First Nation was sufficiently

and appropriately equipped to address community needs, effectively facilitate lockdowns, and attend to healthcare requirements of community members.

1. During the COVID-19 pandemic, what has the experience been with regard to mitigation measures and interventions - vaccines, healthcare support, PPE deployment, etc.?
2. Which response measures have been addressed autonomously by each of the four participating First Nations?
3. What has the federal, provincial, and local or regional response been for participating First Nations?
4. Which strengths, issues, and barriers did participants note during pandemic mitigation efforts?

Chapter 3: Methods

This chapter will outline the qualitative methods employed to carry out the current study. Headings will include Situating the Researcher, Rationale for a Qualitative Approach to Inquiry, Grounded Theory, Transformative Framework, and Methods, which includes approaches utilized for data collection and data analysis.

Situating the Researcher

In pursuance of collaboration with First Nations populations, it was important that I position myself as a 'learner' in the research setting, and in doing so view the collaborator as 'teacher' of their processes and experiences that speak to the research objectives (Creswell & Poth, 2018). Positionality statements are also considered to be an important tenet of most qualitative research by some academics (Creswell & Poth, 2018). Given the historical abuses enacted upon First Nations populations within Canada, it is important that I state my contextual setting so that it might inform any potential biases in the reframing of the participant's knowledge and understanding (Creswell & Poth, 2018).

Indigenous populations across Canada are made up of culturally and traditionally diverse groups of people. I am Ojibway from Biinjitiwaabik Zaagiing Anishinaabek, located in the Robinson-Superior treaty territory on the shores of Lake Nipigon in Northwestern Ontario. As an undergraduate student, I completed an honours degree in psychology, minoring in political science with an emphasis on Indigenous mental health. I explored psychological paradigms and constructs in pursuance of my degree, largely shaping the lens through which I view the world.

Growing up, I was simultaneously an insider and an outsider in the Indigenous and non-Indigenous realms of existence. I grew up predominantly in urban settings where, as a child who

was half Ojibway, I was not quite Caucasian enough to fit in fully, nor was I quite Ojibway enough to fully fit in on First Nations. Although I was accepted in both spaces, I had the innate sense that I did not fully belong in either. This left me feeling like I was an outsider for most of my childhood and early adulthood. During my high school years, I moved to Tucson, Arizona which had a similar impact, making me aware of my 'otherness' as a Canadian living in the Southern United States. These experiences afforded me the ability to readily acknowledge and respect distinct differences in people while simultaneously connecting with them regardless of background.

I received my first regalia at the age of 7 while living in Gull Bay First Nation with my family. From that moment onward, we spent each weekend during summer months travelling across northern Ontario and into the northern United States to participate in pow wows and other traditional ceremonies. Our most commonly attended cultural practices were naming ceremonies, sweat lodges, fasts, pipe ceremonies, sun dances, along with many other traditional protocols. Each evening at dinnertime, my family and I would put out an offering of the foods we had prepared with tobacco in order to show respect to the spirits by feeding them. My culture and traditions have been a foundational aspect of my formative development, and to this day remain a core aspect of my identity.

In travelling to different First Nations across Ontario I was able to recognize from an early age that many communities had different practices and approaches to the concept of a 'pow wow' or other ceremonies. These differences were particularly notable across the varied regions and territories in the province. While pow wows in Treaty 3 and Robinson-Superior were similar in fundamental ways that included positioning drum groups in the centre of the pow wow grounds under an arbour with dancers circling around the arbour in a clockwise fashion, in the

more southerly First Nations of the Robinson-Huron treaty territory many pow wows featured drum groups and singers along the edge of an open area, with dancers along the perimeter. Although this variation in practice may seem innocuous to an outside observer, the impact is very noticeable to anyone participating, suggesting that great care must be paid to nuanced considerations of any First Nation engaged with in every capacity.

Upon completion of my undergraduate degree, I began working in the remote north of Ontario in communities that were not road accessible. Cultural protocols that were common practice for myself and my family in our territory were not acceptable in the remote north, and further were only practiced in secrecy by very few. This paradigm shift broadened my awareness of how varied cultural practices and norms are and can be, even within the province of Ontario. As an Ojibway person travelling to remote Oji-Cree communities, I was incredibly humbled and learned quickly to remain quiet about my own cultural beliefs and defer to the guidance of community members in terms of appropriate protocols. Regardless of my personal beliefs, it was important to be mindful of the cultures and values of whichever community I was in given the vast diversity within and across Indigenous nations. This is an important lesson that I carried with me throughout this research project; in collaborating with leadership and community members, I remained cognizant of and made sure to abide by the prevailing cultural values for each community I was working with.

Given the vast cultural and traditional diversity from one First Nation to another, I recognized my position as an 'outsider' in each community that I had the privilege to interact with, including those communities where family resided. I sought my guidance from the people of each First Nation I had the privilege to work with, as well as the Seven Grandfathers' Teachings in endeavouring to complete the proposed research. The Seven Grandfather's

Teachings are values that the Anishinaabe aim to live by and living in accordance with these teachings meant that I attempted to centre myself from a place of truth, humility, respect, trust, wisdom, bravery, and love.

Effectively conducting qualitative research required that I as a researcher continually reflect upon the social setting, privilege, and nuanced contexts afforded to the background I grew up in (Creswell & Poth, 2018). Developing a valid and reliable project required that I continually evaluate the ways that my positionality could result in potential biases throughout this study. Biases are inescapable and are often inherent or non-conscious, which made it necessary for me to step beyond the bounds of my inherent being to view interactions as a third-party observer. This was not always easy to do, so engaging reflexively with key informants required that I remain mindful of the ways that my formative development, the contexts, history, and experiences that have created my broader view of the world affected my perceptions and subsequent retellings of collaborator experiences (Creswell & Poth, 2018). The ability to remain reflexive allowed me to continually re-evaluate how my position in this study might differentially impact a participant's ability to respond to questions or scenarios, and the ways in which a participant may have been negatively or positively influenced by the contextual factors of the interview process, or study design (Creswell & Poth, 2018).

Although each of the First Nations I had the opportunity to work with for the purposes of this study were Anishinaabe, it was necessary that I remain aware of my formative development and how I have been shaped in great part by my exposure to Canadian and American urban centres. It was important for me to dialogue with key informants in a way that allowed me to gain a comprehensive understanding of their intent and frame of reference in order to minimize the effects of my personal perceptions. Clarity was important in the description of findings from

this research and efforts were made to ensure that any interpretations made by myself as the researcher/learner were agreeable to the participant/teacher. It was the responsibility of myself as the researcher to represent any information brought forth by informants in a way that accurately reflected the desired meaning and experience of the participants. When areas of uncertainty arose, I made sure to defer to the guidance of informants for the representation of knowledge through member checking.

Rationale for a Qualitative Approach to Inquiry

Endeavouring to illuminate avenues to improvement where prior evaluation has not been carried out required nuanced exploration which was ideally understood through qualitative approaches to inquiry (Vass et al., 2017). For the purposes of this research, it was important that the foci remain upon the prerogatives and experiences of individuals living within First Nations in Northwestern Ontario. While quantitative analyses might identify tangible and measurable effects given certain research objectives, in this context it was fundamental that I listen to the voices of participants and hear firsthand the emotions, challenges, hopes, and fortitude of living through the COVID-19 pandemic under a tripartite governance system. A qualitative approach to inquiry allowed me to establish meaningful rapport with participants, engage in discussion and dialogue, listen to the narrative retelling of participant experiences, and as a researcher/learner I was able to derive a deeper connection to, and understanding of which areas required further consideration for improvement and advocacy in planning for prospective pandemic events. This approach was made possible through the use of grounded theory.

Grounded Theory

This study was carried out using grounded theory as a theoretical approach. Grounded theory is an effective framework for the advocacy of policy change or reform (Chun Tie et al., 2019), and asserts that any developed concepts and hypotheses attributable to this research shall all be rooted in the information gathered from interactions with community members (Creswell & Poth, 2018). Grounded theory was developed by Glaser and Strauss collaboratively in 1967 as a means of challenging previous methodologies utilizing deductive interpretation as the sole source of evaluation in research (Chun Tie et al., 2019). The development of this framework prioritized the use of inductive interpretation to generate theories and concepts and relied upon the constant comparison of emerging themes through iterative processes (Chun Tie et al., 2019). This was an initial effort to establish rigour in qualitative interpretations of data (Chun Tie et al., 2019). More information about how grounded theory was used in the analysis will be provided in the Data Analysis section starting on page 53.

Using a grounded theory approach, it was anticipated that data collected from interviews with select key informants would offer insight into gaps in pandemic preparedness and response by the federal, provincial, and local or regional governing bodies, which thus provided awareness into areas requiring additional supports and what those specific provisions are in preparation for prospective pandemic planning. Identified strengths during the COVID-19 pandemic response were useful in establishing necessary dimensions to be utilized during prospective public health emergencies.

The establishment of collaborative and mutually beneficial relationships with First Nations communities that allowed for the mutual exploration and evaluation of collected

information required that I attempt to connect with the participants and relay their experiences. The aim was to emphasize the development of concepts that emerge from the co-construction process resultant from participants and the contextual elements of the First Nations (Charmaz & Belgrave, 2012; Thornberg & Charmaz, 2014). Ontologically, the relationship between the federal, provincial, and local or regional governments with each First Nation provided a guide for the understanding of the role of each governing body in impacting health outcomes for First Nations people during the COVID-19 pandemic. With the understanding that each First Nation must retain autonomy within the federal and provincial frameworks, it was crucial that consideration be given to differences in each community's political role in responding to the current pandemic.

Transformative Framework

A primary criterion of a transformative framework is that the dominant research question must necessarily respond to and be integrated to represent research objectives relevant to marginalized communities, and in doing so, be guided to collaboratively support community objectives (Sweetman et al., 2010). Developed research questions should be written from an advocacy stance, prioritizing efforts directed at policy reform or improvement for affected persons (Sweetman et al., 2010; Creswell & Poth, 2018). A core aspect of transformational frameworks of interpretation in qualitative research is that: "...knowledge is not neutral and reflects the power and social relationships within society; thus, the purpose of knowledge construction is to aid people to improve society," (Mertens, 2007, as cited in Creswell & Poth, 2018, p. 25; Sweetman et al., 2010). And "participatory action research is recursive or dialectical, and is focussed upon bringing about change in practices," (Creswell and Poth, 2018, p. 25). Given the vast sociopolitical inequities faced by First Nations peoples in Canada, it was

vital that this study be conducted in accordance with the philosophical principles associated with transformative frameworks to ensure the precepts of participatory action research as a collaborative endeavour with First Nations were fulfilled adequately.

For effective policy improvements to be realized it is necessary to consider the existent federal and provincial prerogatives for mitigation and intervention relative to First Nations during pandemics and to honestly recognize the broad inequities in the social, economic, and political strata (Anderson et al., 2021). As mentioned previously in the literature review, Indigenous populations living within First Nations in Ontario are or may be constrained significantly by factors influenced by current federal and provincial policy in ways that include inadequate access to healthcare services, lack of personal protective equipment, insufficient infrastructure to address the burden of impact resultant from COVID-19, all of which is further compounded by insufficient or inadequate housing, and clean water supply. As was also noted in the literature review, there are often gaps between federal and provincial response policies covering First Nation health needs, requiring First Nations to act autonomously and without supports or supplies to implement their own mitigation measures. Through the use of a transformative framework and participatory action research processes, findings from this study may support First Nations in Ontario with the development of effective pandemic policy and protocol for prospective public health emergency mitigation.

Data Collection

Data was collected through 13 semi-structured interviews conducted with 14 key informants from 4 First Nations located in Northwestern Ontario, and 2 provincial territorial organizations.

Participants

Participant Selection. Theoretical sampling was used to identify 2 rural and 2 remote First Nations in Northwestern Ontario to be contacted for representation of a diverse range of population sizes, as well as a varied relative distance to urban centres. Purposeful sampling was used to identify individuals within the community or provincial territorial organization who had experience or knowledge relevant to the ongoing pandemic response and existent mitigation measures. The 4 First Nations agreeing to collaborate were offered criteria for 2 or 3 key informants from the community. Criteria for selection were that chosen participants had direct experience and detailed knowledge of the roles of the federal, provincial, and First Nation governing bodies during the COVID-19 pandemic response. Informants had knowledge of tripartite supports and services provided to their First Nation or by their provincial territorial organization during the COVID-19 pandemic, and the existent gaps or strengths in service provision. Individuals in leadership roles during the COVID-19 pandemic and representatives from provincial territorial organizations in Ontario were also recruited for participation in this study. Participants included Chiefs, a Deputy Chief, council members, a health director, community nursing staff, community health representatives, and other pandemic response team workers. Snowball sampling was also used in instances where leadership and informants were aware of other community members possessing applicable knowledge or experience for the purposes of the study (Creswell & Poth, 2018).

Participant Recruitment. When attempting to work collaboratively with any First Nation, there is a fundamental need to facilitate and maintain a trusting and mutually beneficial relationship with community members. It is for this reason that all initiating contact was conducted through phone calls so that meaningful rapport could be more readily established.

Recruitment via email and phone calls was carried out using a script (*Appendix B*) to outline details of the research project as a guide for interactions. Connections were made with leadership and First Nations where an existent relationship was already established. Having worked professionally with many of the Chiefs across Ontario and having close family ties to leadership in many First Nations, I have had the honour and opportunity to develop positive rapport with many of them. I have also developed personal friendships with much of the Leadership that is centred upon advocacy and political engagement for First Nations' peoples. First Nations were selected to most accurately represent the differential variables that may impact pandemic response, such as population density, degree of geographic remoteness, and relative distance from urban centres in Ontario, as these are considerations that are theorized to impact preparedness outcomes.

Interviews

Given the ongoing pandemic restrictions and the increased vulnerability for COVID-19 outbreaks in many First Nations, interviews were conducted remotely over Zoom and telephone. All phone and zoom interviews were recorded using the Zoom recording function and recordings were transcribed. Transcription was initiated as soon as possible after each interview to ensure the essence of each participant's experience and perspective was represented accurately. An information letter detailing the research project (*Appendix C*), and an informed consent letter (*Appendix D*) were distributed to informants prior to interviews taking place. A verbal consent script (*Appendix E*) was used to acquire informed consent from each individual choosing to participate prior to the interview process to ensure that participant approval and informed consent was obtained for the collection and use of data. Semi-structured interviews are generally used in order for participants to share their thoughts, feelings, and knowledge freely

(Kyane & Brinkman, 2009). This was also the goal for the current project with participants being able to share their thoughts, feelings, and knowledge about government and community approaches to the COVID-19 pandemic in such a way that encouraged the expression of their nuanced and personal conceptions of mitigation efforts. Interviews were structured around a series of specific interview questions intended to identify core barriers and facilitators to pandemic mitigation for participant Frist Nations.

Interview Questions. Two interview guides (Kyale & Brinkman, 2009) were developed: one for community representatives (Appendix F), and the other for individuals in a leadership role (Appendix G) during the pandemic. The community representative interview guide contained 12 questions and the leadership interview guide contained 13 – each with prompts to facilitate the interview process. Participants were asked to share their understanding of pandemic mitigation and response by each tier of government: federal, provincial, and local or regional. Participants were also asked to elaborate upon mitigation measures and response efforts guided independently by their community and members. Since interviews were semi-structured, there was ample opportunity for the participants to steer the interview depending upon their prerogatives and experiences.

Data Analysis

Grounded theory is a qualitative method of inquiry aimed at capturing the depth and richness of information that simultaneously endeavours to employ methodological rigour (Creswell & Poth, 2018; Walker & Myrick, 2006). While most theoretical approaches require the investigator to first develop hypotheses and then collect data for analyses, grounded theory instead requires the systematic collection of data through which the dominant theory will be derived via a constant comparative method of evaluation (Creswell & Poth, 2018; Walker &

Myrick, 2006; Chun Tie et al., 2019). Grounded theory was developed through the combination of two distinct analyses processes: the coding of all data and systematic assessment of codes to verify the research intention, in conjunction with continuous and iterative memoing to inspect existent codes for the development of emerging themes and theories (Heath & Cowley, 2004; Walker & Myrick, 2006). Since neither aspect of grounded theory data analysis was capable of uncovering relevant theories singularly, this fusion of processes was a necessary development for the efficiency of this framework (Heath & Cowley, 2004; Walker & Myrick, 2006).

While the use of grounded theory data analysis allows for the preservation of nuanced descriptions and provides an intimate understanding of social context it may present some difficulty in the process of interpretation as the perspectives and context of the investigator and the participant may differ in ways that distort findings (Creswell & Poth, 2018; Walker & Myrick, 2006; Roller, 2012). Therefore, it is recommended that the researcher makes efforts to ensure that results from data analyses are minimally impacted by personal context or biases, and that the essence of each participant's intent is upheld to the greatest degree (Creswell & Poth, 2018; Clarke & Charmaz, 2014; Roller, 2012). For the current study, memoing, member checking, and dialogue with participants were used to attempt to moderate researcher influence on findings.

A foundational aspect of grounded theory is that the theoretical approach is developed through the constant comparison of data collected from participants who have experience in the areas being evaluated (Heath & Cowley, 2004; Chun Tie et al., 2019). Through these evaluative processes, explanations are derived through retellings of participant experiences in a manner that most accurately depict their views (Heath & Cowley, 2004; Chun Tie et al., 2019). This

approach was used in this project to determine whether the existent tripartite approaches to mitigation measures relative to pandemic response were effective throughout the COVID-19 pandemic for four First Nations in northwestern Ontario. In accordance with a grounded theory approach, the actions, interactions, and social processes surrounding federal and provincial pandemic protocols were established as provided during interviews (Creswell & Poth, 2018). This is a vital distinction for the current research that is especially important when utilizing this approach since it ensures that pre-existing biases or conceptions that might be held by myself as a researcher could be more readily illuminated through iterative processes (Chun Tie et al., 2019; Creswell & Poth, 2018).

Initial coding was completed during the interview and memoing stages of the research process with the continual identification of dominant concepts being noted as they were brought forth by participants. Verbatim transcripts were coded as soon as possible after interviews to ensure accuracy of represented perspectives. Upon completion of manual transcription of interviews for this study, all transcripts were entered into NVivo software so that latent themes and subthemes could be identified and coded. Focussed coding then established the core aspects of the research paradigm around which the sub-themes were organized. The constant comparison and continual memoing of information persisted throughout the study such that emergent themes and ideas could be noted and collated within NVivo (Chun Tie et al., 2019). Due to the limited time available to complete this study, saturation could not be achieved in all categories, however saturation in the predominating codes allowed for theoretical coding, which thus illuminated the dominant research paradigms (Chun Tie et al., 2019) and emergent framework. Data were analyzed to determine similarities and differences within and across First

Nations. Identified barriers and facilitators during the response were highlighted and will be disseminated to participating communities for improved mitigation and preparedness efforts

To ensure optimal representation of each participant's perspective, an iterative and recursive approach was taken during memoing to develop and assess interpretations of the data on an ongoing basis. Attempts were made to minimize interviewer bias through the continual use of a reflexive journal that was used to track conceptions, ideas, and considerations that arose during interviews, thereby providing a source for the continued re-evaluation of potential partiality (Roller, 2012). Where uncertainty existed, I deferred to the guidance of participants for the co-construction of concepts and ideas through dialogue, phone calls, and email correspondence.

Chapter 4: Findings

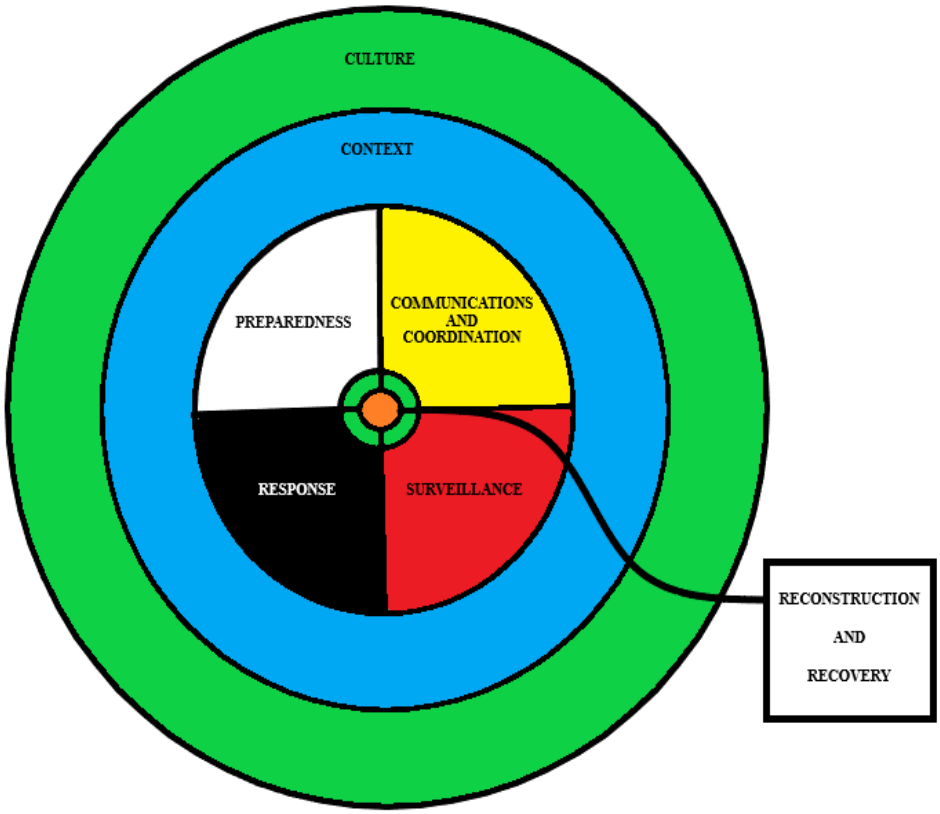
This chapter will outline the major themes and subthemes that emerged from participant interviews. Findings have been organized into 2 underlying dimensions, 5 dimensions of experience that provide the basis for the formation of a novel framework: 'First Nations First: a developed framework for pandemic response in rural and remote First Nations'. The framework is organized as: (1) Culture, (2) Context, (3) Preparedness, (4) Communications and Coordination, (5) Surveillance, (6) Response, and (7) Reconstruction and Recovery. Quotes by informants from each First Nation will be identified in the following chapters by the letters 'FN' while pandemic leads will be indicated by the letters 'PL'.

Introduction to the Developed Framework

As stated above, and in accordance with the tenets of grounded theory, emergent themes were developed into dimensions used to organize contained sub-themes into a functional transformative framework. Findings have been organized as 'First Nations First: a developed framework for pandemic response in rural and remote First Nations'. As shown in Figure 1, this framework outlines the primary dimensions to a culturally adaptive public health emergency response to the COVID-19 pandemic for rural and remote First Nations in Northwestern Ontario. Two primary dimensions underscored the 5 dimensions of experience for this framework: (1) Culture as a facilitator to effective response; and (2) Context – contextual factors which affected ability to mitigate the spread and course of infection for First Nations communities. 'Culture' contained 10 sub themes detailing core aspects of strength for each First Nation, while 'Context' contained 8 sub themes organized into containers identified as 'Colonialism and Colonization' and 'Social Determinants of Health'. The 5 major dimensions that emerged from discussions

Figure 1

First Nations First: a developed framework for pandemic response in rural and remote First Nations



were: (1) preparedness for the pandemic in terms of whether pandemic plans existed or were effective for First Nations during the COVID-19 pandemic; (2) communications and coordination of response efforts, reflecting which tier of government, provincial territorial organization, tribal council, or health authority organized and directed communications for First Nations; (3) surveillance measures implemented by each First Nation in order to manage and moderate the spread and course of COVID-19; (4) response, which detailed the avenues of response efforts; and (5) reconstruction and recovery which clarify the need for education and mental health interventions while also drawing upon the other dimensions to determine effective paths forward for First Nations in Northwestern Ontario. Within these 5 dimensions, 45 sub themes were identified. Each of these themes and sub themes are detailed in the remainder of this chapter with supporting quotes. It is important to note that the voices of participant experiences and perspectives represent 2 to 3 community members from 4 of the 133 First Nations located across Ontario and as such findings are not comprehensive and do not necessarily reflect the broader diversity of perspectives of each participant First Nation.

Participant Details

Two to 3 participants from 4 First Nations located in Northwestern Ontario, 4 participants from provincial territorial organizations, and 1 individual in a leadership role during the COVID-19 pandemic were recruited for participation in this study. The specific number of informants per community varied depending upon the contacts made in that community and the breadth of knowledge that informants possessed in relation to the relevant topics of interest. Breadth of knowledge and the necessity for participants were assessed and reassessed on a continual basis with the progression of the research and the emergence of relevant data. Viability was a major proponent in the decision to select 4 First Nations from across Ontario, and likewise in the

decision to select two to three participants from each of those communities. Ideally, prospective research beyond the scope of a Master's will allow for the opportunity to expand upon the limited pool of informants identified for this project such that tripartite roles and responsibilities can be better understood for First Nations across Ontario and Canada more broadly.

Throughout the course of this project 14 individuals were interviewed in total; 9 individuals from 4 First Nations located in Northwestern Ontario (2 rural and 2 remote), and 5 individuals representing leadership perspectives as well as perspectives from provincial territorial organizations in Ontario. Interviews explored the federal, provincial, municipal, and community-led planning and response efforts experienced by each First Nation during the COVID-19 pandemic. The 14 participants were comprised of 7 men and 7 women working as community health representatives, community nurses, pandemic response team members, health directors, Chiefs, and other leadership. To protect the anonymity of respondents, individuals have been de-identified and assigned an anonymous alpha-numeric code.

Underlying Dimensions

Culture

Culture emerged as a dimension of strength throughout this study, embodying themes categorized by the 7 Grandfather's teachings of love, humility, and courage, as well as themes of community, compassion, and gratitude. The 7 Grandfather's teachings are aspirational values that guide the principled conduct of Anishinaabe peoples and provide a framework for operating in a good way.

Community. Community reflects the strength of First Nations working to support one another in endeavouring to manage the COVID-19 pandemic. During challenging times, it was

common for participants to report 'community' as a predominating strength contributing to their fortitude:

> "I think one of the strengths as a community is that we came together as a community. What happened was I noticed and what I saw was that people put their differences aside. That's always been a strength of this community here when something, a crisis, happens everybody kind of put their differences aside and came together. I think that's one of the First Nations strengths is coming together in times of crisis" (FN201);
>
> "We had to work together to resources to make this happen. That happened. Work together. Which, when they did that it builds them up, made them stronger eh?" (FN103).

This communal strength was reflected in a number of different ways, with First Nations organizing response efforts that were geared to the specific needs of community members:

> "The male workers they provide wood every day. Chop wood, take inside, make sure it is always supply during the night. And also, they can tell us if anything goes wrong for those people. If they need more help than that" (FN101).

Where possible, First Nations did what they could to alleviate the stress of the COVID-19 pandemic on community members. In one such instance of compassion and support, the band council from a First Nation that is under a long-term boil water advisory, purchased water for its members for the duration of the pandemic:

> "We, the band bought it for them just at this point in time. We got a big charge bill. We didn't want people to pay for it. We wanted to help them, eh" (FN101).

Having limited access to resources did not stop First Nations from helping one another within and across communities when there was a need: "We have to help our own people no matter

what" (FN101). Further, even where resources within a community were lacking, gratitude was expressed for the supports that were offered by outside sources:

> "Even though we're isolated, even though we don't have very much of the physical resources with the human resources. I think that we are thankful for the human resources. For the people themselves" (FN103).

Although there was a lot of fear surrounding the COVID-19 pandemic, community members did not allow that to stop them from helping one another. It was important that they knew for certain that each of their members was well taken care of. To be sure that each family and household had all the necessities and resources required during periods of lockdown, pandemic response teams would go door to door and check in on everyone:

> "So, what they would do is go and they would go to the homes and knock on the door and they would ask if they needed anything like say water- potable water, if they needed food, if they needed fire wood, if they needed all those things" (FN201).

Community, family, and belonging are important cultural values for Anishinaabe people, and this proved to be a strong facilitator of effective mitigation and planning efforts for First Nations:

> "I think that is one of those things as a First Nations person you look at, right? You don't just look at the impact of the person. You look at the impacts on the community, to the family, to the lands" (PL02).

'Not leaving anyone behind' was a critical concept that each participant First Nation held during the COVID-19 pandemic, going to extreme ends to support one another. Even when the broader world was attempting to grapple with the fear of the unknown, First Nations peoples participating in this study and their neighbouring First Nations relied upon and supported one another:

> "So, you have an innate understanding that we didn't leave people behind. Everyone has purpose in our societies" (FN401);

Context

Context speaks to the contextual circumstances that impacted each First Nation's ability to effectively moderate the COVID-19 pandemic. The dimension of context contained two dominant themes: (1) colonialism and colonization which contained subthemes of residential schools and vaccine hesitancy, and (2) the social determinants of health which contained subthemes of access to healthcare services, housing, infrastructure, and potable water.

Colonialism and Colonization. As part of the colonial agenda, residential schools were established throughout Northwestern Ontario and Canada more broadly. Some of the individuals who agreed to participate in this study were residential school survivors: "A little about my background, I went to residential school" (FN201). Forced attendance at residential schools had innumerable impacts on Indigenous children, many of which have persisted contemporaneously. A theme that emerged during this study was vaccine hesitancy. The hesitancy was grounded in fear that vaccine experimentations committed at residential schools and Indian hospitals would be re-enacted. According to some participants, the vaccine hesitancy during the COVID-19 pandemic was connected to the experimentation that went on in residential schools:

> "I think another thing that we really struggled with is, you know, because First Nations were such a high priority there was a lot of that fear that we were being tested again. Because like I know that in a lot of residential schools you know vaccines and nutrition supplements were experimented on" (PL02).

The degree to which individuals were or were not comfortable getting the vaccine varied across the province. One participant relayed that Remote First Nations were targeted by the province,

the Chiefs of Ontario, and the Sioux Lookout First Nations Health Authority for information sharing and coordinated efforts to increase vaccine uptake. Despite these efforts, many remote communities had overall vaccination rates that remained quite low:

> "The community itself here, we're pretty low in terms of using that vaccine. I think, last time I remember, I could be corrected on this - we only have something like 38% of the community vaccinated. But we do have a history of that - even with the flu vaccinations. We have a history of a low number of people being vaccinated" (FN201).

It was reported by 3 participants from the Chiefs of Ontario's COVID-19 Initiatives Task Force that their office worked proactively to attempt to destigmatize the vaccines for First Nations communities. It was hoped that this as an additional measure would increase vaccine uptake:

> "But it was also working on the other end to get First Nations to understand - this is to protect you. There's no experimentation. This is a lesson that has - that they're trying to right a wrong. You need to take advantage of this. So, it was a dual pronged approach to trying to get those vaccinations out because we had a lot of pushback from First Nations people and within the community about that as well. So that was another one of those nuances, we really had to work through that stigma, work through that trauma with communities as much as possible" (PL02).

Vaccine hesitancy within First Nations was not always linked explicitly to residential school attendance, however. In one rural First Nation, one participant informed me that a small segment of the community refused to get vaccinated for reasons that were not linked to historical rootedness (FN301). This community dealt with challenges around misinformation circulating on social media and community members receiving false information from one of their

community nurses. Although they were able to address the situation, there was still some resistance when it came to getting vaccinated:

> "I would say about 11% did not want to take the vaccine, they did not want to take the vaccine at all. Personal beliefs and values" (FN301).

While a considerable percentage of the First Nations population in Ontario did become vaccinated against the COVID-19 virus, more support and education are still required to address the varied concerns of many Indigenous peoples.

Social Determinants of Health. The social determinants of health include factors that primarily effect the physical, mental, emotional, or spiritual health and well-being of an individual, community, or population. The SDoH are fundamental to the appreciation of existent health inequities given contemporary and historical contexts within Northwestern Ontario and Canada more broadly. The primary SDoH that emerged in the current study were: (1) access to healthcare services, (2) lack of infrastructure, (3) overcrowded housing, and (4) lack of access to clean and potable water. which I will present below.

Access to Healthcare Services. One of the rural First Nations who participated in this study was located proximally to a small municipality, which increased their access to healthcare services, supports, and resources. One rural and two remote First Nations, however, did not have direct access to healthcare services. These communities relied upon locums and community nurses to provide interventions and treatments from a local health centre/ nursing station/other throughout the pandemic. The lack of access to immediate healthcare services within First Nations communities was by one participant linked directly to the loss of life for individuals requiring medical care for pre-existing health conditions who had to be transported to a larger urban centre for medical services:

> "With the first wave of COVID-19 we lost a husband and wife the same day. These two caught COVID while on medical travel as they were placed in a hotel where the city of Thunder Bay were placing COVID positive people. This should not have happened. They would still be alive today if they had been placed somewhere else COVID-free and safe" (FN102).

Many First Nations closed their borders, restricting travel to and from their communities in order to prevent COVID-19 from infecting community members: "One of the things that really helped us I think was the border closure" (FN201). This proved to be challenging, however, since the lack of direct healthcare services available in the community meant that individuals had to travel to larger urban centres for care: "You would only be allowed to go out of town on a medical, for medical service" (FN201). This was an additional barrier for some First Nations to contend with that in some instances led to unnecessary risk and exposure.

> "There's been times and it works the other way around when you come out of Thunder Bay or Sioux Lookout you end up hanging on the airport. We have a lot of issues with the plane there. Sometimes you end up; you get on again, and off again and there's been times that we arrived here at 2:30 in the morning…In the middle of winter, that's not a good thing. If you're not feeling well, even if you're feeling well, it's still not a good thing" (FN103).

Unnecessary risk of exposure to the COVID-19 virus was more commonly indicated by individuals living in the two remote First Nations.

Infrastructure. Monitoring incoming traffic in remote First Nations was challenging as a result of the limited infrastructure available to sufficiently facilitate the safe exchange and transport of traffic coming into the community:

> *"*The housing you know, everyone tried to help, but there wasn't that much to do?. We couldn't put up a whole building in a couple weeks. So, we did have the housing people build like a hut or a shack - it was open air which was good because it was summer. I don't know you don't think oh you know we have a winter coming. I think we hoped at the time it would end by then. It was open air, but there was a roof at least. There was ground. It was ground, there was no floor. Just so you get a picture, it was made of wood - lumber, but there was no there was a - it wasn't extremely good, but it was something" (FN202).

The Ministry of Transportation was called upon by one First Nation to support efforts to construct a triage station for passengers coming into the community, however, the structure that was built was not suitable for managing the spread of COVID-19 to individuals passing through:

> "It was definitely better than standing in the rain or whatever. It's not the greatest because it's not heated too. So, there's a temporary heater that kind of blows air in there, but there's no plumbing, there's no bathroom for people. That's a big problem, really, I think. I think that's something that should be addressed at this point, because in a pandemic you need to separate people who are coming and going to the airport and most airports are able to do that, right. Reserves all have that I think - just the one building" (FN202).

Several participants noted that it is critical to address the infrastructure needs of First Nations for each community to be able to manage the course and spread of infection to its residents.

Challenges arose during a COVIID-19 outbreak when one First Nation was unable to house persons attempting to come and support response efforts: “One problem we have a lot of time now is we have no accommodations for people, right? It’s mostly day trips” (FN101).

Housing. Housing shortages in First Nations have been well documented, and that was no exception throughout this study. Overcrowded housing was identified as a challenge that many of the participant First Nations faced in attempting to moderate the COVID-19 virus among community members:

> “And then some communities you know there’s a housing shortage, so they would have 10 or 15 people living in the same household and of course if one person gets COVID you know it’s pretty certain that the entire household will catch it as well” (PL01).

In addition to the housing shortages, both remote communities that participated in this study were dealing with ongoing water advisories, making it necessary for community members to purchase potable water in order to be able to practice public health guidelines. As relayed by one participant, this was a challenge experienced more broadly by First Nations across Ontario during the COVID-19 pandemic:

> “I just know that the communities were having a really hard time with being proactive and responding to the pandemic because of underlying issues such as overcrowded housing and water. Like they were already going through all these issues and health disparities in their communities and now they had to deal with a pandemic. It was very stressful on a lot of Chiefs. That was a main thing we have learned being in those meetings - the underlying issues that communities already face” (PL012).

The contextual circumstances under which many First Nations exist provided additional barriers for communities to manage during the COVID-19 pandemic.

Dimensions of the Experience

Preparedness

During discussions with respondents, two dominant themes arose out of the preparedness dimension: (1) pandemic planning; and (2) feeling overwhelmed. Preparedness categorized whether First Nations were adequately prepared for the COVID-19 pandemic, while also clarifying the processes, facilitators, and barriers to effective plan development and implementation for participant First Nations. Collaborators were asked whether a pandemic plan was in place prior to the onset of COVID-19 and further clarification was sought to understand whether existent plans were effective in mitigating viral spread. Preparedness further encompassed any other details about which processes were undertaken to support planning initiatives.

Pandemic Planning. According to participants there is no single defining criteria for preparedness across First Nations; it encapsulates different processes for different communities. As a result of the contextual circumstances within which many First Nations exist, it is crucial that planning and engagement be directed by each First Nation to optimally suit their needs. One First Nation experienced quadruple crises simultaneously, requiring that they evacuate community members to four municipalities across Ontario in the midst of the COVID-19 pandemic:

> "We missed the chance to have them all in the same place. There was another community that had to send people to Thunder Bay, so we didn't have one contact point. We had to spread ours out over four communities. I believe people in Thunder Bay, people in Timmins, Cochrane - I'll think of it as we go along, but to four communities. So, we had to repatriate and you know, very much being fearful of COVID" (FN202).

Experiences such as this are not uncommon for remote First Nations in Northwestern Ontario. In this example, the participant reported that her community simultaneously had to deal with managing COVID-19, forest fire evacuations, and the repatriation of community members from 4 different municipalities across Ontario, all while dealing with an ongoing housing crisis and lack of potable water. The contextual factors in the First Nation further burdened community members and created barriers that required them to have to manage evacuation and repatriation efforts in order to keep their citizens safe from COVID-related outbreaks. Given the contextual circumstances in many remote First Nations located in Northwestern Ontario, general public health guidelines often fail to recognize limitations to adherence for many populations, requiring that prospective planning consider a multitude of impacting factors that must necessarily be incorporated for effective mitigation. As one participant explained: "Communities need to prepare for anything" (FN101).

Members from the COVID-19 Initiatives Task Force which operated out of the Chiefs of Ontario's Office of the Ontario Regional Chief provided some indication of how many First Nations did not have pandemic plans in place entering the COVID-19 pandemic:

> "We did send out a survey at some point in the beginning and I think they might have gotten only about 40 responses, and of those 40 that responded I don't think any had anything in place prior to COVID" (PLL01).

This inquiry was carried out nearly a full year into the pandemic and still many of the respondent First Nations in Ontario did not have a plan in place. However, at the time of interview, participants from each First Nation involved with this project indicated that a plan had either been in place prior to the onset of the COVID-19 pandemic:

> "When I looked at the actual pandemic plan, it was all geared toward response with H1N1 in 2009" (FN401);
>
> "When the plan was originally made was back in 2005, so we were thinking more of influenza pandemic, but also some of the measures we had there worked" (FN301).

Or had been developed and/or updated during the COVID-19 pandemic:

> "I was on a team that was commissioned to do that in 2020. Like February, before they announced the pandemic. It needs updating" (FN202);
>
> "Some of the stuff we had initially used on that one (pandemic plan) was some of the stuff that we had used on that one that we were developing, so it kind of helped. For myself anyway, it kinda helped me to plug in what was required in the plan" (FN201).

In some instances, pandemic plans that had been developed in response to prior pandemic events were considered to be inappropriate for the response required to meet the imminent needs of communities attempting to respond to the COVID-19 pandemic:

> "So that was my job, right. Making sure it was all put together and work on an emergency response plan and man did COVID throw that all out the window. There was little to nothing that was useful" (FN401).

Although plans were in place for a few of the participant First Nations, the protocols and procedures outlined in these plans were reported to be geared too specifically to the impacts of prior pandemic events, and as such were ineffective.

> "So, it was all about like vaccine clinics and trying to do work with prophylactics, and we're not anywhere near those things when it came to COVID because COVID was so new" (FN401).

Additional difficulties arose in the practicality of existing plans, with translating plans to implementation often proving to be challenging "There's a plan and then figuring it out on the ground too" (FN202).

Federal and provincial ministries attempted to proactively prepare many First Nations for the impending likelihood of another pandemic post H1N1 by putting on workshops for community health representatives and leadership:

> "I can't remember which ministry it was. They did a preparedness—some workshops back in Kenora…they were getting the communities ready for the potential for a pandemic happening, because it happens every 100 years. So, I went to that workshop in Kenora for that and that kinda got me to start. They taught us how to prepare for a pandemic, so I did one (pandemic plan) for the community here" (FN201).

One of the issues that arose in implementation, however, is that during the planning phase individuals were expected to imagine a worst-case scenario and create their plan around imagined scenarios of such eventualities. This was a barrier to effective pandemic planning, since plans were often the sole responsibility of a single individual within each First Nation.

> "Of course, at the time we had to think when we were planning for the worst-case scenario what would happen in the event of a pandemic" (FN201).

While some reports indicate that federal and provincial governments supported First Nations pandemic planning initiatives, there was no clear consensus reflecting exactly what those supports were or what the criteria were for inclusion of First Nations partners in planning endeavours:

> "Originally that wasn't in the emergency preparedness course, that was just for the pandemic plan. It was through Health Canada, I guess. They had given funding to the

> bands to hire someone to develop a pandemic plan. So that's when I developed the plan following the Ontario guidelines and some others—Ontario's and Canada's and I put it all together for our community" (FN301);
>
> "I think all levels of government have them (pandemic plans), but at the same time we have to do our own here" (FN202).

For two remote First Nations, the lack of clear protocol in guidance for pandemic plan development resulted in more confusion, speaking directly to the need to include community partners as leaders in prospective Initiatives: rather than imparting directives:

> "Currently we do have some people advising us and helping. It gets very complicated because there's almost too many of them and so when we go over a little section (everyone has) a lot to say and then you don't know, after, how to use it. It can be overwhelming to be honest. So, we decided that we'll sit and rewrite and then when we're pretty much ready we'll use those people" (FN202);
>
> "We tried to get things ready. We tried to get a plan going, but like I said we ordered masks, and we realized it—what are we supposed to do?" (FN101).

The Sioux Lookout First Nations Health Authority (SLFNHA) was a primary supporter of planning and response initiatives for remote First Nations located in the provincial territorial organization of Nishnawbe-Aski Nation (NAN), resourcing and guiding First Nations partners in developing individualized pandemic plans and response protocols:

> "…there was a team from the public health office out of SLFNHA who came and showed us what would happen and what to expect. I can't remember the name of the doctor that was there initially – right now it was Dr. Douglas. He's the public health doctor out of SLFNHA. They kind of helped us. They were our resource people. They came and

> helped us. We were identifying what would happen, what they thought would happen during the pandemic. And of course, what to do if someone was exposed to the virus" (FN201).

A potential barrier to effective pandemic planning, however, could have been attributable to unclear communications from various stakeholders as well as the excessive time constraints imparted upon plan development:

> "So, what we did—there were a whole bunch of us—they told us to come up with a plan within 7 days. There were a whole bunch of people that got involved in that; some people in the community and also, we utilized the nurses that were available at the time when we put this whole thing together. It took us 7 days and that was the plan that we initially used" (FN201).

Unfortunately, in some cases implementation of existing pandemic plans came to a standstill because there was no funding to continue to maintain or carry them out effectively.

> "I think there were plans that were made. There's always things written down, so that was a start. They [pandemic planning] came to a standstill when there was no funding" (FN101).

Suggestions put forth by one participant for improving pandemic preparedness included the use of a template that could be modified and tailored to the unique needs of each First Nation, allowing the facilitators identified by each First Nation to be shared with one another, while also supporting self-determination in plan development:

> "Basically, developing their own community pandemic response, because I would say a collective response to First Nations would be effective, like say maybe a template, but also a community—every community is different. We all have different needs. So, I

> would say a template would help communities build the responses by looking at what other communities have done well. So, creating our own pandemic or emergency response teams. Because that's another thing that's needed in communities" (PL012).

Proactively supporting First Nations in developing individualized pandemic plans could be one way to reduce feelings of overwhelm during times of acute crisis.

Feeling Overwhelmed. Preparedness planning by governments may not sufficiently meet the needs of communities and as such, preparedness endeavours should consider planning that is tailored to the specific needs of each community, in partnership with community members. Providing directives to rather than collaborating with First Nations partners may lead to misinformation and feelings of overwhelm for individuals or groups tasked with developing preparedness plans and response protocols.

> "We were not prepared in terms of how big this was going to be or how long it would be. I believe neither were the governments. We lacked the resources that were needed, isolation centres, and supplies—both medical and grocery, and wood for heating our houses. There is a long list that I can go into, but being not prepared in all areas was a big one" (FN102).

It was challenging for First Nations to sufficiently prepare for a pandemic event when information was not being readily shared with First Nations' leadership by government officials:

> "During the initial stages of the pandemic there was no information going out. No one knew what was going on, everyone was I think everyone was scared. Fear of the unknown, right? (FN302);
>
> "I think by that time they were starting to get something together. As far as like right when COVID started everyone was kind of—you know panicking and lost" (PL01)

When communities are dealing with a novel emergency such as COVID-19, they must continue with standard community protocols and procedures while attempting to circumvent viral outbreak, all of which must be completed with the limited available personnel in communities:

> "So now the pandemic plan has to be included within emergency measures. Because of the fact that people didn't train, that they didn't train to do stuff. Like I didn't train to respond to a crisis. There was never that training in place, as much as we talked about it. We spoke to the band manager- It was because I think what it is - the band manager was involved in every facet of organization right, and because of that she was getting very overwhelmed as well" (PL03);
>
> "So now that they have to do a plan, like any other projects or programs you have to put in place. It all comes down to putting the time and resources to do – it was probably 100 plus issues that the First Nation has to deal with" (PL04).

Open lines of communication between federal governments and First Nations leadership would alleviate much of the uncertainty and overwhelm experienced during the COVID-19 pandemic by allowing for bi-directional information sharing. This form of communication in planning stages would allow governments to identify the unique needs of communities and would further provide insights into the areas being underserved for First Nations.

Communications & Coordination

In discussing the dimension of communications and coordination with participants, 6 primary themes emerged containing sub themes: (1) community coordination, which contained sub themes of Chief and Council, and cross-community support; (2) tribal councils and health authorities, containing sub themes of Windigo, Matawa, and SLFNHA; (3) provincial territorial organizations, containing sub themes Chiefs of Ontario, Nishnawbe-Aski Nation, and

Anishinaabek Nation; (4) governments, containing federal, provincial, and municipal as sub themes; (5) information sharing, containing media outlets as a sub theme; and (6) uncertainty.

Community Coordination. Coordination within each community is one of the fundamental facilitators to managing the needs of community members, particularly where the need is imminent and there may be time constraints associated with federal and provincial response: "We have to help our own people no matter what" (FN101); "Our First Nations first" (PL04). Independent coordination often meant reallocating and supplementing funds within the band administration to adequately resource community members: "Our local programs donated money to buy groceries and we also used some of the funds that were given to us by the government to provide groceries" (FN102). One remote First Nation developed a command centre to manage the spread of COVID-19 throughout the community:

> "And then we had [a] command centre at the band office first. With walkie talkies and then we moved the command centre to that other building. Our command centre was - you write everything on the wall, the duties that have to be done and who should do them" (FN101).

This command centre operated as a centralized post to monitor and track active cases while also organizing necessary supports and resources for all community members. The idea to develop a centralized command centre was derived through supports from the Canadian Junior Rangers who were posted in the community:

> "We've done that sort of thing in the past. A few people know how to go about it. Let's say now we have people coming in or coming from the Rangers who do these sort of things. They deal with emergencies in the communities. They do these command centres and they help people in the community" (FN101).

The pandemic response team operated out of the command centre, arranging for the purchase of food and other resources when community members were in need. This was one way that the community managed the spread of the COVID-19 virus, since it limited the number of people who were out in the community:

> "Only the chosen ones could shop for people. The ones on the committees. The rest of the people could not go into the stores. They put orders in to the stores of what they need, but they could prepare a list of what they need. So, gave it to workers and these workers would shop for them" (FN101);
>
> "And they still have to isolate. We still have to do grocery runs for them. Garbage runs, water runs, and wood runs. People kept running out of wood because they couldn't go to the bush to get wood" (FN101).

Community members living elsewhere also did what they could to support their community during the outbreak:

> "We had some of our community members to come and help us from Thunder Bay. Maybe 10 of them, maybe 12 of them to get wood for us and run around and run to supply runs. And we had to place them where they're isolated too. Somewhere in the community where nobody's there" (FN101).

Community was a strength in response to the COVID-19 pandemic that arose many times for each participant First Nation: "Every community member that was able to, responded in any way they could. That's what I saw" (FN102).

Cross-Community Supports. During one remote First Nation's outbreak in which more than half of the community members became infected with the COVID-19 virus, it became challenging for the community to manage the needs of those individuals who had become ill

since many of the pandemic response workers and support or resource committees were unable to function. A major supporter of the First Nation during this period were the neighbouring First Nations who compiled what they could from their own resources, travelling hundreds of kilometres by snowmobile to transport firewood, food, water, and other resources to those in need.

> "What happened is that first year we are - communities is helping us everywhere. There was generous donations and people would show up - would send water and groceries. The other communities came by snowmachine and by truck to bring into place. And then we're very thankful for them" (FN101).

Neighbouring First Nations further organized donation drives to help support the response during this First Nation's outbreak, going to any lengths necessary to offer their supports:

> "Other First Nations did donation drives and sent in airplane charters to deliver their donations to our community. [One proximal First Nation] used a snowmobile caravan to deliver, and [another proximal First Nation] used trucks. [A third proximal First Nation] used trucks to deliver fire wood for heat. There were others that I do not have a list of" (FN102).

There was a strong cross-community response for First Nations in developing preparedness and response plans as well:

> "For the plan we developed, we shared it with communities like (removed for confidentiality). We started with all the surrounding communities" (FN302).

Tribal Councils & Health Authorities. Matawa Tribal Council, Windigo Tribal Council, and the Sioux Lookout First Nations Health Authority (SLFNHA) facilitated supports

to remote First Nations in their affiliated territories, providing resources and medical supplies where required:

> "We got it from SLFNHA, and we got it from NAN. Those medical supplies. And Windigo. Those three groups helped us a lot with supplies" (FN101);
>
> "So, currently we do have some people advising us and helping…One is through SLFNHA and the other is the tribal council, Matawa, for this area" (FN202).

SLFNHA further provided public health guidance to remote First Nations, informing communities of best practices for sanitization and cleanliness in order to attempt to moderate the spread of COVID-19: "We're told everything had to be wiped out, wiped away, and buildings office—office and at people's homes" (FN101). They further coordinated the delivery of medical supplies as First Nations required them:

> "If medical supplies were needed we got a hold of SLFNHA and say we need supplies. So, SLFNHA would coordinate the planes going in at the same time" (PL04).

One of the greatest facilitators of community response for remote First Nations located in Nishnawbe-Aski Nation (NAN) was the continuous reporting and communications that were distributed out of SLFNHA. Public health doctors and response teams worked tirelessly to respond to the needs of its communities, reporting the up to date status of cases and outbreaks across the North:

> "We had reports all the time, updates all the time. SLFNHA and Dr. Douglas was there. He was there every day calling us" (FN101).

SLFNHA's support also incorporated the use of an incident command system that would allow for information to be communicated and distributed through a universally understood language,

allowing First Nations to effectively report their needs to public health and medical professionals:

> "It's a system that's developed. I think it started as something else, something else like ICS, Incident Command System or something and it evolved into what it is today. I wanna say worldwide, but I'll say North American. Anyway, I think it started in the States and it's been adapted through SLFNHA…it standardizes everything. So, it's not that you can't adapt it. You can, locally. But you have the same lingo for example in other communities and your public health authority which is SLFNHA for us. So, it gives you a good idea on how to run things. So, one person in charge during an emergency instead of six or something like that and a team with prescribed roles and that sort of thing" (FN202).

One participant reported that SLFNHA was able to respond directly to the needs of remote First Nations located in the Nishnawbe-Aski Nation because of a prior agreement with the federal government that would allow them to take immediate action - assisting communities with preparedness and response efforts:

> "I think it might have been in response to the kind of sense that there was something coming down the pipe like a pandemic. SLFNHA had applied and whatever they came to propose to Health Canada that they take over that—being more relevant to us geographically" (FN202);
>
> "They have a great public health doctor, and the team came up and helped us get everything in place" (FN202).

Efforts were coordinated among various partners to most effectively calibrate personnel and supplies for response:

> "In terms of on the ground, there was nothing federally to PR provide human resources. Where they did provide human resources was in the medical field, whether it was doctors through the Sioux Lookout First Nations Health Authority, or nurses through SLFNHA, the tribal council, and through the First Nations Inuit Health branch" (FN202).

Provincial Territorial Organizations. Three provincial territorial organizations (PTOs) were mentioned throughout this study: Anishinabek Nation, Nishnawbe-Aski Nation, and Chiefs of Ontario. These PTOs operated as intermediaries, meeting with federal and provincial governments in order to communicate the needs of their representative First Nations:

> "Because the ministry doesn't know. They go to Anishinabek Nation, and Anishinabek Nation tells them what is what. So, they follow the Anishinabek Nation, or Chiefs of Ontario because they don't understand the structure and how First Nations operate" (PL03).

Arrangements were also made between one of the PTOs, government, and Ornge, an air ambulance company that services remote First Nations in Northwestern Ontario, to support vaccination roll outs:

> "And while that was going on or even before it maybe, Nishnawbe-Aski Nation was talking with Ontario probably to get Ornge—the ambulance service—to deliver those (vaccines)…I thought that was a very strong thing, because it consulted with Nishnawbe-Aski Nation and it was designed in Ottawa, or I mean Toronto, and it was very much in consultation" (FN202).

Federal and Provincial Governments. Discussion with participants about provisions delivered by the provincial government were similar to that of the federal government, indicating

that in most regards, First Nations were not adequately supported or resourced by either tier throughout the duration of the COVID-19 pandemic:

> "We could have a more positive response from them what the Chief was asking, yeah, we need more people, more people that have experience in these kinds of things, right. We needed more equipment too: People's trucks, people. We had to hire the local people to work for their trucks (during the outbreak). Yeah, we didn't have that too much money for that. We need trucks and also to go through the bush we needed a big heavy equipment. Yeah, those trails need to be worked on to maintain as well or else nobody can go on them" (FN101).

When asked how the federal and provincial governments could improve their response to First Nations for prospective emergent crises, it was suggested that government officials visit communities and take a more direct approach to meeting with First Nations in order to better understand how contextual factors impact the community's ability to respond effectively:

> "When something happens we would like people to come in and have meetings with us and go over things carefully. And have the discussion there. Exactly what we need—they need to understand that and if they look around the town, where our buildings are, what conditions things are, you would have more understanding. Hopefully they would help more that way" (FN101).

Further, respecting each First Nation's right to autonomy and self-determination would require that the federal government take guidance from community leadership in how to orient and fund their support: "Federally, we would expect whatever the First Nations ask for as we know what we need and how much. This includes everything, especially funding" (FN102). Where funding was made available to First Nations, it was not always sufficient for the duration of impact,

suggesting that funding protocol should be more responsive and should be expedited during times of emergent crisis:

> "Another problem we ran into was the governments would give you a lump sum of funding and most of the time the funding kind of ran out and we were kind of scrambling what to do because we were trying to provide the service—you know whatever service needed to be provided. And a lot of the time the funding would run out and we would have to go back and – either to the federal government or the provincial government to continue with the program that we were delivering. So, that was one of the problems we had. And of course, with the government it takes a long time for them to respond right" (FN201).

One participant from a rural First Nation indicated that funding flow was not an issue for their community, suggesting that differential funding flow protocol existed for rural compared to remote First Nations in Northwestern Ontario:

> "When it finally did break, we were able to reach out to our federal counterparts and identify what our needs were. It just flowed. Like yeah, we had no issues at all. I think by the time—so our money was flowing before we had our first COVID case. We already had our kits put together there. Ready to go…We didn't have any issue with funding whenever we needed to find it at the time. So, I felt like whatever we put in was approved federally and things did flow" (FN401).

There seems to be some discrepancy in the designated roles of each tier of government in responding to the needs of First Nations, with First Nations participants indicating that they were tasked with applying for funding with the federal government directly, while leads from provincial territorial organizations reported that the federal government's role was more passive:

> "The federal government obviously is less involved because it's just the way that the federal government runs that they share the information with the Assembly of First Nations and with us (Chiefs of Ontario), and the we can share that information out to the regions because again, the federal government is least—less involved, right because it's up to the provinces really to take over this work" (PL02).

Leadership further went on to state that although governments claim to recognize each First Nation's right to self-determination, in practice and during times of acute crisis there is often a lack of authenticity in recognition of First Nation sovereignty:

> "One of the things they found is right off the bat (we should) be flattered by the recognition of sovereignty. And even though when we were talking to the federal government, when we talk about that, they always kind of linger about the reality of what sovereignty is. But they always acknowledge it all the time. They like acknowledge it but yet when it comes to when we try to practice, it gets shut down all the time. So, we talked about the federal government making the statements during the pandemic with regard to the recognition of First Nations sovereignty. That's a bunch of baloney" (PL03).

Recognition of First Nations' right to self-determination on the part of the government must also incorporate collaborative development of pandemic response efforts that are tailored to the unique needs of each First Nation:

> "But then, we did a plan, we did where we do emergency management plan that's developed for communities when it's really developed based on national disaster" (PL03).

Further, it was suggested that where governments provide funding during emergent crises they also provide resources for personnel and training in order to ensure that each First Nation is able to foster capacity-building in order to meet community needs:

> "I've always told the government or the funders—if you're gonna send money to make sure there's money to hire a person as well, and or get a regional coordinator to help with the training. So, we got the capacity for it" (PL03).

While the federal government was responsible for providing some resources such as PPE to First Nations, expediency is more efficiently achieved when the federal government funds communities to support their individual coordination of response efforts and resource provision:

> "They had a federal stockpile—Health Canada had a federal stockpile. We did order from them in the beginning and we didn't see anything until about a year after. We said 'where is this' and we said 'well we ordered this stuff in March of last year' and we didn't get it until March of 2021" (FN301).

Time delays in resourcing communities was not an uncommon phenomenon among participant First Nations, both rural and remote:

> "So, federally, finally they provided more services than the provincial government. But again, when you needed them on the ground say to provide resourcing for the woodcutting for fuel, distribution for food, there was none of that. There was no coordination. It would've been nice to have the heavy equipment, but it's non-existent…I believe that the role that the federal provincial governments play is primarily financial" (PL04).

Expediency of funding and resource allocation to First Nations recipients prospectively should further be improved to increase each First Nation's ability to respond to community needs:

> "For federally (my suggestions) would be, well provincially too, we have—less red tape to apply for funding. They wanted specific numbers, but how are we supposed to have specific numbers when we when you don't know how much is there. Like what is the need, sort of thing. But when we applied, we always went big first all the time and we might get a little less than that. So, like I said less red tape and they didn't know either so that's the thing too. So, I guess they didn't really—like I said if we asked for 100 boxes, they sent us 10 kind of thing" (FN301).

Information Sharing. Information sharing emerged as a critical facilitator to effective pandemic response for First Nations throughout this study. Information took on a number of forms within and across First Nations and was a primary source used for moderating the spread of infection, and allocating resources in times of need. One First Nation used media to inform their own response efforts, incorporating border closures within the community only after witnessing these guidelines as a public health measure being enacted elsewhere in the world in response to the COVID-19 pandemic:

> "Actually, that came about—I think what happened was when you're watching the news—when say Canada went into the border closure with the United States and other countries, we took that. When they did that, we thought oh that's what we should do too" (FN201).

Information sharing was one way that provincial territorial organizations and other leadership were able to disseminate knowledge and engage with First Nations remotely. This was a primary facilitator of cross-community supports and collaborations:

> "From Health Canada, we had those weekly meetings with COO (Chiefs of Ontario) too. We had security updates and we had other meetings with the North Superior region, and

> had community updates there too. There was always updates going on. We always had communication open. We were always sharing with each other and collaborating on how to get through this" (RIB02).

Observing trends in what was happening elsewhere, allowed some First Nations to endorse their own measures proactively in an effort to protect community members:

> "We did look at numbers and we watched what was happening, not just here, but we watched what was happening in the States. We watch what was happening in like how is this actually moving and what does this actually look like in the places it was happening. So, you know, for it to not be here and then trying to look at what are the similarities. Listening to CBC radio on my drives and listening to what was happening in another community. The community that's similar in size. Initially they had two cases and four you know, and then it was 40 cases. Why? Why is that happening? We really wanted to know and understand" (FN401);
>
> "I watch the news every day and everybody else and we talked in how you feel about that…but yeah, we I think it was mostly for taking directions from the province and the news. That's where we were getting our direction from really" (FN303).

During a COVID-19 outbreak that occurred in one remote First Nation, information sharing through media outlets proved beneficial for the community, allowing external sources to coordinate the allocation of resources and supports for community members:

> "There was a lot of media coverage, especially in the peak of the crisis. The community, when you had over 50% that were isolated in their homes, they needed a lot of aid. So, the media coverage there was extensive and just by word-of-mouth people heard about the situation that was happening in the community through family, through friends. And

> people were responding in kind…And from that you'd have people that were calling for their own personal donations and asking how they could help personally" (PL04).

Improving information sharing is at the root of improving response efforts and subsequent outcomes during prospective pandemic events. When asked how Canada could successively improve response for First Nations, one Chief had this to say:

> "No one knew what was going on for the first couple months. That should have been improved. I think Canada's response time and information is supposed to get out there quicker in these instances, to citizens. I think that it's just honestly, it's just how the chain of command goes, you know, with any other business. It just rolled down the lines of communication. Maybe easing some people's minds in leadership instead of keeping everyone in the dark" (FN302).

Opening up lines of communication to facilitate information sharing among government and First Nations leadership would assist First Nations in implementing protocols independently, thereby alleviating some of the uncertainty that goes along with being left in the dark:

> "The higher ups are responsible for emergencies of the task. They figure out how they're gonna deal with it so that they get another team, you know, the operating team dealing with it. The logistics team dealing with it. That takes time. And from your first initial warning, or your first initial incident that clock starts and the longer it takes the government or those entities to sort out what's happening and how to respond to this, the longer it takes to even learn about it. So, I think that having these open lines of communication and updates right off the bat—I think that would have served us well" (FN302).

It was crucial for First Nations that their community members remain informed about the status of the ongoing COVID-19 pandemic. Various measures were utilized to reach this end, including the distribution of information to every household by delivering flyers door to door:

> "And we had a sheet out—like tier 1 to 4 to say what tier we were in. When we were at tier 4 we were at shelter in place, limit travel to town, like say try to go to town once a week or something to limit your exposure and stuff like that. So, we had that around too and that was delivered house to house. We also put it on our website and flyers to let people know what we were saying" (FN301).

Further, information sharing among the various levels of government and First Nations leadership was fundamental for First Nations leaders to be able to manage autonomous response efforts and organize preparedness measures:

> "Well, I gotta say this, when I attended those meetings, and I don't know, in those meetings they call them Chiefs meetings, those weekly meetings. There's so much clarity happens there" (PL03).

Uncertainty. A lack of clear coordination and communication regarding the ongoing status of the COVID-19 pandemic often resulted in uncertainty which further impeded First Nations leadership from knowing how to manage autonomous response efforts:

> "There was a serious thing. As for back home where people were just – they didn't know what to do…Sometimes we were like what happened? Nobody knew it was coming—this thing was coming. A pandemic, it was killing people" (FN101).

Establishing clear protocols for the protection of First Nations residents required that information and educational resources provide clear guidelines, but this was not always possible, particularly in the early stages of the pandemic. Where uncertainty surrounded public health guidelines for

moderating the COVID-19 virus, community members remained in isolation to err on the side of caution:

> "There was still a lot of confusion on the ground like with regular people about when they should and shouldn't isolate. And really hadn't had COVID. Because of the self - isolation everyone just went. They had COVID I think and felt the risk. So, there was a lot of like wading through and figuring out okay, you don't actually have any signs and symptoms. Yes, you were close to somebody who has COVID, but no you don't have COVID right now. So, there was a lot of that" (FN401).

In the wake of remaining in isolation for long periods of time, many First Nations residents remained fearful of the virus, uncertain whether it was safe to return to normalcy:

> "The thing that still remains is the fear factor. People are still kind of afraid even though the public health physician was telling the communities you know, we have the tools now. We can start treating this as you would the flu or the common cold—if you're sick you stay home, that sort of thing" (FN201);
>
> "Because we were all in the dark. We didn't know if you got it, you're gonna die, right? We did not know. We're all learning and I said I kept stressing that to our team—we're not right. The government don't know. We're all working towards this together" (FN303).

Surveillance

During discussions with collaborators about surveillance, 2 primary themes emerged: (1) monitoring which contained sub themes of community monitoring, contact tracing, testing, cases, and outbreak; and (2) surveillance sources which contained sub themes of Chiefs of Ontario, news outlets, and social media.

Monitoring. ***Community Monitoring.*** A major facilitator to mitigating the spread of COVID-19 into First Nations was the continual monitoring of community cases across the province. By tracking affected municipalities and sharing that information with First Nations, data analysts working with the Ontario Regional Chief's COVID-19 Initiatives Task Force were able to determine that an increase in cases in adjacent or proximal municipalities pre-empted a rise in the rates of infection for First Nations. Informing First Nations of this data allowed leadership to advise community members to avoid municipalities experiencing increased rates of the virus:

> "When we noticed a spike going up in certain regions, we would notice that First Nations communities would experience a spike as well—not right away, but within a week or two we would see spikes happening within the First Nations communities and that seemed to be how it always would go" (PL01).

Community-initiated surveillance took on several forms. One method of tracking the needs and health status of community members was the use of a colour coded card system. This system was used to indicate whether an individual had become infected with the COVID-19 virus, and further to communicate to pandemic response teams what resources and supplies they were in need of, whether that be food, firewood, water, or medical supplies:

> "There are certain, like military planning and the cards, the colour coded cards used. We used them to indicate water, food, whether they had COVID, or was just a lockdown. You know a more extreme lockdown because we had cases then they would use that" (FN202).

The use of a colour-coded card system was used widely among the participant First Nations to monitor community infection and to convey community needs. Without available healthcare

professionals, these signs would be used to reflect whether the residents were in need of medicines or other supports from the pandemic response teams or nursing staff. The lack of access to healthcare services in remote First Nations required that communities receive supports from nursing staff located in Southern Ontario, which provided some concerns for community monitoring:

> "They all come from so far down south that people are like, much more of an epicentre. And there are many more outbreaks where these nurses come from than there are in the northwest" (FN202).

Community-led monitoring meant tracing and tracking all incoming traffic, by plane and automobiles: "We have to continue encouraging people to go to the nursing when they get off vehicle and that includes the contractors" (FN103). For one remote First Nation, repatriation of community members during the COVID-19 pandemic required that the community pandemic response team remain posted at the airport in order to receive, test, and monitor all repatriated community members being returned home from 4 municipalities across Ontario: "…and we had to be at the airport every time the repatriation happened. Probably two or three days of that…" (FN202). Repatriation of community members proved particularly challenging in the midst of the COVID-19 pandemic since limited resources existed for the community to effectively monitor and track the status of individuals entering the First Nation.

Contact Tracing. When the first case of COVID-19 appeared in one remote First Nation in Northwestern Ontario, community members were alarmed since their community had closed its borders to outside travel, only allowing community members to leave the community for medical care. Contact tracing is an important measure that was implemented broadly during the

COVID-19 pandemic to identify the source of viral infection. For this remote First Nation however, concerns arose with the quality of contact tracing conducted on their behalf:

> "There was confusion because nurses had done some contact tracing with a person and then Health Canada in Ottawa told us a day later – they followed up and said it's okay all the contact tracing has been done. And the team was alarmed because no one here who knew people had done any contact tracing. And it was very scanty. Like it wasn't as thorough as we thought it should have been" (FN202).

Following this incident, the Sioux Lookout First Nations Health Authority stepped up as a strong supporter of community contact tracing in remote First Nations, providing supervision and resources so that communities could protect themselves against the spread of infection: "SLFNHA came in and helped us get the forms in place that we need for contact tracing, how to do all those things within a day" (FN202).

Testing. Autonomous testing protocols were established by each First Nation in order to mitigate the spread of COVID-19 into communities. For remote First Nations that are not road accessible, it was necessary to have testing facilities located at the airport to ensure that the COVID-19 virus was not carried into the community by incoming passengers:

> "They were tested. Everyone gets tested when they arrive in the community. And if they're positive we send them back out again. They couldn't stay in the community" (FN101).

Monitoring traffic coming into First Nations did provide some challenges, since service providers and resources had to be flown into the community. Further, individuals required to leave the community for medical services had to be tested upon return to ensure they were COVID-negative: "You had to be tested prior to returning. Those were the protocols of the

border closure" (FN201). A barrier to effective pandemic mitigation for remote First Nations arose in testing all incoming individuals. The airport had to be continually monitored for arriving planes since communication from the airlines was not reliable, thus requiring that communities maintain a continual post out at the airfield in order to effectively monitor individuals coming into the community:

> "I will tell you, because there are things coming in and out of here on a daily basis. In order to control, you have to have the pandemic workers on hand at the airport all the time" (FN103).

This was further complicated by a lack of adequate funding from governments, which was required to staff personnel and do continual testing for all incoming traffic:

> "It would cost a lot of money. Your first trip will be to the nursing station to get testing. Now you have to carry out. When I tell you, not as easy as just going to the airport and telling your passenger go there. The headache from the airlines too eh. They keep cancelling if they say they are gonna be there at 10 o'clock the morning. Not just being like oh the plane's coming at 10. We'll go there at 10. You have to have somebody there staffed all day. Otherwise the people will just come in" (FN103).

Cases. Although community and family connectedness are considered strengths among many First Nations, the spread of COVID-19-positive cases was attributed to social gatherings in some instances:

> "And then at Christmas time, we usually have a Christmas gathering. All the people come to that place for this time. It was (at the) school gym. So, we have a gift exchange. We went there on December 24 and then the next day we learned that there was one child with the COVID-19" (FN101);

> "We did a lot of contact tracing, and it was because it was a lot of social stuff in that one and it wasn't on a flight and nobody had travelled" (FN202).

One remote First Nation managed the tracking of cases through their Command Centre which operated as a centralized point of organization for the community's pandemic response efforts. In order to keep track of which households were affected by the COVID-19 virus, the entire community was mapped on a wall in the band office, with the houses of individuals who had become infected indicated on the map. This served as a tool for the pandemic response team to coordinate supports and to bring food, water, firewood, and other resources to individuals in need.

> "The ones that were—there were some homes that were free (of COVID-19) eh. It's the ones that had that virus—even one case. We had them on the wall" (FN101).

Travel was considered to be a primary implication for the rise and rates of cases of individuals infected with the COVID-19 virus: "We knew where the child (who was infected) didn't travel, but some family members did" (FN101).

Outbreak. Travel was also implicated in the incidence of outbreak experienced by First Nations:

"There was more travel. People were just coming in again. It started spreading" (FN101). The rates of cases in one remote First Nation quickly turned into an outbreak, with the virus spreading throughout the community and quickly infecting more than half of the members:

> "Everybody has to stay at home. The stores had to be not open all the time. About a week after that child, we were in a lockdown. The virus keeps spreading in the community. Pretty soon it was more than half the people who got it (COVID-19 virus)" (FN101).

In addition to social gatherings, overcrowded housing and a lack of infrastructure proved to be a barrier for communities to effectively moderate the course and spread of infection. With a viral pandemic such as COVID-19, living in overcrowded conditions led to rapid spread of the virus:

> "And then some communities you know, there's a housing shortage, so they would have 10 or 15 people living in the same household and of course, if one person gets COVID you know, it's pretty certain that the entire household will catch it as well" (PL01);
>
> "We had to make sure that nobody goes out, that they stay in their own homes. And we try to get a place where they can stay those people who were sick. But we couldn't do it eh. Once they're positive they have to go home and take the virus to their family. Nobody could go anywhere. Just stuck in the home. The ones who were free. And then after a while they got it too from the individuals that they're living with. Sometimes whole households had the virus" (FN101).

With an outbreak of this magnitude, and with families cohabitating in single dwellings, it became increasingly difficult for community members to be able to implement mitigation measures or respond to the needs of individuals who had become ill:

> "When we were hit with the biggest community outbreak where over 50% of our community was positive, we could not even use any plans as the people who were to manage any emergencies were just about all infected with COVID, or they were isolating with their families" (FN102).

SLFNHA was identified as a strong supporter of remote First Nations during periods of pandemic outbreak, coordinating meetings to identify the needs of communities and supporting response efforts:

> "We have a good system of meetings set up with SLFNHA for a public health officer, Dr. Lloyd Douglas. So, I think that was at least weekly in difficult times—more for if we had an outbreak. We had more meetings" (FN202).

The COVID-19 initiatives Task Force operating out of the Office of the Ontario Regional Chief was also a strong supporter of Ontario First Nations, providing consistent communications and information sessions to guide the actions of First Nations leadership:

> "We've been saying there's an outbreak in Ottawa, so communities near Ottawa tell your people to avoid Ottawa. Outbreaks you know, hot spots where we were talking about hotspots within Ontario and again, if any of the Chiefs within Ontario region had an outbreak, they would share that information" (PL02);
>
> "When the Regional Chief first came on board with COVID she had asked them all of the Chiefs share their data amongst the Chiefs. So, what that meant for us is that if a community had an outbreak, they would notify us so that information we could relay back to the Chiefs" (PL02).

Although supports from SLFNHA and other provincial territorial organizations were helpful for sharing information with First Nations, in instances of pandemic outbreak, community-driven response was fundamental to the coordination of supports and resources:

> "I was coordinating [in the city] and my coordination was to the extent of whether we needed to send in relief workers or medical supplies, or if we needed to send truckloads of food for whatever. That was my role. But within that effort, there were individual groups that were organizing on the ground level. Like if I had to get supplies from, say [Grocery Store] the workers there organized that. And if I needed all my hardware supplies, they would call and they would organize that. It was just a matter of

> coordinating truck pick-ups, and you know that the drivers had to know what time and where and how much. So, that kind of coordination. So, the fact is you had different people, different levels, doing different things And, that's what made it successful" (PL04).

Coordinating information sharing with autonomous response efforts during times of COVID-19 outbreak provided effective measures for addressing community needs while minimizing the likelihood of unnecessary viral spread.

Surveillance Sources. First Nations across Ontario utilized various surveillance sources to monitor active cases in the province and remain informed. One surveillance source was the COVID-19 Initiatives Task Force who provided continual information to First Nations leadership during weekly meetings in which leadership would be updated about any ongoing cases, outbreaks, and 'hotspots' in the region:

> "We just provided information and made sure it got there. Ontario Regional Chief (Archibald) would share it through her social media and then we would send it out through emails to the Chiefs just to make sure they were all aware of what was going on throughout the province" (PL01).

These communications and information sessions were useful avenues for disseminating information to First Nations leadership across Ontario, providing opportunities for many First Nations leadership to express their concerns and identify the imminent needs of their communities:

> "And often when we had a speaker series – sometimes Chiefs would log on and talk about their needs in terms of PPE for their communities, and what their needs for

response were. So that was another communication channel that was provided for them" (PL012).

Social media was also a primary tool used for community surveillance, with First Nations using community Facebook pages to report active cases, outbreak status, and vaccine numbers. Many communities further used social media to do daily reports and updates, keeping community members informed on all relevant topics related to COVID-19. The Chiefs of Ontario's COVID-19 Initiatives Task Force utilized this surveillance and reporting method across First Nations to identify trends and track data for First Nations across the province:

> "Some of them were really good for keeping a daily tally. Like their Facebook page would have a daily post like say this many people for current cases" (PL01);
>
> "What we did was through social media, through our newsletters, email list, we kept in constant contact with our band members here in our community" (FN302).

Media and news outlets were additional tools for helping First Nations to monitor the ongoing status of the pandemic globally and regionally, providing leadership with ideas for how to protect their own communities:

> "We heard about COVID happening. In Europe at first, we were watching some news. And then it came across to North America and Canada and we have the TV. We have CBC News, we have CNN, and we follow what's happening" (FN101).

Response

Discussions surrounding the dimension of response effort were broken down into four primary themes, each containing sub themes: (1) protocols, which contained sub themes community lockdown, quarantine, evacuation, state of emergency, testing, and vaccines; (2) resources which contained sub themes food resources, fire wood, PPE, heavy equipment, and

unknown contributor; (3) personnel which contained sub themes pandemic response team, and positive leadership; and (4) inadequate response, which contained sub themes of funding, and time delays. Dominant sub themes will be detailed below.

Protocols. ***Community Lockdown.*** Community lockdowns and border closures were common practice among the participant First Nations. Although protocol for managing such closures varied, it was generally accepted that closing the community to outside traffic was an ideal measure for moderating the spread of COVID-19 into communities: "The protocols were so strict. One of the things that really helped I think was the border closure" (FN201). Closing communities to incoming traffic allowed First Nations critical time to develop response plans and manage COVID-19:

> "So, basically all of the First Nations they went into the border closure and it kind of limited – it wasn't until the following year that the virus went into the communities, but by then they had developed tools" (FN201).

One participant from a rural First Nation discussed the process involved in putting up border closures for her community and reported that she was not a proponent of using this as a mitigation measure since it inherently disrupted each individual's right to autonomy:

> "I'm still on the fence of how I really feel about the gates right, because I think you're right. Now they're they really are applauded right, like people have applauded First Nations for doing that, for taking that initiative and saying no, our people are that important. Like, we're going to put this gate up and we're going to prevent this COVID from coming in. But I think maybe my perspective was more that perspective like, chain of infection. That there's things that personal responsibility that we really need to rely on

> to keep people safe versus, you know, now doing one more thing to infantilize people, right? Making decisions for them, which I think gates did" (FN401).

Quarantine. Quarantine measures were particularly important for remote First Nations, requiring that individuals entering the community immediately go into isolation:

> "And upon return anybody that had travelled had to isolate themselves. An then after a while it was 10 days and as the process went on it was 5 days and that. Anybody who was travelling had to quarantine themselves" (FN201).

It was essential for medical professionals flying into remote communities to isolate as well to prevent infecting community members:

> "Like even say, the doctors—especially the nurses that came into the community—they had to quarantine prior to entering the community and they had to be tested a full 72 hours before entering the community and they had to be negative" (FN201).

Since access to healthcare services are limited in many First Nations in Northwestern Ontario, full border closures were not always possible. Modifications to the closure protocols were required for individuals having to travel outside of the community for medical care:

> "Except for those people who were quarantining who had gone for a medical appointment—who had gone to see a doctor. That was one of the restrictions was the travel is you had to have an outside appointment to see a physician or a specialist. That was the only restriction they would allow you to travel for" (FN201).

One remote First Nation was able to utilize their community centre to quarantine all incoming persons into the community, separating the centre into small rooms:

> "So, we ended up using the community centre. Yeah, we made a which it's called separate little spaces in there with beds. Quite a few beds, maybe 10—between 10 and

> 20 beds. Yeah, so that's when people come in, that's where they would go. When they come into the community. We wanted them to stay there for 14 days at first. And after that time was up they could go back to their own house" (FN101).

State of Emergency. Three participant First Nations necessarily declared a state of emergency during the COVID-19 pandemic. The declaration of a state of emergency in response to the pandemic was one avenue to having the First Nation's imminent needs brought to the attention of the federal and provincial governments:

> "When you declare a state of emergency you have to have certain departments that declare that emergency. And then of course hopefully it was that both levels of government respond" (PL04).

By declaring a state of emergency, one Chief was able to expedite the allocation of funding and resources for his community:

> "When the pandemic first hit we also declared a state of emergency for our community. Declaring a state of emergency allowed us to obtain resources in a timely manner and also got the attention of the provincial and federal governments. Basically, declaring a state of emergency really puts us in the forefront of what was happening. We are able to access resources quicker. We got more resources just because of that status for us. Having that status worked really well. Unfortunately, sometimes you have to do things like this to get the government to recognize we're here" (FN302).

The requirement for some First Nations to evacuate during the COVID-19 pandemic provided additional barriers to managing community needs, with repatriation efforts spanning numerous municipalities in Ontario. One participant suggested that repatriation efforts could be improved

for communities having to evacuate if neighbouring First Nations were instead asked to support evacuees:

> "There are situations where our community is evacuated. Then you go to evacuate, but where should you evacuate them, and why should you always have to evacuate them to urban centres? Instead of Thunder Bay or Red Lake, why not set something up with a neighbouring First Nation and accommodate them that way. And build up the capacity of that community for that purpose. They can sleep with people and where their supplies are for food and water, bedding and things like that" (PL04).

Testing. For remote First Nations participating in the current study, it was important to have additional infrastructure to facilitate testing of incoming passengers before allowing individuals entrance into the community:

> "They put up a building at the airport and all the passengers coming off the plane they go through there and at that place they have people there who do the testing. Once you get tested they'll do a test on you and if you're negative they'll come and tell you that you're negative and you can go out into the community after that. It takes about an hour or two hours" (FN201).

In some communities, personnel were limited, acting as a barrier for First Nations to ensure that all community members were tested. In response to these limitations, some communities developed alternatives to support testing protocols. With limited nursing staff available to conduct testing within the community, one First Nation created videos for its community members, providing directions for self-testing that could be broadly disseminated:

> "I think the only thing that really held us back here from really putting more together was the fact that I was the only nurse, right? And I didn't operate as a nurse, right…But we

> didn't have anyone who could do testing. They have to rely on self-testing. So, we needed to create videos for how do you do a self-test like, how do you do those things" (FN401).

While testing proved to be more challenging for remote First Nations, reports from one rural First Nation participating in this study indicated that resources were made available to support the community development of testing facilities similar to those found in a neighbouring municipality:

> "We had it set up just like the urban centres that--we had ours here. There'll be station setups where you get registered and go get tested for your results. And then you know your results if you tested positive, you're given the proper equipment, and then you know, you're at home anyway, so we would help bring groceries, or medicine, or whatever we needed to bring to anyone who was infected" (FN302).

For individuals who were elderly, immunocompromised, or had mobility issues, one First Nation had their community nurse conduct home visits to do testing: "definitely the nurse went into the home to do testing" (FN303).

Vaccines. There was considerable variation in vaccine uptake for First Nations across Ontario. Advocacy and information sharing were strong facilitators of the high rates of vaccination among many communities. Some First Nations advocated for their members to gain access to the vaccines as they became available:

> "Prior to the outbreak and when the government offered the vaccines, I started advocating for our community to get vaccines and we were lucky to have a huge percentage of our local population vaccinated" (FN102).

There was also a high uptake for 3 First Nations participating in this study: “I think most—just about everybody in the community here participated (in the vaccines)” (FN103). Operation Remote Immunity was a collaborative partnership between Ornge air ambulance and the provincial government that was designed to increase access to the vaccines for remote First Nations located in Northwestern Ontario: “Nishnawbe-Aski Nation was talking with Ontario probably to get Ornge—the ambulance service” (FN202). Feedback from this endeavour was positive, with discussion with participants highlighting how the support provided by Operation Remote Immunity alleviated some of the burden for community nurses:

> “They did a very great response to—so we wouldn’t have to be the one who’s giving the vaccine because the nurses were stretched way too thin here on the ground. So, they would bring in their volunteer doctors and nurses that was – there would bring up a team and they would join our team. We would join as a team” (FN202).

To expedite organizational processes prospectively as they relate to vaccines, one participant suggested that communities should have direct access to their vaccination information:

> “One thing that comes to mind is that our workers here, our workers like they’re lay people I know, they’re not nurses, but they needed access to the provincial database on vaccines. And I don’t think we ever worked that out. It’s labourious more than it needs to be because SLFNHA has to provide that. I’m not even sure at this stage whether they got the permission and how they did that, because it’s confidential right. They provide a list of people who need their whatever booster is coming up. They provide that list to the community, but it’s a hassle. Every time I can tell you that. It kind of delays the organizational process here for that to happen. You’d think the nurse in charge could be

> the one to receive that information and disseminate it or whatever. I'm not sure how to work that better—all the legal ramifications" (FN202).

Rural First Nations reflected a similarly positive response to vaccine uptake, advocating for the rights of their community members to receive priority access:

> "First Nations took the lead for vaccinations. They were the lead and they provided access to a lot of people that would not have had access to the vaccine according to the queues, right?" (FN401).

Proactive information sharing with community partners and diligent advocacy work by leadership were among some of the facilitators to an increased vaccine uptake during the COVID-19 pandemic, thereby moderating the increased rates of mortality and morbidity experienced by First Nations during previous pandemic events.

Personnel. ***Pandemic Response Team*****.** Each First Nation that participated in this study developed a pandemic response team or had an ongoing emergency response team tasked with carrying out the duties of responding to community needs. While the duties of each pandemic team varied, the general protocol was to have a specified group of people patrol the First Nation, resourcing and supporting community members, particularly those who became infected with the COVID-19 virus:

> "We checked on every home. We had many workers to go around and they can – people can also call in eh. Yeah, but I know sometimes I tried to go to homes but I had to stay outside and talk to them through the door. I couldn't go in and if somebody had the virus and what they needed. So that's how we communicated with them…at the command centre we phone homes too eh" (BFN01).

In some instances, pandemic response teams operated out of a centralized command centre, organizing response and supports for community members while tracking community information:

> "We had a big board where we listen to everybody. Yeah, and all what their condition was okay in order for numbers and always the continuing communicate with people. And then the workers would make deliveries all the time. But it was very hard work and they couldn't keep up. Me and another person, we try to keep up with the demand everyday" (FN101).

Pandemic workers would deliver food, water, and other resources from the store for individuals who were isolating in their homes:

> "They would go buy groceries for the household that were unable to, that were in isolation" (FN103);
>
> "They would just be in that one area, but they would be serving (the entire community). So, there would be goals and they'd be serving them by getting water or groceries for them, instead of them going out. The stores closed. I don't know I know in the south stores closed as well, but we only have two" (FN202).

The roles of pandemic response teams were vast. In some communities, the teams were responsible for the ongoing monitoring of all incoming traffic to ensure that COVID-19 was not being carried into the community:

> "After a while, they developed what they called a pandemic team. Basically, all they did was work on the pandemic and receive all those people who were asking to come into the community. And they had to have proof to come into the community and they had to have proof of being tested. Those were the protocols. We still do that today" (FN201).

Many First Nations put together kits containing all resources and supplies necessary to last the duration of isolation for those individuals who became infected with COVID-19:

> "We put together COVID care packages and it has to do with their comfort. What do you need to be comfortable? What do you need to make sure that you didn't leave your house to go and spread it around? So again, it was the—I would call them the COVID care kits. We had things like chicken soup, crackers, ginger ale. We had things like Tylenol and ibuprofen. We had things like juices. We had some things like comfort food in there too, right? Like granny tarts or whatever. Whatever it was to make them feel comforted" (FN401).

Positive Leadership. Positive leadership was a major contributor to each participating First Nation's ability to manage community mitigation measures throughout the pandemic, with coordinated efforts organized by Chiefs, council members, health directors, community nursing staff, and other pandemic response team workers, among others: "That's our strength here I think- our team and of course our leadership. Works good" (FN303). In some instances, band councillors received the vaccine first in order to demonstrate to community members that the vaccine was safe: "Yeah most of them got it. Yeah, we encourage them. Band council got their vaccine first and we encourage everybody to do it" (FN101). One participant further indicated that leadership supporting vaccination resulted in greater uptake for community members:

> "So that way, it would be symbiotic. I mean, we have pretty good uptake numbers, obviously, communities differed, and we did notice—and this is another one of those trends—that the more the Chief in the community was supportive of vaccines, it appeared that there was a higher uptake in the community for vaccinations" (PL02).

Community nurses provided treatments for individuals who became infected with COVID-19: "For community members who contracted COVID-19, for neighbouring communities (too), our nurses managed the treatments" (FN102). The presence of First Nations nursing staff also helped to alleviate fears about vaccines:

> "It was helpful to get directions from the nurse, and she explains—she was a trusted nurse. At the time, she was a trusted nurse and so people trusted her opinions and her knowledge. And once they talked to her and she answered their questions, they got some—I know two people who weren't gonna get it, but after talking to Sara they got the vaccine. So, it helped having our nurse speak with them and answer their questions and alleviate their fears and stuff like that" (FN301).

A Chief from one rural First Nation did what he could to support programming throughout the pandemic, offering events online and services for community members to promote mental well-being and a sense of normalcy:

> "We provided a lot of resources in regards to mental health resources. Programming for kids. We had remote or online Winter Carnival, we had everything that we did in person - we did online as best as we could. We just tried to maintain normalcy throughout our community and our band membership as best we could. Just to give them a little peace of mind right. Like without being worried about the COVID monster coming at night. It was really, really intense, but in regard to—we just kept on the status quo. We just kept on going. We didn't take anything away, we just added, added, added" (FN302)

Proactive and effective leadership required that some leaders face their own fears and the fear of the unknown in attempting to respond to their communities:

> "It's like going into war. You're gonna die, but you still gotta go and that's what they say inside there—and what I learned when I was in the army is you go anyways, and that fear will leave you. So that's why I got motivated, and I jumped in there [during COVID]" (PL03);
>
> "I just went into each of those three bubbles, and I sat down to talk to each of those groups. When you look at that whole situation, it's understandable. People don't want to get infected" (PL04).

Resources. Adequately resourcing First Nations requires that governments consider the individualized needs of each community:

> "It's like that all the time with anything. We really need funding for this and that up north. And things are much higher there. We had to plane things in for food and yeah, everything. More than a lot of things groceries had to be flown in" (FN101).

One participant outlined the key resources provided to his community by neighbouring First Nations: "They came in with their firewood and all supplies. Their own supplies they help us. There's a lot of water, there's groceries" (FN101). Sufficiently resourcing First Nations was also a key component of preparedness:

> "We were not prepared in terms of how big this was going to be or how long it would be. I believe neither were the governments. We lacked the resources that were needed-isolation centres and supplies, both medical and grocery, and wood for heating our houses. There is a long list I could go into for this" (FN102).

One remote First Nation required heavy equipment to maintain trails around their community during their response to the COVID-19 pandemic:

> "It would've been nice to have the heavy equipment. When you think about that work was needed. You know, it'd be nice to have a worker doing all that and a big truck to haul it. You don't have those kinds of resources. So, you do what you can with a small truck that you have, the skidoos that you have. Resourcing like that is, for me, something that is valuable that should be in place for communities in emergency responses like that" (PL04).

Reconstruction & Recovery

Reconstruction is a vital component of public health emergency frameworks as it focusses on the long-term recovery, restoration, and planning for prospective events. Reconstruction efforts are crucial for long-term recovery after a global pandemic. The reconstruction phase involves community rebuilding to restore normalcy and quality of life for affected populations. Reconstruction contributes to revitalization, community stabilization, and social cohesion, while also supporting the mental wellbeing of impacted communities and persons. The reconstruction process further provides an opportunity to incorporate resilient design principles and practices, making communities better prepared for future pandemic events. This includes implementing adequate infrastructure and integrating risk reduction measures into rebuilding processes. In the aftermath of an emergent crisis, economic growth and job creation may be supported through reconstruction efforts. Reconstruction projects may also play a significant role in restoring a sense of normalcy, social cohesion and psychological well-being among affected communities. Timely and effective reconstruction helps alleviate the emotional and psychological burdens of emergent crises on individuals and facilitates community healing.

Self-determination

Self-determination is foundational to each First Nation's ability to effectively manage mitigation measures during prospective pandemic events, and as such, collaborative partnerships with government must be established that seek directives from First Nations partners. It is important in supporting First Nations that efforts be made to dismantle government and First Nations' roles from the entrenched processes currently being enacted:

> "…it's not the community's choice. I think an election and you may be familiar with the Indian Act and colonial force on communities. The community should have their own constitution and they need government support for that process to happen. We had our own constitution; we can have a three - or four-year term for the council. With a lot of rules that come up that should be decided by the community. Maybe more traditional approaches to elections or whatever the community would choose…It's unstable in general, and certainly during the pandemic to have a two-year changeover is difficult" (FN202).

Providing First Nations with necessary supports to develop independent surveillance and information sharing networks is one way to foster self-determination:

> "I think that there is more credibility because it's for us by us, which I think is an issue that First Nations have is, you know, that paternalistic perspective that the government has. So, if it's for us, by us, it gives us a lot more opportunity to be information sharing instead of telling us" (PL02).

While lessons can be learned and shared across First Nations, it is important to remain mindful of each community's diversity and unique needs:

> "I think too the other part is like some of the things that I had gotten initially worked because it was a small community. And there's things that are probably not transferable to other places, like I couldn't imagine Six Nations doing what I did" (FN401).

The knowledge contained within First Nations is uniquely tailored to each community's circumstance and thus, may optimally direct response efforts for that specific community:

> "So, living in my community, working there, I had a lot of information here that I didn't even have to access and EMR to find that information. I knew because I sat down with my mom" (FN401).

Self-determination was highlighted as a critical strength for First Nations in responding to the pandemic:

> "I believe that the First Nations really came together in their communities to provide front line support, to provide resources, and to advocate for resources as well. Because we're already going through so many health disparities, and because we're already going through so much with colonization and everything—the way that we came together to figure it out through a pandemic, to figure it out on our own—that was a strength in itself" (PL012).

In the development of pandemic plans, First Nations' self-determination and autonomy provides the opportunity for response measures to remain value-centred, thus enhancing community adherence:

> "Like you know, even your reflection like how important our values were to our response. And that's a part of sovereignty, like I think too, especially as nations and trying to be nations and understanding what does nations actually mean, like, to be our own sovereign nation. Sovereignty is kind of like this pie in the sky idea, but now, it's not really the pie in the sky. It's drawing the lines together, right?" (FN401).

While there is no single appropriate response for the individualized needs of First Nations, one participant suggested using a template to share strengths among leadership:

> "Basically, developing their own community pandemic response, because I would say a collective response to First Nations would be effective, like say maybe a template, but also a community—every community is different. We all have different needs. So, I would say a template would help communities build the responses by looking at what other communities have done well. So, creating our own pandemic or emergency response teams. Because that's another thing that's needed in communities" (PL01).

Mental Health

One of the most critically underserved aspects for First Nations during the COVID-19 pandemic was the mental health and well-being of First Nations peoples. The grief and trauma that resulted from the loss of family and community members as well as the continued stress of attempting to moderate the COVID-19 pandemic within communities is one factor that must be considered for prospective pandemic planning and preparedness:

> "If you're in a crisis, you don't know how much you're traumatized eh? It's a mental issue eh? People could die from there. You know, and the damage it is to you—to yourself, eh?" (FN103).

Each participant First Nation reported their own experience attempting to manage continued mental health difficulties throughout the pandemic, with some expressing concern about the increased rates of opioid use during community lockdowns:

> "Well, the (numbers of opioid use) did increase during COVID, yeah. Like it kinda went down for a while because we do have a program because what the program is supposed to do is ween the people off of what they're using. That was the intent of the program. We still have that—I don't know exactly what the numbers are, the people on that program. But it hasn't changed – the use, it has not changed. It's pretty much the same, but it hasn't changed. Initially it went down but it came back up again, but that tells us there's an issue there, a mental health issue" (FN201).

Attempting to deal with the ongoing pandemic has resulted in grief and stress for many First Nations, with challenges surrounding the ability to deal with extensive familial and community losses:

> "Even our Elders they're under a lot of stress. And another thing that's happening, I don't know if it's related, pandemic related, but we have had 29 deaths since last May. 29 of our members have passed on for various reasons. Some of them are related to overuse of opiates. I know for a fact, two for sure passed away with the COVID-19. I don't know if that's related—even with that 29 people passing, the community has not

> had the opportunity to grieve or mourn and that itself is a problem as far as mental health is concerned…There is something happening here. So, that's become an issue, a mental health issue. For everybody for that matter…it's pretty much the whole community" (FN201).

One participant reflected that her community's current challenges with mental health paralleled the COVID-19 pandemic, suggesting lessons could be learned from pandemic experiences to address ongoing mental health and addictions crises:

> "Arguably, the day to day of COVID was one thing, it was a big thing. A huge thing because it was a world thing and you're part of the world in dealing with that. But on our level of day-to-day level, mental health and addictions is probably at that level of COVID. And we're not using the tools that we might have learned from COVID in order to deal with that. And mostly that's because we're not seeing it as the same way to do" (FN401).

Chapter 5: Discussion

Summary of Findings

The purpose of this study was to understand the experiences of rural and remote First Nations located in Northwestern Ontario during the COVID-19 pandemic. To gain this understanding, this inquiry process was framed around the following 4 research questions: (1) During the COVID-19 pandemic, what has the experience been with regard to mitigation measures and interventions - vaccines, healthcare supports, PPE deployment, etc.?; (2) Which response measures have been addressed autonomously by each of the four participating First Nations?; (3) What has the federal, provincial, and local or regional response been for participating First Nations?; and (4) Which strengths, issues, and barriers did participants note during pandemic mitigation efforts?

First Nations leadership, community members, and individuals representing provincial territorial organizations during the COVID-19 pandemic were consulted for this study. Participant backgrounds were diverse and included Chiefs, Deputy Chiefs, health directors, nurses, community health representatives, and pandemic response team members, which facilitated the development of a nuanced portrayal of relevant experiences. Headings for this section include: (1) Barriers to Pandemic Response for First Nations, (2) Facilitators to Pandemic Response for First Nations, and (3) Supporting First Nations in Building Paths Forward.

Barriers to Pandemic Response for First Nations

Challenges faced by First Nations during public health emergencies and acute crises are vastly different from those faced by the general Canadian population and differences must be acknowledged and supported in the development of pandemic preparedness plans and mitigation

efforts (Chief L. Cowie-Carr, personal communication, March 31, 2021]; Fleury & Chatwood, 2022; Clark et al., 2021; Richardson & Crawford, 2020). Participants in the current study identified key barriers to effective planning and response which included barriers related to the federal and provincial governments, such as (1) surveillance; (2) testing; (3) funding; (4) time delays for resource allocation; barriers related to the social determinants of health, including: (5) access to healthcare services; (6) overcrowded housing; (7) access to potable water; and (8) lack of infrastructure to sufficiently address community needs. Many of the barriers identified by participants were echoed in the literature.

Federal and Provincial Governments

Lavoie and associates (2020), reflect that effective mitigation efforts require accurate representations of a given population's sociodemographic, health, and behavioural indicators. These markers were not widely available for surveillance purposes during the COVID-19 pandemic, which resulted in challenges accurately collecting and tracking information for many First Nations in Ontario with the degree of specificity required to moderate the spread of viral infection. Surveillance systems were not in place at the onset of the COVID-19 pandemic, requiring that First Nations leadership collaborate with the Chiefs of Ontario's COVID-19 Initiatives Task Force to supplement and source autonomous tracking endeavours. According to Lavoie and associates (2020), reflect that additional issues arise for planning in First Nations and other Indigenous communities when governments assume homogeneity for all citizens, and in doing so fail to recognize the vast cultural and traditional diversity of Indigenous peoples across the country. As such, it is especially important that governments amply resource autonomous mitigation efforts.

3 of the 4 First Nations who participated in this study faced issues related to testing for their communities. This was in part due to the limited healthcare and nursing staff available to administer tests to the entire community, but was also attributable to the lack of infrastructure, which posed issues for safely monitoring and testing individuals coming into communities. As Pickering and colleagues (2023), and Morales-Narvaez and Dincer (2020) noted, testing is a critical measure for minimizing outbreaks related to the COVID-19 virus.

During emergent crises such as pandemic events, funding is distributed to each province, with the onus upon provincial leadership to manage and enforce public health measures independently (Kyoon-Achan & Write, 2020; Craft et al., 2020), leading to the inequitable distribution of resources, particularly where Indigenous communities are concerned (Craft et al., 2020). Discussion with participants about provisions delivered by the provincial government were similar to that of the federal government, indicating that in most regards, First Nations were not adequately supported or resourced by either tier throughout the duration of the COVID-19 pandemic. While some participants reported that federal and provincial governments supported First Nations pandemic planning initiatives, there was no clear consensus reflecting exactly what those supports were or what the criteria were for inclusion of First Nations partners in planning endeavors. Further, 3 participants from one remote First Nation indicated that implementation of existing pandemic plans came to a standstill as a result of the lack of funding for sustained mitigation efforts. While the federal government was responsible for providing some resources such as PPE to First Nations, expediency was more efficiently achieved when the federal government funded communities to support their individual coordination of response efforts and resource provision. In addition, participants from each First Nation in this study indicated that

cross-community or within-community supports and resourcing was more reliable than federal or provincial supports during times of imminent need.

Indigenous experiences with global outbreaks such as the H1N1 and COVID-19 pandemics demonstrate that the coordination of efforts among governments and other stakeholders regarding decision making and information sharing can be extremely complicated (McNeill & Topping, 2018; Morrison et al., 2014; McMahon et al., 2020). Numerous time delays arise in the transfer of vital information during high pressure periods such as pandemic outbreaks, with each tier of government often providing incongruent information for protocol measures (Fleury & Chatwood, 2022; Lavoie et al., 2020; McNeill & Topping; 2018; Morrison et al., 2015). Similar to reflections from participants in this study, delayed or nonexistent communication regarding ongoing pandemic interventions has been expressed (in other FN communities?) as a main concern impacting adherence to effective mitigation for many First Nations during the COVID-19 pandemic (Fleury & Chatwood, 2022). This was further supported in the reflections of one participant that improved and timely information sharing by federal and provincial governments with Indigenous leadership would have better equipped First Nations in developing and implementing autonomous response efforts.

Social Determinants of Health

Canada's Indigenous peoples have different levels of government responsible for the delivery of healthcare which leaves fundamental gaps in the provision of essential services (Fleury and Chatwood, 2022). This disjointed system of health care delivery was also a major barrier to effective pandemic response to the First nations participating in this study. First Nations were unable to enforce border closures since community members were required to

travel to larger municipal centres for healthcare services. Broad systemic barriers to equity result in impediments to the availability of timely and effective healthcare (Richardson & Crawford, 2020), which is particularly impactful during a public health emergency such as COVID-19. As discussed in the findings, these systemic barriers resulted in untimely mortality for two individuals travelling to Thunder Bay for medical treatment for pre-existing health conditions when they became infected with the COVID-19 virus. Furthermore, immediate lockdowns and other provincially mandated public health measures unfairly burden Indigenous populations since many are unable to facilitate care for their citizens without the ability to access supports, resources, or healthcare services from proximal municipalities (Chief L. Cowie-Carr, personal communication, March 31, 2021; Etowa et al., 2021).

Smith and colleagues (2021) affirm that although the current pandemic has been devastating for the Canadian population in general, remote and isolated First Nations continue to experience a disproportionate burden of impact from the virus due to overcrowded and inadequate housing and lack of potable water resources. Structural and administrative inequities caused by a lack of infrastructure funding contribute additionally to complications during emergent crises for First Nations (Kyoon-Achan & Write, 2020). A key recommendation for improved mitigation has been for the social determinants of health to be remedied for Indigenous populations, but in the years following the H1N1 pandemic - despite the publication of the TRC (Truth and Reconciliation Commission of Canada, 2015) and Canada's ratification of UNDRIP (United Nations General Assembly, 2007) as well as damning reports from Auditor Generals' about Canada's treatment of Indigenous peoples etc., very little has been done in this regard, leading to poorer outcomes related to COVID-19 (Kyoon-Achan & Write, 2020; Fleury & Chatwood, 2022). Moderation of the spread of COVID-19 in a geographically remote First

Nation would therefore require that these factors be addressed in coordination with common findings that traditional values and approaches to healing and wellness must be honoured. For one remote First Nation in the current study, the lack of infrastructure posed issues for community monitoring, placing community members at an increased risk of infection. When this First Nation sought support from government, the infrastructure they were provided was not sufficient to support community mitigation efforts adequately and safely. Addressing the infrastructure needs of First Nations is critical for each community to be able to manage the course and spread of infection to its residents.

Facilitators to Pandemic Response for First Nations

Findings indicate that roles for preventative and interventive action taken in coordination with optimally viable procedural regulations need to be flexible and culturally adaptive in order to respond to the specific needs of each First Nation during public health emergencies, which adds to previous research on pandemic response for Indigenous communities (Lavoie et al., 2010a; 2010b; Lavoie, 2013; Charania & Tsuji, 2011; 2012). This is a fundamental priority for pandemic response in addressing the needs of First Nations during public health emergencies in Ontario, since effective action requires the coordination of efforts across federal, provincial, and local/regional levels of government while simultaneously acting in accordance with the requirements of the First Nations' prerogatives (Fleury & Chatwood, 2022; Richardson & Crawford, 2020; Charania & Tsuji, 2011; 2012). Discussions with participants in the current study illuminated key facilitators to effective pandemic mitigation which included: (1) community; (2) positive leadership; (3) community and Anishinaabe nursing; (4) vaccine uptake; (5) the Sioux Lookout First Nations Health Authority; (6) provincial territorial organizations as supporters for improved information sharing; and (7) social media as a surveillance measure.

Community

Community, family, and belonging were found to be strong facilitators of effective mitigation and planning efforts for the First Nations participating in this study. Kyoon-Achan and Write (2020), reported similar findings, reflecting that First Nations' prioritization of care ensured that food and essential items were distributed to high-risk persons such as elders and those with comorbid health conditions to minimize the risk of exposure to pathogens. This underscores the necessity for continual resourcing and support of autonomous response efforts and coordination with First Nations' leadership for the development of effective and coherent mitigation strategies that align with cultural and traditional values. In accordance with the 7 Grandfather's Teachings, prioritizing the care of vulnerable persons reflected love, humility, bravery, and wisdom.

Positive Leadership

In Ontario, there are no specific federal or provincial funding sources for First Nations during emergent crises such as pandemics, often resulting in the exclusion of Indigenous communities from their region's allotment, contrary to Canada's constitutionally asserted fiduciary responsibilities (Craft et al., 2020). In an effort to gain recognition by federal and provincial governments, leadership of one participant First Nation in the current study reported that it was necessary to declare a state of emergency for his community. The Chief further reflected that declaring a state of emergency was one way to ensure that his community could be sufficiently resourced and supported during the COVID-19 pandemic, noting that although unfortunate, it was sometimes necessary to take extreme measures to get the attention of federal and provincial partners. This was a measure employed by other First Nations in Canada as well, as was indicated by Kyoon-Achan and Write (2020).

Building internal capacity toward self-determination and self-governance are central aspects of First Nations re-empowerment and disestablishment from colonialism, which is foundational to the realization of autonomous prevention measures (Kyoon-Achan & Write, 2020). As an initial step toward addressing the effects of COVID-19, community members might educate and inform themselves on viral transmission, susceptibility, risk factors, and critical attributes for prevention (Kyoon-Achan & Write, 2020). Available resources and services must be continually assessed in order to determine existing gaps for redress and all deficiencies that may contribute to infection or outbreak must be illuminated (Kyoon-Achan & Write, 2020). Appropriate public health measures in coordination with effective clinical supports have been identified as contributors to effective intervention and prevention, particularly where community members could be educated about individual and collective susceptibilities to illness (Kyoon-Achan & Write, 2020). One participant from a rural First Nation attributed their low rates of COVID-19-related infections to the community's dedicated efforts to running emergent simulations. This was considered to be a facilitator to the confidence and capacity of community members during response efforts. Additional attributes of the First Nation's response were attributed to the widespread information and educational resourcing that was shared throughout the community. Kyoon-Achan and Write (2020) assert that with strong community leadership, effective avenues of knowledge distribution, prerogatives directed by First Nations that endeavour to integrate wider public health resources, and clear approaches to emergency measures guidelines, the successful prevention of COVID-19 outbreaks within remote and isolated communities is possible. It is important to note that the Chief of one participant First Nation in the current study further added that it was crucial in supporting the mental health and well-being of his community that resources, services, and supports offered

during the COVID-19 pandemic only be increased, rather than decreased or limited. Maintaining a sense of normalcy for community members becomes critical amid the uncertainty of a global pandemic.

Community and Anishinaabe Nursing

The continued resourcing of Indigenous nursing leadership must be a priority during COVID-19 as this provides community members with trusted and efficient avenues to care that are culturally responsive (Clark et al., 2021). Indigenous nursing was a vital facilitator of vaccine uptake in many First Nations, with community members often turning to their nurses for guidance on appropriate public health guidelines and interventive treatments. This finding was supported by Clark and colleagues (2021) who reported that fostering positive and trusting relationships with Indigenous nursing leadership has yielded significant returns for Indigenous communities thus far in the COVID-19 pandemic, and may be crucial for improvements in vaccine distribution, advocacy, and viral interventions. Although Clark and associates (2021) indicated that cross-cultural barriers remain a key challenge to mitigating the spread of infection, with many healthcare providers who are practicing within First Nations finding it difficult to develop trusting relationships if considered an 'outsider', this was not an issue for the First Nations participating in the current study, with informants instead reporting a sense of relief that community nursing staff were supported by locum nurses and physicians.

Vaccine Uptake

The Chiefs of Ontario's COVID-19 Initiatives task Force reported that their office worked proactively to attempt to destigmatize the vaccines for First Nations communities. It was hoped that this as an additional measure would increase vaccine uptake despite prior challenges

which emerged for Indigenous populations in Canada with the implementation of vaccination policies during the second wave of H1N1 in relation to determining priority groups, eligibility criteria, and workforce requirements (Boggild et al., 2011). The degree to which individuals were comfortable getting the vaccine varied across the province, with remote First Nations being targeted by Ontario, the Chiefs of Ontario, and the Sioux Lookout First Nations Health Authority for information sharing and coordinated efforts to increase vaccine uptake. Information sessions were held to support First Nations leadership in educating their community members, with the Sioux Lookout First Nations Health Authority and the Chiefs of Ontario taking a lead role in providing these sessions and facilitating dissemination for the support of First Nations vaccine uptake.

Sioux Lookout First Nations Health Authority

The Sioux Lookout First Nations Health Authority (SLFNHA) was a primary supporter of planning and response initiatives for remote First Nations located in the provincial territorial organization of Nishnawbe-Aski Nation, resourcing and guiding First Nations partners in developing individualized pandemic plans and response protocols. Infection control training was implemented that incorporated guidance on the proper use of PPE, sanitizing procedures, and methods for effectively cleansing and disinfecting households. SLFNHA further incorporated the use of an incident command system that would allow for information to be communicated and distributed through a universally understood language, allowing First Nations to effectively report their needs to public health and medical professionals.

Provincial Territorial Organizations to Support Information Sharing

During the COVID-19 pandemic, provincial territorial organizations operated as intermediaries, meeting with federal and provincial governments in order to communicate the

needs of their representative First Nations, which has not previously been reported in the literature. One participant indicated that PTOs become communication channels for the federal and provincial governments during acute crises since the governments are often unfamiliar with First Nations protocols. Further, information sharing may be improved between all stakeholders when provincial territorial organizations are able to bridge the connection between First Nations and governments. Arrangements were also made between one of the PTOs, the provincial government, and Ornge, an air ambulance company that services remote First Nations in Northwestern Ontario, to support vaccination roll outs in a program called Operation Remote Immunity, which was designed to improve vaccine uptake and access for remote First Nations.

Social Media as a Surveillance Measure

In alignment with previous reports by LeBlanc and associates (2019), and Lavoie and associates (2010b) that the existence of paper-based surveillance systems in many First Nations would result in difficulty tracking cases and vaccine uptake, many First Nations across Ontario instead used social media platforms such as Facebook, Instagram, and Twitter to track data for their communities. The use of social media to disseminate information to community members and monitor the case status for communities was not unique to the current study, with Smith and associates (2021), indicating that social media was the primary tool used for the dissemination of contact tracing, information sharing, and educational material distribution among First Nations.

Supporting First Nations in Building Paths Forward

Discussions with participants highlighted key aspects required to move forward effectively during prospective public health emergencies including: (1) preparedness and resourcing; (2) improved communications and coordination; and (3) self-determination.

Improved Preparedness and Resourcing

Pandemic plans that were in place prior to COVID-19 were reported to be geared too specifically to the response requirements for prior pandemic events, and as such were ineffective, suggesting that planning endeavours must necessarily be adaptable during times of acute crises. This finding was in alignment with previous literature indicating that supporting planning endeavours that were adaptable and culturally responsive has shown greater adherence and improved outcomes (Charania & Tsuji, 2011; 2012). Preparedness planning by governments may not sufficiently meet the needs of communities and as such, preparedness endeavours should consider planning that is tailored to the specific needs of each community, in partnership with community members. A refusal to partner with First Nations often leads to misinformation and feelings of overwhelm for individuals or groups tasked with developing preparedness plans and response protocols, which results in unnecessary barriers to effective response.

Improved Communications and Coordination

Cross-community supports were reported as critical facilitators to effective pandemic response, with First Nations supporting one another through pandemic planning and resourcing. During times of imminent need, neighbouring Frist Nations organized donation drives to help support the response during one remote First Nations outbreak, going to any lengths necessary to provide assistance. It was noted by participants that while there were excessive time delays in government resourcing and funding, immediate response efforts were better aided by neighbouring First Nations and community partners, calling federal response into question. Findings such as these provide an impetus for governments to recognize the need to provide specialized funding to First Nations during times of emergent crises and support autonomous mitigation efforts and resourcing.

Unnecessary delays in planning and response efforts arose as a result of a lack of coherence in communications and coordination between governments and First Nations leadership. A participant in the current study reflected that improving information sharing is at the root of improving response efforts and subsequent outcomes during prospective pandemic events. For two remote First Nations, the lack of clear protocol in guidance for pandemic plan development resulted in more confusion, speaking directly to the need to include community partners as leaders in prospective initiatives.

Self Determination

An emphasis on First Nations self-determination coupled with First Nations leadership and culturally responsive mitigation planning is required for improved outcomes to be observed during prospective pandemic events (Clark et al., 2021; Richardson & Crawford, 2020; Charania & Tsuji, 2011; 2012; Fleury & Chatwood, 2022; Kyoon_Achan & Write, 2020). This study adds to previous research centred upon COVID-19 in First Nations, illuminating the requirement for governments to honour First Nations' self-determination, while fostering Indigenous-led interventions and mitigation strategies for the improvement of health outcomes for these populations. In the current study, leadership stated that although governments claim to recognize each First Nation's right to self-determination, in practice and during times of acute crisis there is often a lack of authenticity in recognition of First Nation sovereignty. As outlined in the literature, core tenets of forthcoming pandemic preparedness planning should include '…capacity, expertise, and leadership…', indicating that First Nations and other Indigenous populations must be afforded their rights to self-determination and sovereignty in the establishment of effective pandemic reform (McMahon, 2020).

The completed literature review reflected an inclusive evaluation of the existent discourse pertinent to the relevant topics of interest. Reviewed literature consistently elucidated the effects of colonial disruption on the traditional and cultural values of Indigenous peoples living in Canada, the compounded impacts of the Indigenous social determinants of health, and pervasive barriers to the acquisition of healthcare services, supports, and supplies, all of which was supported by findings from the current study.

Strengths & Limitations

The prior establishment of meaningful relationships with leadership enabled engagement with First Nations partners for the purposes of this study. Interviews were completed with a diverse array of individuals which provided a wholistic conception of the experiences of the participant First Nations. Although differential analyses comparing mitigation efforts across regions were not possible, it was invaluable to have the opportunity to hear the varied experiences in relation to government and resourcing among rural and remote First Nations. This study further encompasses the understandings of 14 well-informed individuals, each of whom had direct experience managing various aspects of response during the COVID-19 pandemic.

Each First Nation that I approached to participate in this study was eager to support the project and collaborate, however challenges arose in connecting with participants and leadership. As a result of the busy schedules of First Nations leadership, there were time delays in initiating interviews. During the initial stages of this research project, many of the Chiefs who had agreed to participate were simultaneously travelling and dealing with other responsibilities, making it challenging to reach out to community members to initiate contact. Engaging in community-based research with rural and remote First Nations in Northwestern Ontario meant that I as a

researcher had to be mindful of the ongoing challenges each Nation faced. Leadership was continually dealing with unexpected events, crises, and states of emergency which meant that it was necessary for me to allow time for leadership and participants to address the more imminent needs of their communities. The time constraints imposed by the academic institution were not always in alignment with First Nations protocols, and it was thus challenging to balance the target goals of completing this Master's thesis project with the values and life circumstances of each participant.

Given the time limitations of completing a Master's thesis, it was only possible to include 2 rural and 2 remote First Nations from Northwestern Ontario in the study. It is well documented that differential funding and resourcing exists between Northwestern and Southern regions of Ontario, suggesting that pandemic resourcing for First Nations may also differ across regions. Further, the interview guides used for this project were too expansive and covered a lot of information that the key informants did not have access to. Although the general sentiment among participants was that successes were largely attributable to autonomous response efforts rather than government supports, it was not possible to clarify the specific roles that federal compared to provincial governments played in responding to the needs of participant First Nations.

Future Directions

Prospective research into the topic of interest might consider including band administrators to derive a more accurate representation of the specific amounts for resources and funding allotted to each First Nation during the COVID-19 pandemic. Several subthemes emerged in the data that did not achieve saturation and were therefore not categorized in the findings section of this manuscript. A few of these sub themes included First Nations learning

from retellings of historical precedence, and the supplemental use of traditional medicines to support community members, which could provide avenues for prospective research into understanding facilitators to effective mitigation. Two additional sub themes that emerged under the theme of federal government were inadequate funding and time delays. Participants provided general statements about difficulties accessing funding, and unnecessary time delays in the provision of supports and services as barriers to effective pandemic response, which could also inform future research or policy reform during public health emergencies. One rural First Nation involved in this study mentioned a 'Community Huddle' which was a strong facilitator to effective pandemic response for rural First Nations in Northwestern Ontario, providing the coordinated support of services and resources across sectors. This is another avenue for future research that may inform various stakeholders of measures for facilitating effective supports elsewhere.

Chapter 6: Conclusion

This study was developed principally to respond to observed gaps in previous literature looking at preparedness and response for First Nations and other Indigenous communities during global pandemic events (Charania & Tsuji, 2011; 2012). While previous literature explored rates of morbidity and mortality for Indigenous compared to non-Indigenous populations (Boggild et al., 2011; Robinson et al., 2012; Mostaco-Guidolin, 2013; Moghadas et al., 2011), it was important to understand the ways in which First Nations were being supported and resourced by each tier of government such that gaps in those processes might be clarified. Through the retelling of experiences by 14 Anishinaabe participants from 4 First Nations and 2 provincial territorial organizations, the perspectives of 2 rural and 2 remote First Nations in Northwestern Ontario were illuminated as a foundational prerogative for future planning endeavours, providing a framework for subsequent mitigation reform.

"First Nations First: a developed framework for rural and remote First Nations' pandemic response in Northwestern Ontario" highlighted 7 key dimensions that spoke to each First Nations' ability to effectively mitigate the COVID-19 virus within community. These dimensions provided a clear conception of the ways in which First Nations were both supported and underserved in primary domains of response, further clarifying core aspects necessarily requiring support and resourcing for effective autonomous response to be realized. The Underlying Dimensions of the framework included: (1) Culture, which reflected sources of strength and resilience as facilitators for First Nations communities in their response; (2) Context, which identified core barriers to pandemic response that included domains of residential schools and the social determinants of health. The Core Dimensions of the Experience included: (3) Preparedness; (4) Communications and Coordination; (5) Surveillance; (6) Response; and as

a culminating dimension oriented toward supporting a path forward (7) Reconstruction and Recovery.

Participant retellings as outlined in the "First Nations First" framework reflected key barriers to the ability to respond effectively, which were broadly categorized as: (1) federal and provincial governments, encompassing factors such as funding flow, inadequate funding, and time delays for funding and resources; and (2) the social determinants of health, which included lack of access to healthcare services, overcrowded housing, access to potable water, and lack of infrastructure. Key facilitators identified were: (1) community; (2) positive leadership; (3) community and Anishinaabe nursing; (4) vaccine uptake; (5) the Sioux Lookout First Nations Health Authority; (6) provincial territorial organizations to support information sharing; and (7) social media as a surveillance measure. Avenues for supporting First Nations in building paths forward also emerged and included: (1) improved preparedness and resourcing; (2) improved communications and coordination; and (3) self-determination.

The purpose of this study was to understand the experiences of 4 First Nations in Northwestern Ontario during the COVID-19 pandemic. Clarification is still required to fully understand the distinct roles that the federal and the provincial governments played in supporting First Nations. It was clear from participant experiences that although governments did provide some supports and resources to more rural First Nations, remote First Nations indicated more challenges related to funding and resourcing. It is important to note that First Nations leadership may have played a critical role in allocating necessary resources for the rural First Nations participating in the study, with one Chief reporting that through the declaration of a state of emergency it was possible to bring the needs of his First Nation to the forefront of the

government's attention. Overall, participants felt that the prioritization of autonomous response efforts and each First Nations right to self-determination were critical to effective mitigation.

Open lines of communication between federal governments and First Nations leadership would alleviate much of the uncertainty and overwhelm experienced during the COVID-19 pandemic by allowing for bi-directional information sharing. This form of communication in planning stages would allow governments to identify the unique needs of communities and would further provide insights into the areas being underserved for First Nations. Additional ideas put forth for prospective pandemic improvement included suggestions that government officials visit communities and take a more direct approach to meeting with First Nations in order to better understand how contextual factors impact the community's ability to respond to pandemic events. It is not possible to sufficiently support and resource First Nations without a first-hand conception of what that would require for each community. Further, where funding was made available to First Nations, it was not always sufficient for the duration of impact, suggesting that funding protocol should be more responsive and should be expedited during times of emergent crises if First Nations are to truly have a chance in effectively mitigating the spread and course of pandemic infection. The prioritization of autonomous response efforts and each First Nation's right to self-determination are foundational to effective mitigation, requiring that federal and provincial governments respect each First Nations' inherent rights to sovereignty during prospective public health emergencies.

Contributions to Health Sciences & Community

The implications of evaluating the effectiveness of tripartite preparedness and response for rural and remote First Nations in Northwestern Ontario during the COVID-19 pandemic are far-reaching for community partners as well as for the field of Health Sciences. This project assists rural and remote First Nations in ascertaining facilitators to effective pandemic response during the COVID-19 pandemic, while also illuminating barriers in resourcing, funding, and response for federal and provincial governments, provincial territorial organizations (PTOs), health authorities, and other community collaborators. Facilitators may ultimately be used to support planning for prospective pandemic events, while barriers may inform governments, PTOs, and other stakeholders of gaps requiring redress for effective pandemic mitigation for First Nations in rural and remote regions of Northwestern Ontario. Knowledge acquired from this study may provide the impetus for intergovernmental collaborations and partnerships aimed at improving the coordination of resources and response during times of imminent need and acute crises.

The use of a grounded theory approach for this research allowed for the formation of a culturally adaptive public health emergency framework; a novel framework developed in accordance to emergent themes derived from participant collaborations. This novel framework, 'First Nations First: a developed framework for rural and remote First Nations' pandemic response in Northwestern Ontario', (*Appendix H*), provides a comprehensive depiction of collaborator experiences and outlines necessary dimensions for prospective pandemic planning and response for rural and remote First Nations in Northwestern Ontario. The Rural and Remote First Nations Pandemic Response framework embodies 7 primary dimensions that are inclusive of culture and context and may provide a basis for organizing and understanding strengths, gaps,

facilitators, and barriers during prospective pandemic events. Continued learning directed toward supporting First Nations self-determination can also be furthered through the use of this study and framework, since organization into the identified dimensions provides clarity for First Nations leadership, healthcare providers, and policy makers alike.

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Appendix A: Literature Search Query

Search Query

"first nation*" or indigenous or native* or indian* or aborigin* (ALL TEXT)
AND
covid-19 or covid or "novel coronavirus" or "ncov-19" or sars or sars-cov-2 or "severe acute respiratory syndrome" or mers or "middle east* respiratory syndrome" or pandemic or epidemic or "swine flu" or h1n1 (ALL TEXT)
AND
Ontario OR Canada (ALL TEXT)

(limit to Ontario, limit to "First Nation*")
(limit to meta-analysis, review, systematic review, free full text articles)
(last 11 years) (2009 – 2020 CINAHL)
(English)
(limit to academic journals – CINAHL)

Inclusion criteria: first nations, Ontario, pandemic, h1n1, indigenous, COVID-19

Exclusion criteria: mental health, HIV/AIDS, non-communicable illness or disease, cancer, pharmacological guidelines, prescription practices

Databases

CINAHL:
(Q1)
Resulted in 102 articles:
After title review, 2 duplicate articles 41 remained for abstract review; after abstract review, 29 articles left for full text review.
(Q2)
(January 1, 2020 – December 31, 2022)
Resulted in 132 articles:
After title review, 15 remained for abstract review; after abstract review, 6 articles left for full text review.
(Q3)
(January 1, 2023 – September 1, 2023)
Resulted in 31 articles:
After title review, 1 remained for abstract review; after abstract review, 0 articles remained for full text review

Web of Science:
(Q1)
Resulted in 976 articles:

After title review, 7 duplicate articles, 11 remain for abstract review; after abstract review, 7 articles left for full text review.
(Q2)
(January 1, 2020 – December 31, 2022)
Resulted in 114 articles:
After title review, 2 duplicate articles, 10 remained for abstract review; after abstract review, 1 article was left for full text review.
(Search within results for: Ontario, First Nations)
(Q3)
(January 1, 2023 – September 1, 2023)
Resulted in 87 articles:
After title review, 2 articles remained for abstract review, after abstract review 1 article remained for full text review.

PubMed/Medline:
(Q1)
Resulted in 638 articles:
After title review 4 duplicate articles, 45 remained for abstract review; after abstract review, 14 articles left for full text review.
(limit to last 11 years)
(Q2)
PubMed
(January 1, 2020 – December 31, 2022)
Resulted in 9 articles:
After title review 1 duplicate article, 1 remained for abstract review; after abstract review 0 articles left for full text review.
(Q2)
Medline
(January 1, 2020 – December 31, 2022)
Resulted in 12 articles:
After title review 4 duplicate articles, 1 remained for abstract review; after abstract review 1 article left for full text review.
(Q3)
PubMed
(January 1, 2023 – September 1, 2023)
Resulted in 47 articles:
After title review 4 articles remained; after abstract review 1 duplicate, 2 remain for full text review.
(Q3)
Medline
(January 1, 2023 – September 1, 2023)
Resulted in 381 articles:
After title review, 0 articles remained for abstract review.

Appendix B: Recruitment Email

Good morning Chief (name),

My name is Crystal Hardy and I'm from Biinjitiwaabik Zaagiing Aanishinaabek in the Robinson-Superior treaty territory. I'm currently finishing my Master's thesis in Health Sciences with a specialization in Indigenous and Northern Health at Lakehead University. My Master's thesis is looking to understand what federal, provincial, regional, and independent response efforts to COVID-19 have been for your First Nation, as well as what pandemic preparedness plans and response efforts were in place for your community and how they've evolved throughout COVID-19. My project has been designed so that it will be completed entirely through phone and zoom interviews to ensure the safety of your First Nation if you agree to participate.

My intention with this research is to improve pandemic response, planning, and preparedness efforts by each tier of government in future. I also hope to support First Nations in Ontario in strengthening their own preparedness, planning, and response efforts moving forward. If you are able to briefly discuss this project to see if it's something (name of First Nation) would be interested in collaborating for, please email me back and I'll be happy to discuss my project further with you. My phone number and email are listed below.

Appendix C: Consent Form

Name of Participant _____
(please print)

- I have discussed the details of this research project and agree to participate in the research.
- I understand that the purpose of the research is to examine federal, provincial, and First Nations' response efforts during the COVID-19 pandemic.
- I understand that my participation in this study will involve minimal risk or harm to myself..
- I understand that my participation in this study is completely voluntary and that I may withdraw at any time for any reason without penalty.
- I understand that there is no obligation to answer any questions that I do not want to answer.
- I understand I may ask questions of the researcher at any point during the research process.
- I understand that all of my personal information will be kept strictly confidential and will be known only by the researchers.
- I understand that the results of this study may be distributed in academic journals, conference presentations, and other publications, and that a final report will be sent to participants, First Nations' leadership, and federal/provincial governments.
- I understand that I retain ownership over all of my personal information and that this information will be stored on a password protected computer at Lakehead University for 7 years after completion of this project.
- I agree to have this interview recorded (please circle one): Yes No
- I agree to have this interview video recorded over Zoom (please circle one): Yes No
- I wish for my personally identifiable information to remain confidential (please circle one): Yes No
- I agree to allow my name to be used in this research, and my answers can be attributed to me (please circle one) Yes No
- Would you like to receive a copy of the research results (please circle one): Yes No

If so, please leave your contact information: _____

I am fully aware of the nature and extent of my participation in this project as stated above.

_____ _____

Participant's Signature Date

If you have any questions or concerns about this study, please contact Crystal Hardy (807-355-4023, or cnhardy@lakeheadu.ca). If you have questions about your rights as a research participant in general, please contact Sue Wright at the Research Ethics Board at 807-343-8010 ext. 8232 or research@lakeheadu.ca.

Appendix D: Information Letter

Tripartite Preparedness and Response During the COVID-19 Pandemic: A First Nations' Perspective

Dear Potential Participant,
Thank you for expressing interest in this research project. Your time and assistance are greatly appreciated. This form provides a brief outline of what you can expect from the interview process, how information will be handled, and how findings will be published and distributed upon completion of the project. If any part of the information is unclear or you would like further elaboration, please feel free to reach out to me using the contact details that are listed at the end of this document.

Who am I and what is this research about?
My name is Crystal Hardy and I am from Biinjitiwaabik Zaagiing Aanishinabek located in the Robinson-Superior treaty territory. I am a Master of Health Sciences student specializing in Indigenous and Northern Health at Lakehead University in Thunder Bay, Ontario. This research is the final component for completion of my Master's degree. My coursework has been focussed primarily on Indigenous health inequities, and factors that may improve prospective health outcomes for First Nations peoples. In an effort to identify gaps in federal, provincial, and regional policy, I would like to understand what the experiences and perceptions of pandemic preparedness and response have been at ground level from the viewpoint of First Nations people. For the purposes of this objective, I have chosen to speak with individuals who understand which federal, provincial, or regional supports and services have been provided during the ongoing COVID-19 pandemic. I am also seeking to understand the ways that First Nations and community members have addressed issues arising from the pandemic without the assistance of government.
Information gained from this research will be used for my Master's thesis, however I believe that this work has broader impacts and hope that findings will be able to assist other First Nations in Ontario as well as all tiers of government in improving pandemic mitigation policy, measures, and protocols.

How will this research be conducted?
Participation in this study is completely voluntary and will be conducted through Zoom or telephone interviews with key informants from 4 First Nations in Ontario who have insight into preparedness and response efforts during the COVID-19 pandemic. Interviews will take approximately 60 minutes, with the option to break up meetings into shorter segments if desired. Interviews will be recorded so that materials can be transcribed. Informants will have the opportunity to elaborate as much or as little as they would like. Participation is completely voluntary, and individuals may refuse to answer any questions or withdraw from the study at any point up to completion of the research.

Are there any benefits or risks I should be aware of?
Participation in interviews will help advance understanding of the gaps and strengths in pandemic preparedness and response efforts so that federal, provincial, and First Nations leadership can be made aware of which areas require attention. Information derived from these interviews will be developed into reports to advocate for policy reform, outlining any concerns or barriers to pandemic mitigation that participants may identify. This study will address existent gaps which may currently lead to poorer health outcomes for First Nations peoples in the context of pandemic illness. There is limited exploration of this topic from the First Nations viewpoint and this research will prove valuable to the advocacy for policy improvement. There are very few risks associated with participation in this research, but it is possible that some individuals may become triggered or find the general topic sensitive, as a result of personal experiences, losses, or ongoing difficulties associated with COVID-19. All personal information and First Nation information will be deidentified and assigned an anonymous numeric code known only to myself and my advisor, unless individuals and communities wish to have their information published. Since Zoom is not always a secure platform, communications could be intercepted by a third-party, the vendor may have access to data, and data relating to usage and user's names are stored by the vendor outside of Canada. Steps will be taken to manage security risks by using a Lakehead University supported Zoom account that has additional security features imbedded. If you have any concerns or questions about this research that I have not answered sufficiently, please do not hesitate to contact myself, my advisor Dr. Rebecca Schiff, or Sue Wright at Lakehead University Research Ethics for further clarification. Contact information is listed at the end of this form.

How should I expect to be treated?
This study will maintain the highest standards of ethical conduct and integrity. By participating in this research informants should feel that information as well as their contribution to this research will be treated respectfully. Participation is entirely voluntary, and all information offered will be treated in good faith. You are welcome to refuse to participate, withdraw from the research during transcription up until the point of deidentification and refuse to answer any of the questions asked without negative consequence for yourself or your First Nation. Once the final write up of research findings and outcomes has been developed, withdrawal will not be possible. If you choose to withdraw from the study, the interview data will be used up to the point of withdrawal. All questions about the research, its aims, and outcomes will be answered openly and honestly. While I retain final editorial control over what is written for this study, you are free to withdraw information you have contributed at any stage by contacting the researchers and indicating your desire to do so. You will be provided with an opportunity to read any final reports and a summary of findings from this project if you are interested in outcomes associated with the study. This study has been approved by the Lakehead University Research Ethics Board. If you have any questions related to the ethics of the research and would like to speak to someone outside of the research team, please contact Sue Wright at the Research Ethics Board at 807-343-8283 or research@lakeheadu.ca.

What will be done with your information?
In all cases, nothing you say will be attributed to you individually unless explicitly agreed to in the consent process. Some characteristics (ex. occupation) may be described generally, but they will not be tied to you individually unless you have given your permission. If you wish for me to

keep your identity confidential, I will ensure that any identifying characteristics for yourself and your First Nation are removed in the thesis and any other related documents.

What will happen to the data after it is collected?
I will have access to the interview transcripts and other materials (including audio/video recordings, hand-written notes, and your consent form). I will be the primary investigator, however my supervisor, Dr. Rebecca Schiff may need access to the data as well. All raw data, audio/video recordings, and typing up of interviews will be encrypted and stored on my personal password protected computer for up to seven years and then destroyed. The final research results will be written in reports for First Nations, federal, and provincial leadership, articles, or at conferences relating to Indigenous health. A final report will be written, and a copy will be offered to you.

If you have further questions about this research or feel uncomfortable with any aspect, please contact us as soon as possible so that concerns can be address

Thank you again for your time and consideration.

Sincerely,
Crystal Hardy

Crystal Hardy
Department of Health Sciences
Lakehead University
t: 807-355-4023
e: cnhardy@lakeheadu.ca

Rebecca Schiff
Faculty of Human and Health Sciences
University of Northern British Columbia
t: 250-960-5319
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Sue Wright
Office of Research Services
Lakehead University
t: 807-343-8010 Ext. 8283
e: susan.wright@lakeheadu.ca

Appendix E: Verbal Consent Script

Good (morning/afternoon). Thanks for agreeing to participate in this interview looking at "Tripartite Preparedness and Response During the COVID-19 Pandemic: A First Nations' Perspective". Before we start the interview, I want to review the consent form that I sent to you to be sure that I have your informed consent for participation in this research project.

Okay, (name of participant), by providing me with your verbal consent today, you acknowledge that you have read and understood the information letter I sent to you about this project, and you agree to participate. You understand that the purpose of this research is to examine what the federal, provincial, and First Nations' response efforts during the COVID-19 pandemic have been. You understand that your participation in this study will involve minimal risk or harm to you. You understand that your participation in this study is completely voluntary and that you may withdraw at any time for any reason without penalty. You understand that there is no obligation to answer any questions that you do not wish to answer. You understand that you may ask me any questions at any point during the research process. You understand that all of your personal information will be kept strictly confidential and will be known only by the research team, so that's myself and my advisors. You understand that the results of this study may be distributed in academic journals, conference presentations, other publications, and that a final report will be distributed to participants, First Nations' leadership, and federal/provincial governments. You understand that you retain ownership over all of your personal information and that this information will be stored on a password protected computer at Lakehead University for 7 years after completion of this project.

The next section will require a yes or no answer from you:

- Do you agree to have this interview recorded? (yes or no)
- Do you agree to have this interview video recorded over Zoom? (yes or no)
- Do you wish for your personally identifiable information to remain confidential? (yes or no)
- Do you agree to allow your name to be used in this research, and for your answers to be attributed to you? (yes or no)
- Would you like to receive a copy of the research results? (yes or no)
- If so, what would the best way to contact you with a final report be? (note information)
- Make note of participant's verbal agreement

Appendix F: Key Informant Interview Guide

1. What has the response to the COVID-19 pandemic been for your First Nation?
    a. Federally
    b. Provincially
    c. Locally or regionally
    d. Independently by your First Nation
2. Were pandemic preparedness plans in place for your First Nation prior to COVID-19?
    a. Federally
    b. Provincially
    c. Locally or regionally
    d. Independently by your First Nation
        i. If yes, have these preparedness plans been effective during COVID-19
            - Why or why not
3. In which ways has your First Nation prepared for and responded to the COVID-19 pandemic:
    a. During the initial stages of the pandemic
    b. During times of pandemic outbreak
    c. After pandemic outbreak
4. Has the pandemic response been effective in your First Nation?
    a. Federally
    b. Provincially
    c. Locally or regionally
    d. Independently by your First Nation

i. Why or why not

5. Was your First Nation adequately provided with personal protective equipment and other supplies during COVID-19?
    a. Healthcare supports (nursing staff, physicians, medical supplies, personal protective equipment)
        ii. Which supports were provided
            - How many of each
            - Were the provided supports adequate for the duration of the pandemic
                - Why or why not
    b. Necessities such as food and water resources
        iii. Which necessities were provided
            - How many of each
            - Were the provided necessities adequate for the duration of the pandemic
                - Why or why not
    c. Medical interventions or opportunities for vaccine for all community members
        iv. Which ones
            - How many of each
        v. Were the provided medical interventions and opportunities for vaccine adequate for the duration of the pandemic
            - Why or why not

vi. How many individuals in your First Nation sought medical intervention and vaccine

§ What were the barriers or challenges associated with seeking medical intervention and/or vaccine

6. Were you provided with any communication regarding barriers to the provision of resources, services, and/or supports?
   - Federally
   - Provincially
   - Locally or regionally

ii. If so, were these measures provided in an effective and timely manner?

   - Federally
   - Provincially
   - Locally or regionally

7. In which ways did your First Nation manage the spread of infection or outbreak within the community?
   a. Did your First Nation receive supports for mitigation measures and response efforts?

i. Federally

ii. Provincially

iii. Locally or regionally

   - If not, how were these measures facilitated

- Where necessary, who helped to organize response efforts

8. How did your First Nation address the treatment and care of individuals who became infected with COVID-19?
    a. During mild cases of infection
    b. During acute cases of infection
9. Which specific supports did your First Nation provide?
    a. For the entire community
    b. For high-risk groups
        i. Elders
        ii. Individuals with comorbid health conditions and compromised health status
    c. For community members who contracted COVID-19
10. In which ways would you like to see pandemic preparedness and response improved in your First Nation?
    a. Federally
    b. Provincially
    c. Locally or regionally
    d. Within your First Nation
11. What are some of the strengths you have observed in preparing for and responding to COVID-19?
    a. Federally
    b. Provincially
    c. Locally or regionally

f. Within your First Nation

12. Is there anything else you would like to share?

Appendix G: Pandemic Lead Interview Guide

1. What do you think is important to discuss in relation to the COVID-19 pandemic for First Nations affiliated with your organization/territory?
2. What has the response to the COVID-19 pandemic been for your organization/territory?
    a. Federally
    b. Provincially
    c. Regionally
    d. Independently
3. Were pandemic preparedness plans in place for First Nations affiliated with your organization/territory prior to COVID-19?
    a. Federally
    b. Provincially
    c. Regionally
    d. Independently
        i. If yes, have these preparedness plans been effective during COVID-19
            - Why or why not
4. In which ways has your organization/territory prepared for and responded to the COVID-19 pandemic:
    a. During the initial stages of the pandemic
    b. During the latter stages of the pandemic
    c. During times of pandemic outbreak
    d. After times of pandemic outbreak
5. Has the pandemic response been effective for your organization/territory?

a. Federally
b. Provincially
c. Regionally
d. Independently
    - Why or why not

6. Was your organization/territory adequately provided with interventive supports, supplies, and resources during COVID-19?
    a. Healthcare supports (nursing staff, physicians, quarantine facilities, COVID-19 testing facilities)
    b. Which supports were provided
        - Federally
        - Provincially
        - Regionally
        - Independently
        i. How many of each (if known)
        ii. Were the provided supports adequate for the duration of the pandemic
            - Why or why not
        iii. How much funding was allocated to supports
            - Federally
            - Provincially
            - Regionally
            - Independently

iv. Was the allotted funding adequate for the duration of COVID-19
    - If not, what were the areas of discrepant funding

b. Healthcare supplies (medical provisions, personal protective equipment, masks, gowns, COVID-19 tests)

v. Which supplies were provided
    - Federally
    - Provincially
    - Regionally
    - Independently

vi. How many of each (if known)

vii. Were the provided supplies adequate for the duration of the pandemic
    - Why or why not

i. How much funding was allocated to supplies
    - Federally
    - Provincially
    - Regionally
    - Independently

ii. Was the allotted funding adequate for the duration of COVID-19
    - If not, what were the areas of discrepant funding

c. Necessities such as food, water, and other resources

iii. Which resources were provided
    - Federally

- Provincially
- Regionally
- Independently

iv. How many of each (if known)

v. Were the provided resources adequate for the duration of the pandemic?

- Why or why not

i. How much funding was allocated to resources?

- Federally
- Provincially
- Regionally
- Independently

ii. Was the allotted funding adequate for the duration of COVID-19

- If not, what were the areas of discrepant funding

d. Medical interventions or opportunities for vaccines for communities affiliated with your organization/territory

iii. Which medical interventions/opportunities for vaccines

iv. How many of each

v. Were the provided medical interventions and opportunities for vaccine adequate for the duration of the pandemic

vi. How many First Nations and individuals sought medical interventions and/or vaccines

vii. What were the barriers or challenges associated with seeking/accessing medical interventions and/or vaccines

viii. Were medical interventions and opportunities for vaccines provided for the First Nations affiliated with your organization/territory in an effective and timely manner

- If yes, which interventions were
- If no, which interventions were not

7. Were you provided with any communication regarding barriers to the provision of resources, services, and/or supports?
   - Federally
   - Provincially
   - Regionally
   - By First Nations in your organization/territory
8. In which ways did your organization/territory manage the spread of infection or outbreak for First Nations affiliated with your organization/territory?
   i. Did your organization/territory receive supports and/or resources for mitigation measures and response efforts for First Nations in your organization/territory?
      - Federally
      - Provincially
      - Regionally
        - If not, how were these measures facilitated
        - Where necessary, who helped to organize response efforts

9. How did your organization/territory support the treatment and care of individuals and/or First Nations who became infected with COVID-19?
    a. During mild cases of infection
    b. During acute cases of infection
    c. During periods of pandemic outbreak
10. Which specific supports did your organization/territory provide for First Nations affiliated with your organization/territory?
    a. In general
    b. For high-risk groups
        - Elders
        - Individuals with comorbid health conditions and compromised health status
    c. For First Nations dealing with COVID-19 cases and outbreaks
11. In which ways would you like to see pandemic preparedness and response improved in your organization/territory?
    a. Federally
    b. Provincially
    c. Regionally
    d. Within your organization/territory
12. What are some of the strengths you have observed in preparing for and responding to COVID-19?
    a. Federally
    b. Provincially

c. Regionally

d. Within your organization/territory

13. Is there anything else you would like to share?