EXPERIENCES MANAGING COVID-19 AMONG MFWs

THE EXPERIENCES OF HEALTH CARE WORKERS IN MANAGING AND

PREVENTING COVID-19 AMONG MFWs IN NIAGARA REGION, ONTARIO

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A Thesis Submitted to the School of Graduate Studies in Partial Fulfilment of the Requirements

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TITLE:The Experiences of Health Care Workers in Managing andPreventing COVID-19

Among MFWs in Niagara Region, Ontario

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**Lay Abstract**

 COVID-19 is a recently discovered virus that is considered a serious health threat both in

Canada and globally. High rates of COVID-19 have been reported among the migrant farm

worker population in Niagara Region. These workers face unique home and work challenges

while in Canada that increase their risk of getting COVID-19. This study aims to explore the

experiences of health care workers in Niagara Region who deliver and organize COVID-19

related health care for migrant farm workers. To achieve this objective, seven interviews were

conducted among local health care workers from different work settings to obtain an in-depth

description of their work roles as well as the various methods in which COVID-19 was identified

and managed among the migrant farm worker population. These findings explain the

individualized methods of COVID-19 health care provision developed by health care workers to

accommodate the unique living and working circumstances of MFWs.

**Abstract**

 **Background:** A significant proportion of Canada’s agricultural industry is employed by

migrant farm workers. The Niagara Region of Ontario, Canada hosts some of the largest farming

operations in the province and employs a large migrant workforce. The various challenges faced

by these workers in Canada have long been recognized including barriers to healthcare

accessibility. The COVID-19 pandemic threatened the health of many migrant farm workers in

Ontario as the proximity in which workers live and work with one another lead to elevated

infection transmission rates. At the time of study commencement, very little contemporary

research had been conducted exploring health care for migrant farm workers amid the pandemic.

The primary aim of this thesis is to accurately describe how COVID-19 has been managed

among migrant workers in Niagara Region from the perspective of health care workers with an

active role in health care provision and infection prevention. **Methodology:** A qualitative

description study design with a naturalistic approach was used to capture a straightforward

description of this novel phenomena. Seven health care workers employed at several different

health organizations in Niagara Region were interviewed for this study using an open-ended

interview guide. **Results:** Using qualitative content analysis, three themes and six categories

were identified. The theme *adapting to role changes* identified the work role modifications

experienced by participants in response to the COVID-19 pandemic. The ongoing

implementation of and adjustment to regulations for COVID-19 prevention are discussed under

the theme *navigating regulation changes.* The theme *responsibility of healthcare services*

encompasses participant perspectives of how MFW and provider experiences are impacted by

the nature of healthcare responsibility. Results from this study may inform recommendations for

infectious disease programs geared toward migrant farm workers and help to identify areas for

improvement regarding infection prevention practises in the workplace and living quarters.

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**List of Abbreviations**

APF – Assigned Protection Factor

CCAT – Covid Community Assessment Team

CHC – Community Health Centre

CHW – Community Health Worker

COVID-19 – Coronavirus Disease of 2019

ED – Executive Director

HCW – Health Care Worker

MFW – Migrant Farm Worker

Niagara EMS – Niagara Emergency Medical Services

NP – Nurse Practitioner

NRPH – Niagara Region Public Health

PAPR – Powered Air Purifying Respirator

PPE – Personal Protective Equipment

SAWHP – Seasonal Agricultural Worker Health Program

**Declaration of Academic Achievement**

 The following is a declaration that the content of the research in this document has been

completed by Talya McCallum.

**1. Introduction**

**1.1. Employment of Migrant Farm Workers in Ontario and Canada**

In 2015, the Canadian agriculture and agri-food manufacturing sector contributed nearly

$50 billion to the country’s gross domestic product (Statistics Canada, 2019a). Ontario is the

largest contributing province with over $15 billion in agricultural production. The Temporary

Foreign Workers Program (TFWP) was established in Canada to address a job demand in the

agricultural sector unmet by domestic workers (The Conference Board of Canada, 2016). Over

several decades, this need for agricultural workers has continued to increase. In 2019, more than

70,000 migrant farm workers (MFWs) arrived in Canada for employment in the agricultural

sector of the TFWP (Government of Canada, 2020a). Almost 29,000 or 40% of the MFWs

employed in Canada were allocated to farms and greenhouses in the province of Ontario.

The TFWP is subdivided into four hiring streams for MFWs. They are the Seasonal

Agricultural Worker Program (SAWP), the agricultural stream, the stream for high wage

positions and the stream for low-wage positions (Government of Canada, 2020b). Most MFWs

are contracted through the agricultural stream and the SAWP. Key differences between these

two streams are the acceptance criteria which is based on applicants’ country of origin, and the

permitted length of employment in Canada. The agricultural stream does not place any

restrictions based on country of origin whereas the SAWP is only open to citizens of Mexico

and select Caribbean countries (Government of Canada, 2020c; Government of Canada, 2020d).

The top five source countries for MFWs in Canada are Mexico, Jamaica, Guatemala, Philippines

and Thailand (Statistics Canada, 2019b). MFWs are legally permitted to work in Canada for an 8

or 24-month period depending on which stream of the TFWP is used to obtain a work permit.

After returning to their home country workers are eligible to reapply for the TFWP. It is common

for MFWs to return to Canada annually for subsequent employment contracts (Preibisch &

Otero, 2014). A majority of the recruited MFWs are men with spouses and/or children who

continue to reside in their home country (Wells et al., 2014). MFWs often send remittances back

to their families as this is their sole source of income. Many MFWs are Spanish-speaking and/or

possess limited English communication and literacy skills (Preibisch & Otero, 2014; De Luna

Villalón, 2011). Employers of MFWs are required to provide housing accommodations that are

adequate, suitable and affordable as defined by Canada Mortgage and Housing Corporation

(Government of Canada, 2020e; Government of Canada, 2020f). An employer-provided

accommodation for groups of MFWs in Canada is colloquially known as a ‘bunkhouse’ (Perry,

2018). Bunkhouses consist of communal rooms for MFWs to sleep, cook and bathe in. An

authorized housing inspection must be completed prior to moving MFWs into a property.

**1.2. Entry Requirements and Health Insurance for MFWs**

Depending on their country of origin, some MFWs are required to complete an

Immigration Medical Exam (IME) prior to entering Canada (Government of Canada, 2020g).

This exam includes a medical questionnaire, chest x-ray and physical examination performed

by a panel physician. The results of the IME may warrant further laboratory or specialized

testing. MFWs who are employed in Ontario with a valid work permit are eligible for the Ontario

Health Insurance Plan (OHIP) (Ontario Ministry of Health and Long-Term Care, 2012).

Depending on which stream of the TFWP a MFW is employed through, OHIP may be accessed

immediately upon arrival into Ontario or after a waiting period during which the employer is

responsible for providing health insurance (Government of Canada, 2020h).

**1.3. COVID-19 Overview**

The novel coronavirus disease of 2019 (COVID-19) was first identified in the city of

Wuhan, China in December 2019 (World Health Organization [WHO], 2020a). As of mid

February 2021, nearly 110 million cases of COVID-19 were reported worldwide with over

2.4 million attributable deaths (WHO, 2021). COVID-19 is considered a serious health threat to

Canadians (Government of Canada, 2021a). The disease spreads via respiratory droplets or

through close contact with an infected individual (Government of Canada, 2020j). The

incubation period for COVID-19 can take up to fourteen days but averages at five to six days.

The most common symptoms are fever, dry cough and tiredness. Less common symptoms can

include headache, aches and pains and loss of taste or smell. In severe cases, an infected

individual can have difficulty breathing, shortness of breath and chest pain. It is also possible for

an individual to have COVID-19 and be asymptomatic. Every individual is susceptible to getting

COVID-19 however the elderly and those with a weakened immune system or underlying

medical conditions are at increased risk for severe illness (WHO, 2020b; Centers for Disease

Control and Prevention, 2020). In severe cases the COVID-19 infection can lead to organ failure

and death. Information available on this novel virus continues to evolve as more evidence arises.

At the time of study commencement, the total number of COVID-19 cases in Canada

surpassed 1,430,000 (Government of Canada, 2021a). This equated to a rate of nearly 3,765

confirmed cases per 100,000 people. Canada ranked 25th worldwide for the total number of

reported COVID-19 cases (WHO, 2021; Worldometer, 2021). Differences in COVID-19 testing

and reporting practices among countries and regions worldwide can lead to undetected and

underreported case counts (Lau et al., 2020). Mortality numbers are recommended to better

determine COVID-19 prevalence. In 2021, nearly 27,000 deaths were attributed to COVID-19 in

Canada, ranking the country 26thglobally (Government of Canada, 2021; Worldometer 2021).

**1.4. COVID-19 Incidence and Trends in Ontario and Niagara Region**

At the time of data collection, Ontario had the highest total case count of COVID-19

among all Canadian provinces and territories (Government of Ontario, 2021a). The total number

of cases in the province surpassed 550,100, representing over 38% of the total cases nationwide.

Nearly 9,500 deaths were reported in Ontario. The first case of COVID-19 in Niagara Region

was reported on March 13th, 2020 (Niagara Region, 2021a). The total number of cases regionally

surpassed 16,000 with 418 resulting deaths. In 2020 there were over 1,780 MFWs in Ontario

that tested positive for COVID-19, with three resulting deaths (Government of Ontario, 2021b;

Taekema, 2021).

There is an increased COVID-19 transmission rate and potential for workplace outbreaks

among MFWs in the Niagara Region. A spike of 23 new daily COVID-19 cases was recorded in

June 2020, twenty of which were connected to a COVID-19 outbreak among MFWs at the

greenhouse operation Pioneer Flower Farms (Niagara Region, 2021a; Niagara Region Public

Health, 2020a). This represented the highest daily case count recorded in the region since April.

Several days later, a new daily high case count of 40 was recorded in Niagara Region (Niagara

Region, 2021b, YourTV Niagara, 2020). Of those 40 cases, 39 were MFWs employed at Pioneer

and the last was a close contact of the workers. In November 2020 a daily case count of 63 was

reported in Niagara Region, with 45 of those cases linked to an outbreak at the greenhouse

operation One Floral Group (Lawson, 2020; Niagara Region Public Health, 2020b). Those

infected included MFWs as well as domestic workers (LaFleche, 2020). One Floral Group

temporarily shut down due to the outbreak as so many workers were either infected with

COVID-19 or isolated after coming into contact with someone who tested positive.

**1.5. Diagnosis and Management of COVID-19**

To clinically diagnose COVID-19 in Ontario, a health care professional collects a single

upper respiratory tract specimen from the nares via nasopharyngeal swab (Public Health Ontario,

2021a). Individuals must remain in isolation while awaiting test results. Results can take up to

four days and all positive results are reported to the local public health unit (Government of

Ontario, 2021a). All individuals testing positive are then contacted by a public health worker to

discuss presenting symptoms and the mandatory isolation period and to conduct contact tracing

(Public Health Ontario, 2021b). Contact tracing requires the individual to report people and

places they have recently been in contact with. This information helps to identify other potential

COVID-19 cases and ultimately reduce the spread of the virus within the community. Each

public health unit in Ontario is responsible for contacting individuals with recent exposure to the

virus to determine whether self-isolation or testing is necessary. An isolation period of at least

fourteen days is mandatory for all individuals testing positive for COVID-19.

 There is no authorized medication for cure of COVID-19 however there are several

treatment options available (Government of Canada, 2020k; WHO, 2020c). Individuals with

mild cases of COVID-19 typically recover on their own and are encouraged to get plenty of

fluids and rest at home (Government of Ontario, 2021a). Those with more severe cases who are

admitted to hospital may require supplemental oxygen and/or mechanical ventilation for disease

management. In Canada, hospitalized individuals experiencing severe symptoms may be treated

with dexamethasone or remdesivir (Government of Canada, 2020k) to reduce the risk of more

adverse clinical outcomes.

**1.6. Strategies to End the COVID-19 Pandemic**

Various methods to prevent transmission of COVID-19 in Canada have been enacted

including travel restrictions and physical distancing measures. The methods discussed in this

section were in effect in October and November of 2021 at the time of data collection for the

present study. Canadian residents were encouraged to practice physical distancing and minimize

close physical contact by avoiding crowded areas and maintaining a distance of at least two

metres from each other (Government of Canada, 2020j; Public Health Ontario, 2020). People

were required to wear non-medical masks or face coverings when in public indoor settings, and

asked to work from home when possible. To help prevent the spread of COVID-19, some were

asked to isolate or quarantine (self-isolate) (Government of Canada, 2020j). The indications for

each are outlined in Table 1 below.

|  |
| --- |
| Table 1: Indications for Isolation versus Quarantine |
| Isolate if:  | Quarantine if:  |
| * You receive a COVID-19 diagnosis
* You are awaiting the results of a COVID-19 test
* You have symptoms of COVID-19
* You’ve been told by Public Health that you may have been exposed to COVID-19 and need to isolate
* You’ve returned from travel outside Canada and have symptoms of COVID-19
 | * You’re returning from travel outside of Canada and have no symptoms
* You’ve been told by Public Health that you may have been exposed to COVID-19 and need to quarantine
 |

*Table 1: Indications for Isolation versus Quarantine.* Data from Government of Canada (2020j).

To isolate or quarantine, people were required to stay home for a minimum of fourteen days and

monitor for symptoms. They were also required to avoid contact with others and practice

physical distancing within their home. Any individual who developed symptoms was urged to

immediately isolate from others and contact their local public health authority. The following

section pertains to the entry restrictions into Canada that were in effect during the planning and

data collection stages of this study. Residents of Canada were urged to avoid all non-essential

travel and foreign nationals were prohibited from entering Canada (Government of Canada,

2020l). However, temporary foreign workers including MFWs were exempt from this travel ban.

They were subject to mandatory health checks prior to boarding an aircraft and an assessment

upon entry to Canada (Government of Canada, 2020m). Symptomatic MFWs were not permitted

to board the aircraft. Upon arrival to Canada, all MFWs were required to complete a fourteen-

day quarantine. They had to travel directly to a predetermined quarantine location while

practising social distancing measures, and were prohibited from working during the quarantine

period (Government of Canada, 2020j, 2020n, 2020o).

Health Canada tracked global efforts to develop prevention and treatment measures

for COVID-19 (Government of Canada, 2020p). The WHO (2020d) launched the Solidarity

Trial, an international clinical trial aimed at finding an effective treatment for COVID-19.

Treatment options are selected based on evidence from laboratory, animal and clinical studies as

well as emerging evidence. In March 2020, The Government of Canada (2020q) committed $275

million towards research in developing, testing and implementing measures to address the

COVID-19 outbreak. To date, Health Canada has authorized the following vaccines for use in

Canada: Moderna COVID-19 vaccine, Pfizer-BioNTech COVID-19 vaccine,

AstraZeneca/COVISHIELD COVID-19 vaccine, and Janssen (Johnson & Johnson) COVID-19

vaccine (Government of Canada, 2021b). These vaccines have undergone rigorous evaluation by

Health Canada and are proven effective and safe in the prevention of COVID-19.

**1.7. Promoting MFW Wellness Amid COVID-19**

The Government of Canada (2020m) acknowledged the responsibility of agricultural

employers in preventing the introduction and spread of COVID-19 among MFWs. Employers

were required to assist arriving MFWs with their mandatory quarantine periods by arranging the

delivery of some supplies. Nutritious food and water with appropriate storage containers were to

be provided to MFWs, as well as ongoing access to a communication device. Quarantined

workers could be housed together where space allowed for physical distancing of two metres at

all times (Government of Canada, 2020m, Niagara Region, 2020a.). If current housing was too

small for workers to practice physical distancing, the employer had to provide alternative

accommodations. MFWs were to be given items necessary to practice good hygiene such as

soap, water and alcohol-based sanitizer while at work and within their living quarters. Employers

had to ensure that the health of quarantined MFWs was monitored daily. If a MFW developed

symptoms of COVID-19, they were to immediately be isolated from all others in a private

accommodation and the local health unit was to be notified.

Employers were urged to implement COVID-19 screening measures for MFWs

throughout living quarters and the workplace (Ontario Ministry of Health, 2020). Methods of

passive screening such as signage outlining COVID-19 symptoms, proper hygiene and physical

distancing should be utilized. The use of worksite screeners to conduct COVID-19 symptom

assessments such as temperature checks were recommended as an active screening measure.

**1.8. Problem Statement**

The MFW population are a vital workforce for Canada’s agricultural industry to whom

specialized health regulations and requirements were applied throughout the current pandemic.

While the provision of health care services for MFWs became more complex, the health care

system was already overburdened by the unprecedented impact of COVID-19. Little was known

about the situation of MFWs working in Canada amid the COVID-19 pandemic and how it was

managed by health care workers (HCWs). Insight to the measures used to prevent COVID-19

infections among MFWs or the methods for diagnosing, monitoring and treating those with an

active infection is also limited. Understanding the efforts for managing MFW health and

preventing the spread of COVID-19 among MFWs and to local communities may help to inform

future similar situations.

**2. Literature Review**

**2.1. Search Strategy and Abstract**

The purpose of this literature review was to seek research that would help in acquiring a

greater understanding of health care provision for the MFWs. A search of electronic databases

for relevant literature was conducted using CINAHL, PubMed and MEDLINE via Ovid. The

search terms applied were *migrant farm worker* or *migrant worker* or *migrant agricultural*

*worker* and *nurse* or *health* or *health care* or *health care worker* or *health care professional*. This

search strategy yielded thousands of articles and so to narrow results, the search terms *Canada* or

*Ontario* were applied. No date limitations were applied to search entries as the topic of health

care provision for MFWs in Ontario and/or Canada is relatively understudied. This search

strategy generated 352 results: 14 articles from CINAHL, 336 from PubMed and 2 from

MEDLINE via OVID. To identify relevant literature for this study the researcher conducted a

review of titles among the results followed by a review of abstracts. Articles that focused on the

following topics of migrant sex workers, migrant HCWs, migrant live-in caregivers,

undocumented migrant workers, migrants of a non-working nature, refugees, MFW reproductive

and sexual health, MFWs with chronic and/or noninfectious illness, and MFW families were not

relevant and discarded. Several exceptions were made for studies on migrant workers that were

conducted specifically in Ontario. This search strategy further narrowed the results to thirty-eight

from which fourteen peer reviewed publications were selected for discussion in the literature

review section of this protocol. These fourteen publications were selected after conducting a

thorough article review. The twenty-four remaining articles had relevance but were discarded

because they did not support the current study objectives or were written strictly from a review

perspective. All fourteen publications were published in Canada, with most in the province of

Ontario specifically. Ten of the fourteen publications were peer reviewed. The fourteen

publications are further classified into two quantitative pieces (one retrospective descriptive, one

survey) and four qualitative pieces (one modified grounded theory, two multimethodological,

one unclassified). The remaining publications were one analysis article, one chapter contribution,

one commentary piece, one policy paper based on ethnographic research, one scoping review,

one article on the workplace health and safety of MFWs, one report on MFWs and COVID-19,

and one submission to the Changing Workplaces review. Only one of the fourteen articles

discussed MFWs and COVID-19 as the virus was quite novel at the time that this literature

review was conducted. In the following section the reviewed literature is synthesized to inform

on the health care situation of MFWs, mostly prior to the COVID-19 pandemic.

In addition to publications, the researcher also viewed news content pertaining to the

COVID-19 situation among MFWs in Ontario as well as official government sources for current

information. The rules and regulations pertaining to COVID-19 and MFWs that are discussed in

this literature review were in effect when participant recruitment and data collection commenced

for this study in August of 2021. As the COVID-19 pandemic evolved, many of these rules and

regulations were adjusted or discontinued all together.

**2.2. Employment Challenges for MFWs**

The job requirements of MFWs have been described as labour-intensive and precarious in

nature, with increased risks of workplace injury or illness (McLaughlin & Hennebry, 2013;

Orkin et al., 2014). In addition, many MFWs are reluctant to report any illness or injury, or to

seek treatment for fear of medical repatriation and resultant income loss (Orkin et al., 2014;

Hennebry et al., 2016). Medical repatriation is the incidence of an injury or illness followed by

simultaneous job termination and deportation back to the country of origin, solely at the

employer’s discretion. The practice of medical repatriation increases employer control and

renders MFWs uniquely vulnerable (Hennebry & Williams, 2015; Hennebry et al., 2015). Most

MFWs lack independent transportation for medical appointments and so they often rely on their

employer for transport to appointments (Cole et al., 2019). This employer involvement in health

care access compromises the health confidentiality and privacy of MFWs. Although MFWs are

entitled to regular pay and benefits during an isolation or quarantine period (Government of

Canada, 2020m), a report released by the Migrant Workers Alliance for Change (2020) regarding

the COVID-19 situation found that MFWs are fearful of contracting the virus as it could prevent

them from earning an income and sending remittances to their families. This fear stems from a

long history of unjust income deductions and unpaid wages, often in the form of ‘withholding

agreements’ which MFWs were forced to sign.

**2.3. Preventing COVID-19 Transmission**

 Although employers are required to provide accommodation for MFWs, it has been

reported that the employer-provided bunkhouses for MFWs in Ontario and throughout Canada

are often overcrowded and poorly ventilated (Cole et al., 2019; Preibisch & Hennebry, 2011;

McLaughlin, 2009). Some MFWs are unable to perform adequate sanitation practises both in

living quarters and at the workplace due to insufficient bathroom and hand washing facilities

(Salami, Menharali & Samali, 2015). These inadequate conditions are attributed to poorly

enforced and unclear housing guidelines. These conditions are also in violation of measures for

COVID-19 transmission prevention as outlined by the Government of Canada (2020n) and other

Health agencies and organizations (Public Health Ontario, 2020; WHO, 2020e). A scoping

review conducted using studies almost exclusively from Ontario (Salami, Meharali & Salami,

2015) identified inadequate distribution of personal protective equipment including masks for

MFWs as a predominant occupational health hazard with negative impact to workers. The

intended purpose of personal protective equipment for MFWs at that time was to prevent

overexposure to the toxic pesticides used in agricultural work. From a COVID-19 prevention and

transmission standpoint, it is concerning that mask supplies for MFWs were insufficient even

prior to the current pandemic. No current scholarly evidence was located assessing the

availability of masks or other personal protective equipment for MFWs amid the COVID-19

pandemic. A news release from The Government of Ontario (2021c) reported that inspections

would be expanded province-wide to agricultural operations that employ MFWs including farms

and greenhouses. These inspections aimed to ensure that employers adhere to health and safety

laws and requirements for the prevention of COVID-19 transmission among MFWs. Inspections

are conducted by health and safety inspectors for the Ministry of Labour, Training and Skills

Development. In 2020, 718 inspections were conducted at agricultural operations across Ontario

and 383 orders were issued. An order is issued when a violation is identified during an inspection

and it must be addressed by the employer otherwise charges may be laid (Government of

Ontario, 2021c).

**2.4. Healthcare Accessibility and Provision**

Prior to the current COVID-19 pandemic, reports indicate that MFWs experienced

severely limited access to health care services in comparison to Canadian residents (Goldring et

al., 2009; Preibisch & Otero, 2014). This limited accessibility to services was attributed to

barriers such as precarious employment status, extended work hours, limited hours of health

clinic operation, a lack of transportation services and inadequate interpretative resources (Cole et

al., 2019; Hanley et al., 2014; Narushima & Sanchez, 2014; Preibisch & Otero, 2014). A study

exploring the perspectives of health care professionals (HCPs) including nurses who provide care

to MFWs in southern Ontario (Cole et al., 2019), found commonly perceived cultural and

structural challenges were identified by HCPs. They expressed difficulty meeting MFW

expectations for health care and treatment due to differences in how they interpret illness. Many

HCPs found it challenging to manage health care due to a personal lack of knowledge regarding

the unique working and living conditions and contractual situations of MFWs. Difficulty

arranging and scheduling primary and secondary health care services for MFWs was also

reported. In addition to language barriers, HCPs found that the limited educational background

of MFWs negatively impacted MFW comprehension of the information being provided. It is

evident that the barriers and challenges limiting health care for this unique patient group are

experienced not only by MFWs themselves, but also by the HCWs responsible for managing

their care. No scholarly literature was found to describe HCWs experiences managing COVID-

19 among MFWs during the COVID-19 pandemic. Findings from this study will begin to

address this gap in the literature and may inform MFW program planners and decision makers

managing MFW health. These findings could provide insight to the health status of MFWs and

the barriers and challenges they may encounter when accessing COVID-19 related healthcare.

**2.5. Study Purpose and Research Question**

The purpose of this study is to describe and explore the experiences of Niagara Region

HCWs in managing and preventing COVID-19 among MFWs and within agricultural

workplaces. The term *HCW* in this study encompasses any individual involved in the provision

of COVID-19 related health care to MFWs. This inquiry explores the processes of organizing

and implementing COVID-19 health care services including screening and prevention measures

for MFWs. The procedures in place for COVID-19 diagnosis and treatment among this patient

population are described. The primary research question is:

*How do HCWs in Niagara Region describe their experiences managing*

*and preventing COVID-19 among MFWs and within agricultural workplaces?*

 The overall aim of this study is to accurately describe how COVID-19 has been managed

among MFWs from the perspective of those with an active role in health care provision and

infection prevention. This study is timely as data was collected in October and November of

2021 during the second year of the COVID-19 pandemic, when MFWs arrived again in large

numbers to work at local greenhouses. Niagara Region HCWs involved in COVID-19

management and prevention are key informants in the phenomenon of COVID-19 among

MFWs. This study describes HCW perspectives, roles and responsibilities in the context of

health care for MFWs and the COVID-19 situation. Results from this study may inform

recommendations for decision makers, program planners and service providers involved in

infectious disease programs or health care provision for MFWs. Study findings may also help

employers and managers of MFWs to identify areas for improvement regarding current and

future infection prevention practises in the MFW workplace and living quarters. Future research

on MFWs may also be informed by study results.

**3. Methods**

**3.1. Research Design**

A qualitative description (QD) study design is used to capture the phenomenon of

COVID-19 prevention and management among MFWs from the perspectives of HCWs. As

stated by Sandelowski (2000), QD is the methodology of choice when a straightforward

description of a phenomena is desired, and when the *who, what* and *where* of the situation are not

clearly defined. With respect to *who*, it is established that HCWs are responsible for organizing

and implementing COVID-19 related health services for MFWs. However, their degree of

involvement and responsibility for these situations as well as specific work tasks remain unclear.

Addressing *who* also identifies other health care specialties in addition to nurses, inspectors and

managers that provide COVID-19 related care for MFWs. The frequency and nature of

communication and interaction between HCWs and MFWs are explored and described *(what).*

*Where* refers to the actual location that MFWs receive diagnostic and treatment services or

complete mandatory isolation and quarantine periods.

**3.2. Philosophical and Ontological Approach**

 As is characteristic of QD research, this study used a naturalistic approach to the

phenomena (Sandelowski, 2000; Bradshaw et al., 2017). A naturalistic approach to research

does not require pre-existing variables or the manipulation of any variables. This approach

assumes that there are multiple views of reality influenced by a given societal or cultural context,

meaning multiple answers to the research question are plausible depending on participant

experiences (Bradshaw et al., 2017). Application of the naturalistic approach enabled the

researcher to describe the situation as it pertained to Niagara Region and may inform practices

with MFWs in other areas. Rather than developing generalizations, the researcher strived to

capture the individual experiences of HCWs by procuring rich descriptions of their involvement

managing and preventing COVID-19 among the MFW population. This approach also allowed

the researcher to consider the experiences of HCWs individually and as a team focused on MFW

health and wellbeing. Each HCW role entails responsibilities and objectives distinct from one

another, leading to different experiences which may highlight areas of overlap or gaps in the

current system. Collectively, the individual experiences from HCWs in similar work roles or

with affiliated responsibilities were used to generate collective and robust descriptions of the

phenomena.

**3.3. Theoretical Framework**

The design and interview guide (Appendix D) for the present study was informed by

Andersen’s Behavioural Model for Health Services Use. Although the model has been revised

numerous times it was first introduced in 1968 by Ronald M. Anderson, a health services

professor at the University of California, Los Angeles, the most recent edition (Andersen,

Davidson and Baumeister, 2013**)** is used in this study (Appendix F). This model presents a

conceptual framework that considers both contextual and individual characteristics when

evaluating health care services and determining health needs. In this study, context is comprised

of Niagara Region and the health care agencies and organizations providing care for MFWs amid

the COVID-19 pandemic. Individual characteristics are those pertaining to MFWs, specifically

those discussed in the background and literature review sections of this thesis. The researcher

considered the various contextual and individual characteristics of MFWs that might predispose

and enable their use of COVID-19 health care services and the processes of medical care. The

processes of medical care describe HCW behaviours and interactions with MFWs throughout

health care delivery. In this study, processes of medical care are defined by HCWs that have

worked directly with MFWs. Process measures include quality of patient-provider

communication, the specifics of caring for a patient with a particular condition and patient

education.

**3.4. Positionality Statement**

The researcher acknowledges their standpoint as an American-Canadian female

nurse that has never participated in the provision of health care for MFWs. The researcher grew

up in Windsor-Essex County, Ontario which employs one of the largest populations of MFWs in

Canada. They observed this population in the community many years prior to beginning the

current research endeavour and developed an awareness of several challenges faced by MFWs.

The researcher has several Spanish-speaking family members from El Salvador who relayed

their experiences being born into poverty and then immigrating to the United States for post-

secondary school. Collectively these experiences from the researcher’s family members

prompted a personal interest in the MFW population and invoked empathy for this population

particularly as the pandemic started.

**3.5. Study Setting**

 The study was completed in the Niagara Region of southern Ontario, nestled between

Lake Erie and Lake Ontario. The area hosts many of the largest farming operations in the

province and employs a large agricultural workforce of approximately 4,000 MFWs annually

(Government of Canada, 2020r, Niagara Region, 2020b, Migrant Farmworkers Project, 2021).

Organizations that are involved in the provision of health care services for MFWs in the Niagara

Region include but are not limited to: Niagara Region Public Health, Niagara Region

Community Services, the Community Health Centre, Niagara Health, Occupational Health

Clinics for Ontario Workers, Niagara Emergency Medical Services. These organizations employ

HCWs of various professions to coordinate and provide health services to MFWs. Niagara

Health is a multisite healthcare provider consisting of five hospitals throughout Niagara Region

(Niagara Health, 2022). Niagara EMS is an ambulance, paramedic and dispatch operation

providing emergency pre-hospital medical care to the region (Niagara Region, 2022). The

Community Health Centre (2017) in Niagara Region is one of 75 Community Health Centres

(CHCs) in Ontario that provides primary health care, health promotion and community capacity

building to its residents. CHCs prioritize the improvement of healthcare accessibility for

vulnerable and marginalized patient populations. To address the various healthcare barriers faced

by MFWs in Niagara Region, the CHC initiated the Seasonal Agricultural Workers Health

Program (SAWHP) in 2014. The SAWHP offers healthcare services specifically to MFWs at

various Niagara Region locations as well as directly to MFWs at their living quarters.

Under a class order by the Medical Officer of Health and Commissioner for the Niagara

Regional area, farm owners and operators must ensure that MFWs adhere to isolation and

quarantine measures and provide workers with supplies for infection prevention including masks,

hand washing and disinfection products (Niagara Region, 2020a). In spring of 2021, a COVID-

19 vaccination clinic organized by the Community Health Centre and Niagara Region

Community Services administered approximately 3,000 vaccines to MFWs (Niagara Region,

2021b). MFWs were a prioritized group for COVID-19 vaccination to prevent the large-scale

outbreaks that occurred in 2020. The prominence of agriculture in the area and the class order

requiring specific health services for MFWs supported the selection of this location for the study

**3.6. Sampling**

 Purposeful methods of recruitment are the gold standard in QD research (Sandelowski,

2000; Patton, 2002). Purposeful sampling involves the selection of information-rich participants

with an objective of gaining an in-depth understanding of the phenomenon rather than producing

generalizations (Patton, 2002). For this QD study, the researcher planned individual interviews

with HCWs to acquire an in-depth understanding of the management and prevention of COVID-

19 among MFWs. Risks of researcher bias were minimized as recruitment aimed to achieve

maximum variation of participants. This approach promoted the collection of diverse experiences

and perspectives from participants with different roles and varying levels of experience

(Sandelowski, 1995). Variation in work roles and years of field experience exists among study

participants. Purposeful sampling was supplemented by snowball sampling (Patton, 2002) to

help recruit participants from a variety of health care roles. Snowball sampling is the collection

of participants with valuable characteristics based on referral from key informants in a given

field of study. The anticipated sample size for this QD study serves only as an estimate, as

sampling adequacy in qualitative research is best determined by emerging data rather than a pre-

set number of participants (O’Reilly & Parker, 2013). The goal of most qualitative research is to

recruit information-rich participants so that the research question may be answered with a

smaller sample size compared to quantitative research (Dworkin, 2012; Sandelowski, 2000). In

addition, Magilvy and Thomas (2009) suggest using a smaller sample size in QD compared to

other qualitative research designs, recommending three to twenty participants. For novice

researchers they recommend using an even smaller number of participants. A sample size of

ten participants was estimated for this study. This sample size enables the researcher to

thoroughly explore and describe the experiences of participants as the focus is narrowed to

the experiences of HCWs providing COVID-19 management and prevention for MFWs in

Niagara Region.

**3.7. Recruitment**

 During the planning phase of this study, key contacts from Niagara Health and Niagara

Emergency Medical Services (Niagara EMS) were established. One of these key contacts later

connected the researcher with the Community Health Centre for potential recruitment. The

researcher initially contacted various health agencies and organizations in Niagara Region to

inform them of the study and to learn about their health services offered to MFWs. If deemed

appropriate, the researcher then requested permission to recruit their employees using an email

script (Appendix A). All health agencies and organizations were encouraged to contact the

researcher at any point should they have questions regarding the study. Participating health

agencies and organizations were sent a study flyer (Appendix B) which they then circulated to

their employees for study recruitment. HCWs involved in the provision or organization of

COVID-19 related health care for MFWs were invited to participate. As stated on the study flyer,

those interested in participating or who wanted to learn more about study were encouraged to

contact the researcher via email or telephone. The researcher answered any questions that

interested individuals had regarding the study. If the individual agreed, then the researcher

obtained their email address to send them the letter of information and informed consent

(Appendix C) for their review. Informed consent was obtained via email prior to conducting the

interview. Participants were asked to electronically sign the consent form and then email the

form back to the researcher. Several participants were unable to sign the consent form

electronically or manually, so an email stating that they had reviewed the consent form and

agreed to participate was accepted. All participants were given a $20 Starbucks gift card along

with a thank-you email to thank them for their time. Those wishing to withdraw from the study

also received the gift card and a thank you email. One individual that initially expressed interest

and met the study inclusion criteria eventually chose not to participate due to scheduling

conflicts with work.

 Although participants share a common geographic region, they are diverse in terms of

place of employment, work roles and responsibilities, which enabled a collection of information

rich interviews. The information collected from this diverse group captured each participant’s

unique experience, a key step in QD research and the focus of this study (Bradshaw et al., 2017).

The health care agencies, organizations and number of employees involved in COVID-19 health

care efforts for MFWs were unknown by the researcher prior to data collection for this study.

This information was requested during interviews and is reported in the study findings.

**3.8. Data Collection**

Typical methods for data collection in QD research are individual interviews and focus

groups, observation of target events and examination of artifacts (Sandelowski, 2000). Focus

group and face-to-face interviewing were not an option for this study due to restrictions enacted

during the current COVID-19 pandemic. The primary method of data collection was individual

interviews with each study participant using the online video conferencing platform Zoom

(2020). Interviews conducted by videoconference allowed the interviewer to engage participants

visually and observe nonverbal cues. Zoom (2020) offers high-definition video and audio

streaming which improves call quality. The program also has an audio- recording function so

that the researcher can focus on interviewing rather than note taking. The Zoom platform offers

password protected meeting entry for all in-meeting content. Use of individual as opposed to

group interviewing in this study helped maintain privacy as participants are not identifiable to

one another. Individual interviews may also promote greater comfort and willingness of

participants to discuss negative or uncomfortable personal experiences

(Bolderston, 2012; Qu & Dumay, 2011).

Interviews were conducted using a minimally structured, open-ended interviews guide as

recommended by Sandelowski (2000). The purpose of minimally structured interviewing is to

collect data pertaining to social worlds and experiences in a manner of natural conversation

rather than focused interviewing with fixed response questions, (Sanchez, 2014). The interviewer

must be highly responsive to the responses from each participant and adopt a “go with the flow”

style to interviewing (Patton, 2002). Minimally structured interviews are best suited in studies

where the researcher hopes to obtain an in depth understanding of an unexplored phenomenon

within a specific context (Zhang & Wildemuth, 2009). This method of interviewing is the best fit

as COVID-19 management and prevention among MFWs in Niagara Region is a novel health

situation and a novel area of research.

Although minimally structured interviewing takes longer to conduct, it promotes a flow

of information that enhances the value of study findings (Qu & Dumay, 2011; Zhang &

Wildemuth, 2009). A minimally structured interview guide works well with a smaller number of

participants as in this study. The interview guide (Appendix D) contains a list of anticipated

questions and topics to prompt or guide the interview (Zhang & Wildemuth, 2009). This guide

did not determine the order of conversation and was easily adjusted according to participant

work roles and responses. As part of a minimally structured and flexible interviewing guide, the

interviewer posed some introducing, probing and specifying questions to each participant as the

interview progressed (Qu & Dumay, 2011). Prior to conducting study interviews, the researcher

completed a pilot interview to determine the appropriateness and flow of interview questions and

practice interview technique (Majid et al., 2017). The pilot interview was conducted with a nurse

who had cared for a patient with COVID-19 as they had some similar experiences to actual study

participants. The researcher reviewed the pilot interview transcript and obtained feedback from

the pilot test interviewee to make any necessary interview modifications.

Each study interview was scheduled for a time of participant choice to enhance

convenience and promote comfort throughout the interview process. Upon meeting with each

participant via Zoom video conferencing, the interviewer reintroduced herself, briefly reviewed

the research purpose, provided an anticipated length of interview time and then asked if the

participant had any questions prior to starting the interview. Interviews took between 45 minutes

and an hour, however interview time was extended in several instances with participant

permission. Each interview was audio recorded to enable the researcher to focus on the interview

and generate additional questions to expand on or clarify participant responses. The interviews

started with a set of questions to collect demographic information about current job, length of

time in current job, job responsibilities and past employment. This information is useful as

context to further understand each participant experience. These questions are non-threatening

and help engage participants in conversation. The interviewer then posed some introducing,

probing and specifying questions. Questions and flow of the interview were in part determined

by each participants’ profession and responses. Questions were open-ended to encourage

participants to thoroughly describe their individual experiences.

Target events were identified as they were noted throughout the study. An example of a

target event that could be considered valuable for observation are COVID-19 testing and

vaccination of MFWs. Due to the restrictions enacted during the COVID-19 pandemic the

researcher was unable to observe any identified target events. The researcher was able to obtain

artifacts specific to the phenomena of interest. These artifacts were several videos produced by

HCWs at the CHC for the MFW population.

**3.9. Rigour**

Each participant interview was transcribed verbatim from the audio recording. After

conducting interviews, the researcher performed a preliminary analysis to ensure that the

interview process aligned with study objectives, to determine if questions performed well or

needed adjusting. Interview technique was also revised with the thesis supervisor and confirmed

appropriate (DiCiccio-Bloom & Crabtree, 2006). Data triangulation, which is the utilization of

multiple methods of data collection, is used in research to enhance the confirmability and

transferability of study findings (Bengtsson, 2016). Information gathered through artifacts were

used to clarify or support findings from participant interviews during the analysis phase.

Immediately following each interview, the interviewer recorded field notes as an additional

method of supporting analytic rigour (Phillippi & Lauderdale, 2018). In the field notes, the

researcher noted supplemental contextual data such as participant demeanour and nonverbal

behaviours. The researcher also documented her first impression of the interview and created a

critical reflection of her personal biases, feelings, and interviewer performance. Field note entries

were recorded in a Word Document file. The interviewer consulted committee members for

guidance throughout data collection as needed. Member checking was used to promote validity

of results and achieved by sharing a summary of results with participants and requesting their

feedback regarding the accuracy of described experiences. Member checking was performed via

email. To ensure that data is appropriately integrated during analysis, the researcher met with the

research committee to review analysis efforts and seek feedback. A review of themes and

categories was conducted multiple times by the research supervisor with regular feedback

provided.

**3.10. Ethical Considerations**

The letter of information and informed consent document explained voluntary

participation and the right to withdraw from this study at any point. Recruited individuals that

expressed interest in study participation were emailed this document for review. Individuals

had at least 24 hours to review these documents before the researcher obtained informed consent.

Participants were encouraged to ask any questions regarding the study before signing consent.

Each potential participant was asked about any special considerations such as literacy, visual,

hearing and/or speech issues that the researcher needed to accommodate. The researcher

recorded interviews using the Zoom platform. Each participant was assigned a study number at

the start of the interview to replace his or her name in interview transcripts and data analysis

documents. At the start of each interview, the participant was asked to refrain from using

identifying details during discussion of specific MFWs to prevent privacy breaches. Each

interview transcript, was anonymized by removing personally identifiable information of the

participant. Consent forms, interview audio recordings and transcripts, artifact notes and records,

data analysis files and the list of study numbers are stored electronically on the secure drive of

the university, Macdrive (McMaster University, 2023). The MacDrive is a privately hosted and

secure online storage tool. Only the researcher and her supervisor had access to the study files in

MacDrive. The researcher accessed MacDrive on a password-protected laptop computer that is

stored in her office. All data will be retained until January 2026, three years from the study end

date to allow for sufficient time to publish.

**3.11. Qualitative Analysis**

Content analysis is the most applied method of data analysis in QD research

(Sandelowski, 2000). This method of analysis was applied to all verbal, visual and written data

obtained in data collection to objectively describe the phenomenon (Downe-Wambolt, 1992).

Concurrent data analysis, commencing after the first interview informed subsequent interviews

and helped ensure information rich responses and quality of data to answer the research question.

This study employed qualitative content analysis process outlined by Bengtsson (2016).

Bengtsson urges the researcher to distinguish between a manifest or latent analysis. Manifest

analysis adheres to the original meaning of data and makes use of participants’ own words, while

latent analysis is a more interpretive process which seeks to discover the hidden meaning of data.

As the current study focuses on an understudied phenomenon, manifest analysis was used.

The four stages to qualitative content analysis that were utilized included

decontextualisation, recontextualisation, categorisation and compilation. In the first stage, the

researcher read the transcribed interview and determined the overall meaning before breaking

the interview down into its “meaning units” which were labeled using codes. This first stage

required the researcher to reread and review interview transcripts and any notes taken on artifact

contents. The list of codes deriving from the results captured the primary essence of participant

experiences. As the coding list developed, the researcher included explanations of each code to

ensure that coding was conducted consistently throughout analysis. Each transcript was subjected

to the coding process several times, with the researcher starting at different points in the

interview to increase reliability of coding. Once the interview transcriptions were analyzed, the

researcher applied the same analysis process to artifact notes. It is recommended that for first

time researchers, coding be conducted on hard copy printouts rather than on a computer

(Saldana, 2009). The researcher conducted the first round of coding for each interview in hard

copy, and then these codes were transferred to the password protected computerized database.

NVivo, a computerized qualitative data analysis software program was used to store and

organize data and efficiently conduct the analysis (Lumivero, 2023). The second stage,

recontextualisation required the researcher to compare all generated meaning units with the

original data and determine if any unused data should be included or discarded. In the third stage,

categorisation, the researcher first condensed meaning unit titles when possible, while still

maintaining the intended meaning. The goal is to identify categories from the meaning units,

which were then grouped to form themes. The final stage of analysis is compilation in which the

process of writing began. The researcher made efforts to discuss findings from a neutral position,

using reflexivity to minimize bias. In compilation, each category and theme was considered and

often incorporated the words of participants. Themes and categories are presented in a table to

provide readers with an overview of results. Data regarding participant employment was used to

inform the analysis as each participants’ experience was influenced by their respective work role.

**4. Findings**

**4.1. Participant Overview**

 A total of seven HCWs participated in this study. While the projected sample size of ten

participants was not achieved, the researcher feels that seven participants was sufficient given the

employment heterogeneity existing among participants and the extensive amount of data

collected in interviews. This study recruited participants from a variety of healthcare occupations

including clinical and nonclinical roles. The participant group is comprised of one nurse

practitioner, one community health worker, one executive director and four paramedics. A

straightforward description of the jobs of study participants is provided (see Appendix E).

All study participants reported working in their current jobs since the initial impact of the

COVID-19 pandemic in Niagara Region in early 2020, with two participants starting in March

and April 2020. The length of current job employment for participants ranged from one year to

greater than 30 years, and the mean number of years worked in the current job was 11.9 years.

Several participants previously worked for a different employer in the same job type. One

participant previously worked in a different job type for their current employer. Six participants

identified English as their primary language and one participant identified Spanish with fluency

in English. Given the highly specific context in which this study was conducted, there is a

considerable risk of identifiability among participants. To maintain privacy, demographic

characteristics specific to each participant such as gender, length of employment and location of

employment will not be disclosed. Participant names were not used in study transcripts and

instead, each participant was assigned a study number at the start of the interview in the

following format: A1, B1, C1, A2, B2, C2, A3.

**4.2. Context of Work Role Changes**

As is characteristic of qualitative descriptive research, a straightforward description of the

subject under study was obtained from participants. They described how COVID-19 was

managed among the MFW population in Niagara Region and detailed their personal involvement

in these efforts. Their stories helped in defining *who, what* and *where* relating to this unique

phenomenon. Participant work experiences relating to healthcare provision for MFWs are

considered from a pre-pandemic and pandemic work perspective. These experiences were largely

dependent on each participant’s job type and employing health agency/organization. Therefore,

the findings for this section are organized according to employer and job type.

**4.2.1. Niagara EMS**

 All Niagara EMS participants work as paramedics and so their experiences are organized

collectively. The paramedic participants described their pre-pandemic work responsibilities as

treating patients for medical and trauma reasons as directed by 911 and providing transportation

to hospital. When asked about pre-pandemic work experiences with MFWs, the paramedics

reported having minimal interactions with this patient population. One paramedic recalled that in

their twenty years of work, they completed five or six calls for MFWs. Another paramedic said

that previously they have been called to farms periodically to care for MFWs previously, and that

it wasn’t a frequent occurrence. The paramedics answered that they had not received a job

briefing on the MFW population prior to or during their experience working with the CCAT.

Paramedic participants described how the Niagara EMS service transitioned in response

to COVID-19. The service initiated the Covid Community Assessment Team (CCAT) which

provided COVID-19 testing services to individuals in the community that were unable to get to a

test centre. In addition to MFWs, this included long term care and nursing home residents and

individuals with a physical limitation such as a disability or palliative status. Four paramedics

worked on the CCAT fulltime, and ten to twelve paramedics worked as backfill for the CCAT

when needed. There were several different types of COVID-19 tests that the CCAT could

perform including nasal and oral however they almost always performed deep nasal testing. The

employment selection process for the CCAT was voluntary. Paramedics submitted an expression

of interest letter and then interviewed for a position with the team. The CCAT was in operation

from April 2020 until June 2021 in Niagara Region. In addition to conducting the COVID-19

test, CCAT paramedics were required to check each patient’s vital signs including blood

pressure, oxygen saturation and temperature. The CCAT was designated for COVID-19 testing

and so these paramedics exclusively performed testing services during their shift and were not

deployed to emergent calls. The CCAT operated with two paramedics working together each

shift to conduct testing. One paramedic performed the tests and collected patient vital signs, and

the other paramedic was responsible for documentation. Paramedics often used the terms *swab* or

*swabbing* when referencing the act of collecting a specimen for COVID-19 testing. The CCAT

team was mobile, meaning they travelled to each patient to conduct COVID-19 testing. A

paramedic described the situation when COVID-19 first impacted MFWs:

“All of a sudden the farms just lit up like Christmas trees so then that was

our focus for many months. It was just every single day you knew you were going to a

farm here and there and everywhere.”

Paramedics detailed the COVID-19 testing process for MFWs. The CCAT travelled to MFW

living quarters to conduct testing. They said that tests were usually performed outdoors when

mass testing of MFWs was conducted and indoors when only one or a few MFWs were being

tested. Mass testing was performed when a COVID-19 outbreak at the farm was suspected. One

paramedic referenced a mass test in which 80 MFWs were tested at once. Another paramedic

described mass testing over 100 MFWs which took two days to complete. Additional CCAT

paramedics would often come to assist for mass MFW testing.

The CCAT paramedic participants estimated performing hundreds of tests for MFWs

across many different farms and hotels in Niagara Region where MFWs were being temporarily

isolated. One participant recalled sending two MFWs to the hospital by ambulance for health

deterioration which they suspected to be COVID-19 related. By the end of the CCAT operation,

one paramedic described the team of paramedics as “well-oiled machines.” Another paramedic

expressed confidence that the CCAT could redeploy with minimal notice despite having been

dismantled for some time. Several paramedics also worked at a COVID-19 vaccination clinic for

MFWs in Niagara Region. Their role was to explain the vaccination process to MFWs and then

administer the vaccines.

**4.2.2. SAWHP at the CHC**

The three participants employed at the CHC each had different work positions (CHW,

ED and NP), so their pre-pandemic and pandemic work experiences with MFWs differed from

one another. The positions of NP and CHW are clinical work roles and so these participants care

directly for patients whereas the role of ED is nonclinical and leadership based. The ED and NP

started working at the CHC in February and April 2020 respectively, which was shortly after

COVID-19 first appeared in Canada. These two participants were not personally involved in the

care of MFWs prior to the pandemic and so the pre-pandemic experiences they described were

based on general knowledge and acquired understanding of the SAWHP and its work roles. The

NP described how pre-pandemic, their responsibility was to address the acute health issues of

MFWs and to provide them with preventative health care services and chronic disease

management. The ED defined their pre-pandemic work role as overseeing the coordination of

partners working together and looking for opportunities to expand SAWHP services. The CHW

described their ample pre-pandemic experience managing healthcare for MFWs and promoting

the SAWHP services throughout Niagara Region. Their work role encompassed coordinating

several MFW health clinics, providing health education to MFWs and building partnerships with

different stakeholders involved in MFW healthcare. Prior to the COVID-19 pandemic, the CHW

conducted regular farm visits to provide MFWs with health promotion and interpretation services

as they possess fluency in both English and Spanish. The CHW was accompanied by the

SAWHP nurse during these visits, who conducted nursing assessments for MFWs.

The CHW and NP described the church health clinics offered to MFWs in Niagara

Region pre-pandemic. These clinics were designed to enhance accessibility of various health

care services for MFWs. They were held weekly on Sundays at several churches and operated

through the efforts of multiple community partners and volunteers. Each church had a clinic

room with full diagnostic boards and exam tables. The clinics were typically staffed with one to

two volunteer nurse practitioners or physicians assisted by volunteer nurses. The NP received all

referrals and requisitions ordered for MFWs and conducted follow up as necessary. The NP also

described how the church health clinics served as a social meeting place for MFWs:

“Often times the health clinics are advertised as kind of like walk-in, it’s a social thing,

[MFWs] kinda comes to hang out, they grab a water, grab a snack like talk to their

friends, like go see the nurse to get their blood pressure checked or see the NP if they

need something more.”

As COVID-19 restrictions were implemented, the in-person healthcare services ceased including

farm visits and church health clinics. The CHW explained how this prevented the SAWHP from

conducting much of their outreach work with MFWs, a critical component of their program. The

participant described how the SAWHP transitioned to using virtual healthcare methods during

the pandemic so that they could continue communicating with MFWs and providing them with

healthcare services. They utilized the online messaging application WhatsApp (2022) as well as

the videoconferencing platform Zoom (2022). The NP described how their work responsibilities

shifted in response to the COVID-19 pandemic. They began conducting virtual symptom

management check-ups for MFWs diagnosed with COVID-19. These virtual check-ups were

performed every few days unless MFWs were experiencing severe symptoms, in which case

check-ups were conducted daily. The NP also inquired into whether MFWs had sufficient access

to food and medication and provided health education as necessary. To facilitate COVID-19

vaccination efforts in Niagara Region, a collaborative effort called the Community Coordination

Task Force for COVID-19 Vaccination was developed. The ED participant was highly involved

with the task force as a representative for the community health sector. MFWs were identified as

a high-risk group due to their congregate living situations, so a mass vaccination clinic

specifically for MFWs was devised. The mass clinic was held at the Seymour-Hannah Sports and

Entertainment Centre in St. Catharines, Ontario. The ED participant described the extensive

planning process for this mass vaccination clinic as well their additional work responsibilities as

follows:

“I personally spent an entire weekend calling farm owners to let them know that we were

moving forward with the vaccination clinic for MFWs and that we needed to start

collecting names and dates of birth for MFWs to register them. This wasn’t going

through the provincial portal for registration because this was a local initiative, so we had

to kind of be creative in how we were booking people for these. MFWs had to also be

transported in their cohorts, so there was a lot of technical pieces to figure out. It was

quite an endeavor. We did a pilot of about 190 MFWs and it seemed to work very well so

then we put up a weekend in partnership with Public Health and Niagara Health, and on a

weekend we had over 3000 MFWs come through for their first vaccine. Then they all had

to come back for their second.”

As the pandemic progressed, some MFWs had the opportunity to receive their first dose of the

COVID-19 vaccination at Toronto Pearson airport upon arrival into Canada. Of these MFWs,

those who worked in Niagara Region received their second vaccination dose through the CHC.

The NP arranged these smaller scale vaccination clinics at the CHC and estimated that they

vaccinated 200 to 250 MFWs.

As COVID-19 restrictions in Ontario gradually lifted, the SAWHP resumed many health

services for MFWs that had ceased during the pandemic. Initially, the outreach team assembled

pop-up tents at farms to perform general health checks for MFWs and to answer any of their

COVID-19 related or general health questions. Farm visits have since resumed and MFW health

clinics are now being offered in a hybrid mode.

**4.3. Study Themes**

 The initial analysis stages of decontextualiztion and recontextualization generated 21

codes. In the categorization stage, patterns among the codes were identified and revealed eight

categories. The categories were then grouped into three themes. Themes and categories are

presented in Table 2 from the transcribed interview data. The content of the categories

sometimes overlap reflecting the intricacies of job responsibility and human experience,

especially throughout the COVID-19 pandemic.

|  |  |
| --- | --- |
| Themes | Categories |
| Adapting to Role Changes | * translation services
* personal protective equipment
* virtual healthcare
 |
| Navigating Regulation Changes | * isolation regulations
* testing regulations
 |
| Responsibility of Healthcare Services | * shared responsibility
* unclear responsibility
* employer responsibility
 |

*Table 2: Themes and Categories*

**4.4. Adapting to Role Changes**

In response to the COVID-19 pandemic, HCW participants from a variety of work

settings experienced work role modifications. The data analysis identified the methods used by

HCWs caring for MFWs in Niagara Region as they adapted to their role changes. The theme

‘Adapting to role changes’ consists of the following categories: *translation services, personal*

*protective equipment* and *virtual healthcare*.

**4.4.1. Translation Services**

The paramedic participants described using a variety of formal and informal translation

methods to communicate with Spanish speaking MFWs. When mass COVID-19 testing among

MFWs was conducted, Niagara Region Public Health (NRPH) sent translators to assist with

communication between paramedics and MFWs. Paramedic participants described how the

translators would confirm each worker’s name and birthday and then explain the testing process

and inquire about their symptoms. Another paramedic expressed that translation services for

testing purposes was too lengthy of a process. MFWs could not be grouped together due to

physical distancing rules and so all communication by translation occurred individually with

each MFW. For smaller scale COVID-19 testing of MFWs, NRPH did not provide a translator

and so the paramedic participants utilized informal methods of translation to communicate. They

performed translations themselves using the application Google Translate on their personal

cellphones. Google Translate (2022) allows users to perform text, voice and photo translation in

over 100 languages. The use of hand symbols was another informal method of translation that

paramedics described using. This was conducted by mimicking the COVID-19 testing process

and counting out loud, which participants felt were effective in communicating with MFWs. A

paramedic described how their previous experience using hand symbols to translate with patients

made it easier to communicate with Spanish speaking MFWs. Eventually the CCAT created its

own laminated symptom cards in Spanish that they would hold up to MFW patients, prompting a

yes or no response. The CCAT developed roughly twenty symptom cards such as nausea,

vomiting and diarrhea. One paramedic participant expressed, “I could probably recite them all in

Spanish still” and another declared “my Spanish got pretty good!” Participants felt that they were

eventually capable of conducting independent translation to communicate sufficiently with

MFWs during COVID-10 testing. The paramedics grew comfortable utilizing informal methods

of translation with MFWs. They also described how the MFW employers provided translators in

some instances. One paramedic recalled testing MFWs for COVID-19 at a hotel with assistance

from a translator that had been hired by the MFWs’ employer. Two paramedics recalled

receiving translation services from MFW employers themselves.

The ED participant described how the need for translation services was identified during

the planning process for the COVID-19 mass vaccination clinic for MFWs. Translators were

required from the point of registration at the clinic until after MFWs received their vaccination,

and all reading materials were translated into Spanish. The importance of having translators

available for MFWs throughout each step of the vaccination process including vaccine

education, registration, administration, and aftercare was acknowledged. Paramedic participants

that assisted with COVID-19 vaccine administration at the mass clinics hosted for MFWs in

Niagara Region described how translation services were readily available. Translators would

accompany the paramedics onto the busses where MFWs were awaiting their vaccines, to

provide translation services throughout the vaccination process as necessary. The NP participant

that arranged the smaller COVID-19 vaccine administrations for MFWs at the CHC clinic

described having Spanish translators and reading material available to provide translation

services to MFWs throughout the vaccination process. It was reported by several paramedics that

another paramedic in their division is Spanish speaking and so on at least two occasions they

could recall, it was arranged for the Spanish speaking paramedic to provide translation services

at MFW testing and vaccine administrations. One paramedic reflected on their experience

communicating with Spanish speaking MFWs, stating that they “tackled the challenge.”

**4.4.2. Personal Protective Equipment**

The adaptability of study participants to their work role changes is further demonstrated

in the category *personal protective equipment*. Prior to the COVID-19 pandemic, the paramedic

participants reported that in terms of PPE they typically wore gloves and eye protection.

Paramedics described the transition to wearing various types of PPE after the pandemic onset. To

perform COVID-19 testing, paramedics were required to wear full PPE which entailed a

respirator, gown, gloves, and eye protection by means of goggles or safety glasses. To

proactively prevent PPE shortages, the CCAT implemented the use of powered air purifying

respirators (PAPRs). One paramedic describes a PAPR as “a full mask with a hose that attached

to the battery powered filtration unit behind you that had purified air blowing all the time.”

While paramedics said they felt protected wearing these devices, they found the PAPRs difficult

to incorporate into their practice. Communication with MFWs was impeded by the PAPRs

because the full masks muffled voice sounds when worn and the air purifier produced a loud

noise. This was in addition to the communication challenges already encountered due to

language barriers. As one paramedic emphasized that even an English-speaking individual with

good hearing would have difficulty hearing them over the PAPR. Paramedics also found the

respirator units cumbersome and time costly to use. They outlined the steps of putting a PAPR

on as: applying the mask, putting the backpack unit on, securing a belt, and attaching a hose from

the mask to the backpack unit. After each use the PAPRs had to be cleaned which also increased

time between tests. The paramedics described looking like aliens and Martians when wearing the

PAPRs. The respirator units were reportedly heavy and hot to wear, especially on warmer days.

One paramedic described conducting MFW tests outside during the summer while wearing the

PAPR unit and a gown.

The CCAT operated out of a decommissioned ambulance that had been revamped

specifically to conduct COVID-19 testing. One paramedic describes the layout of the revamped

ambulance:

“All of our ambulances have a powerlift stretcher in it, so there’s a track that runs

through the center of the ambulance. They had the track and the stretcher removed out of

our CCAT ambulance. All of the cabinets didn’t have medical supplies, it was all gowns

and masks instead. It had garbage container, stuff like that so we could go into the back

of the ambulance if needed to actually take our PPE off and put it on, or we could do that

outside of the ambulance.”

The CCAT utilized a teamwork approach to enhance infection prevention measures while

conducting COVID-19 testing. One paramedic collected the nasal swab samples while the other

paramedic, who was designated clean, performed documentation tasks while maintaining a

physical distance from patients. The CCAT ambulance was described by participants as being

sufficiently stocked with necessary PPE and testing supplies.

**4.4.3. Virtual Healthcare**

The third category contributing to participants’ role change adaptability is virtual

healthcare. Several participants in this study utilized virtual methods of communication to inform

MFWs about available health services and to deliver healthcare. The CHW participant said that

prior to the COVID-19 pandemic, the SAWHP seldomly used virtual healthcare to communicate

with MFWs. The SAWHP adapted several methods of virtual healthcare for MFWs during the

pandemic. When the pandemic began, they distributed flyers to MFWs via WhatsApp to inform

them that the SAWHP was still offering some health services virtually. They provided health

promotion services to MFWs through WhatsApp and Zoom, however WhatsApp was most often

utilized as Zoom was reportedly more challenging for MFWs to navigate. The CHW believed

that the virtual methods of healthcare implemented for MFWs during the pandemic are efficient

for long term use. They emphasized that many MFW health concerns could be addressed quicker

virtually rather than in-person at a clinic. The CHW explained how aspects of virtual healthcare

delivery for MFWs have been integrated into the SAWHP practice ongoing. They now operate in

a hybrid mode, utilizing both in-person and virtual healthcare delivery methods as needed.

The NP participant offered a contrasting opinion of virtual healthcare with MFWs. They

identified the barriers faced by MFWs to accessing virtual healthcare including a poor

understanding of technology as well as limited accessibility to Wi-Fi. The NP expressed that

healthcare became even less accessible for MFWs because of the new reliance on virtual

healthcare in conjunction with their limited access to technology. The ED participant also spoke

to this issue, referring to it as “digital equity” for MFWs. They explained how the geographical

location of farms can make it difficult for MFWs to access Wi-Fi services. This caused technical

challenges when trying to connect with SAWHP staff and/or volunteers by messaging or virtual

means. The NP explained that when MFWs finally contacted the SAWHP, they often presented

with multiple health issues that had compounded over time. They also detailed how the inclusion

of translators made virtual healthcare delivery more challenging by the addition of a third person

into the virtual visit. The NP added that cultural nuances of MFWs were often missed or

misinterpreted through virtual care. When a MFWs’ health status warranted further assessment,

the NP said that in-person physical assessments were arranged at the CHC clinic because

“there’s some things you just can’t do virtually.”

**4.5. Navigating Regulation Changes**

Paramedic participants often referred to the implementation and modification of

regulations for COVID-19 detection and prevention among MFWs. These regulations directly

impacted how the CCAT carried out COVID-19 testing for MFWs. The categories contributing

to the theme of ‘Navigating regulation changes’ are *isolation regulations* and *testing regulations.*

**4.5.1. Isolation Regulations**

Specific isolation measures were implemented for MFWs that had recently arrived to

Canada, were exposed to a COVID-19 case or were symptomatic. A paramedic explained how

earlier in the pandemic, arriving MFWs were entered Canada two weeks earlier than normal in

order to complete the mandatory isolation period. When conducting testing the paramedic

participants encountered many MFWs isolating together in bunkhouses while sharing bedrooms,

bathrooms and the kitchen. Participants felt that regardless of the infection prevention measures

practised by MFWs, many still acquired COVID-19 in the bunkhouses due to their close living

proximity with one another. Another paramedic described the difficulty of bunkhouse isolation.

MFWs were housed in a variety of bunkhouse sizes, and some were provided accommodations

in rented trailers. Paramedics also observed attempts to isolate asymptomatic and symptomatic

MFWs from one another in separate bunkhouses. They doubted the effectiveness of this method,

reporting that the asymptotic MFWs regularly developed COVID-19 symptoms. As the

pandemic progressed, a transition to hotel isolation for some MFWs was observed by paramedic

participants. After arriving to Canada, MFWs were isolated individually in hotel rooms for a

two-week period. Hotel isolation was described as more organized than bunkhouse isolation and

allowed the CCAT to conduct a more seamless testing process. Each MFW would meet the

CCAT paramedics in the hallway outside of their hotel room for a COVID-19 test and then

immediately return to their room. However, every paramedic participant emphasized the

struggles of this individual isolation for MFWs. They expressed that while MFWs were safer

physically in hotel isolation, their mental wellbeing was of concern. It was evident that they

empathized for MFWs in hotel isolation. As one participant describes:

“Your heart broke for them because now they’ve been stuck in a hotel room for 10 days,

they haven’t been able to work, it’s not the food they’re used to. Most of them don’t

speak a lot of English so they’re sitting literally in a jailcell because they’re watching

four walls. They don’t have TV that’s in their language. A lot of them get their

cellphones when they get to Canada, so they didn’t have phones or access to internet or

anything and it really made a lot of them struggle mentally. They would ask me, can you

take me outside, can I go for a walk, I’ve had no fresh air, I’m struck in this room, I can’t

have sunshine. They were literally like animals in a cage.”

One paramedic highlighted the substandard food selection provided to MFWs in hotel isolation.

They were often given fast-food or foods they were unfamiliar with eating in their home

countries. Paramedic participants expressed the emotionally burdened they endured by caring

for MFWs in these conditions. Paramedics described their efforts to assist and provide optimism

to isolating MFWs. They engaged in general conversation with MFWs and set up Wi-Fi on their

cellphones to facilitate communication with their families. Paramedic participants repeatedly

acknowledged the inconsistent protocols regarding the length of MFW isolation periods.

**4.5.2. Testing Regulations**

Similar to isolation rules, the regulations for COVID-19 testing of MFWs transitioned

over time. Paramedic participants detailed how testing requisitions were obtained and the

scheduling of tests early in the pandemic. Tests were prearranged between Public Health and

MFW employers, and then a requisition for each test was sent to the CCAT. Paramedics spoke to

the employer or the MFW to confirm the testing time. One paramedic described how premature

testing of MFWs led to repeat testing:

“With the early testing we were testing exposed MFWs right away, so now research

shows that if you get tested before day 3 to day 5 from contact, your first test is likely

going to be negative. So we were back and forth to all these farms like yo-yos to retest

people.”

There was no specific policy for COVID-19 testing of MFWs at the beginning of the COVID-19

pandemic. Initially, MFWs were only tested after exposure or if symptomatic. Overtime this

transitioned to mandatory testing upon arrival to Canada. Paramedic participants described how

for situations in which only one or a few MFWs were symptomatic for COVID-19, the CCAT

would manage testing. But if a farm outbreak was suspected, a NRPH nurse would be present at

testing to oversee proceedings, conduct contact tracing and determine which MFWs required

testing. The decision process used to determine which MFWs required testing was variable, with

participants describing it as “nurse-dependent” and “random.” One paramedic detailed an

incident where they disagreed with a NRPH nurse’s decision for COVID-19 testing of MFWs.

The CCAT was given requisitions to test only select MFWs within a bunkhouse, and they were

unable to test others who had also become symptomatic. This participant exhibited frustration

that they did not have autonomy to test these newly symptomatic MFWs.

It was eventually mandated that all arriving MFWs to Canada be tested for COVID-19 on

day two and day 10 of their isolation period. However, it was not always possible for the CCAT

to perform these tests due to other testing obligations in the community. This sometimes resulted

in testing delays, which then caused extensions to MFW isolation periods. There were also

instances where retesting was required due to incorrect patient information on the test

requisitions received from NRPH. Participants described how some Mexican MFWs have two

last names which were sometimes documented incorrectly. To resolve this, NRPH started

providing blank requisitions to the CCAT so that they could be completed in person with each

MFW.

As the pandemic progressed, some MFWs arriving to Canada were required to conduct

at-home COVID-19 tests while in mandatory isolation. Paramedic participants encountered some

MFWs in hotel isolation that had been given at-home testing kits at Pearson Airport upon arrival

to Canada. They described how MFWs struggled to complete these testing kits due to limited

access to technology and no Spanish directions provided. In one situation, a paramedic

advocated for these MFWs by requesting permission from NRPH to perform the tests as they

were already at the hotel to test other workers. Eventually, there was a shift from the CCAT to

private nursing agencies for conducting MFW COVID-19 testing. Employers were then required

to hire private nurses to test their MFWs. Several CCAT paramedics expressed frustration over

this shift, as they had become proficient at testing MFWs. One paramedic participant expressed

empathy for MFWs as they recalled having to retest several that had been tested by a private

agency nurse. Being retested was frustrating and uncomfortable for MFWs. Paramedics

attributed the eventual CCAT dismantling to a decline in referrals for COVID-19 testing.

**4.6. Responsibility of Healthcare Services**

The theme ‘Responsibility of healthcare services’ includes the participants’ insightful

perspectives of how MFW and provider experiences are impacted depending on the nature of

healthcare responsibility. It also reflects the unconventional nature of employers taking on

healthcare responsibilities for MFWs. Categories that contributed to this theme are *shared*

*responsibility, unclear responsibility* and *employer responsibility.*

**4.6.1. Shared Responsibility**

Most study participants referenced the development of professional working relationships

with NRPH during their provision of healthcare services for MFWs amid the pandemic. The ED

participant discussed the working relationship that developed between the SAWHP of the CHC

and NRPH from an administrative perspective. They explained the distinct roles of each health

agency and how the agencies worked collectively to achieve a common goal of COVID-19

management and prevention among MFWs. NRPH was responsible for inspecting the living

environment of MFWs and providing feedback to the employers regarding the observed physical

distancing and infection prevention measures. Both agencies worked together to manage

COVID-19 outbreaks at the farms. Testing was initiated by NRPH and the CHC would provide

follow up care to MFWs as necessary. This partnership with NRPH generated the dissemination

of the CHC’s resources for MFWs with other public health units across the province and further

strengthened their working relationship. The ED participant acknowledged that the professional

relationship between the CHC and NRPH developed as a result of the COVID-19 pandemic:

“It’s funny because I would say that the pandemic didn’t force, but encouraged a stronger

relationship. Prior to that I would say that they did their part, we did our part. Their

department oversaw the housing conditions that MFWs lived in and did inspections. But

we weren’t really part of that, they never reported anything to us. The healthcare was

provided by us. So yeah, so we worked quite separately. But now we work so closely

together. I would say that there’s been a huge benefit to working together because of the

pandemic.”

This participant also expressed that this coordination of services better serves the MFW

population. The CHW participant conveyed a similar perspective of the strengthened partnership

between the CHC and NRPH resulting from the pandemic. They described how this partnership

also served to enhance the relationship between the CHC and MFW employers. NRPH

connected the CHC with employers and informed them of the CHC’s services offered to MFWs.

The NP participant offered a personal experience regarding shared healthcare

responsibility for MFWs. Their experience details how the overlapping roles of health care

agencies and representatives led to the delivery of inaccurate information regarding an isolation

period to a MFW. This resulted in confusion and frustration among those involved:

“There were a couple instances where it was challenging for me. One time I had given a

MFW some information, Public Health had given them some information and their

employer was also involved but had received different information. So, the employer had

actually called me very irate and was like who are you, who are you to be giving this

information to my employee... I think when there’s too many hands in the pot.”

A new partnership also ensued between Niagara EMS and the CHC as they worked together to

conduct COVID-19 testing and management of MFWs. The NP participant described how

Niagara EMS performed direct patient testing while the CHC conducted symptom management

and further assessment as necessary.

**4.6.2. Unclear Responsibility**

This category refers to the reported lack of clarity regarding the provision of COVID-19

education to MFWs. Every paramedic participant in this study identified the need for COVID-19

prevention education among MFWs. They recognized workers’ knowledge gaps concerning

hand hygiene, isolation measures and PPE usage. Paramedic participants were unaware that the

CHC had developed and disseminated COVID-19 educational presentations and videos

specifically for MFWs. One paramedic participant felt that MFWs did not understand the

importance of infection prevention practises, as they continued to congregate in their bunkhouses

without proper face masks. They also denied seeing any informative signage on COVID-19

prevention practises in the bunkhouses. In addition to working with the CCAT, a paramedic

participant also taught classes on PPE application and removal for COVID-19 transmission

prevention to long-term care staff in Niagara Region. They proposed similar educational

presentations tailored to MFWs but this was reportedly denied by NRPH due to the challenge of

language barriers. The paramedic expressed their resultant frustration, countering that translators

could be hired to present the material. One paramedic felt that rather than being dismantled, the

CCAT could have been redirected to educating MFWs on infection prevention measures.

Several participants from the SAWHP at the CHC described their efforts to educate

MFWs on COVID-19. The CHW and outreach nurse gave in-person presentations to MFWs on

COVID-19 and the necessary precautions to prevent infection. The NP participant provided

virtual education to MFWs as needed. Video presentations were also created so that the

educational content could be shared with MFWs by virtual means. These presentations and

videos were offered in English and Spanish. The SAWHP coordinated with employers to

distribute the videos to MFWs in isolation. The videos were also circulated to NRPH and public

health units throughout the province so that other MFWs could also access the presentations.

Three CHC videos were submitted as artifacts for this study (Pasco 2021; Pasco 2020a; Pasco

2020b). These videos provide virtual clinic hours of operation and contact information for the

CHC and its personnel, and describe the various health services offered to MFWs throughout the

pandemic. They also present a description of COVID-19, proper hand hygiene and physical

distancing measures including the mandatory self-isolation period upon arrival to Canada are

also provided. It is clarified that physical distancing should be practiced at home in addition to

work and public settings. The videos do not advise on the usage of any PPE including mask

wearing in the home setting. The in-person presentations were not filmed so it is unknown how

this material differed from the submitted video presentations. Participants did not elaborate on

the frequency or nature of presentation distribution to MFWs.

**4.6.3. Employer Responsibility**

A third category contributing to responsibility of healthcare services is *employer*

*responsibility*. Study participants described the substantial responsibility of MFW employers to

act as healthcare representatives for their employees, coordinating various COVID-19 related

services for their MFWs throughout the pandemic. The CCAT was required to contact employers

prior to arriving for MFW tests. Some employers would meet the CCAT upon their arrival to the

farm or hotel while others gave direction on where to locate the MFW. Paramedic participants

described how MFW employers were often required to obtain COVID-19 test results for their

employees. Employers were also responsible for scheduling vaccine appointments for their

MFWs. To book MFWs for the mass COVID-19 vaccination clinics, the ED participant

contacted employers who then provided a list of the MFWs that wanted to receive the vaccine.

The NP participant also contacted MFW employers directly to schedule MFWs for the smaller

vaccination clinics held at the CHC. The CCAT paramedics occasionally requested medications

for the symptom management of MFWs from their employers. They recounted that some

employers provided the requested medications while others did not. Several paramedic

participants informed MFW employers of the concerning mental health struggles they observed

among isolating MFWs. There was variability in terms of MFW employers’ level of concern and

involvement with the healthcare and wellbeing of their MFWs. One participant said:

“Some [farmers] were really good and some were not and some you could tell really care

about their MFWs and some were just like oh well, it is what it is, right? Like here they

are, go swab them kinda. And some were like with them the whole time and like okay,

this is such and such, like it was very farmer dependent I found.”

One participant described the employers as easy to work with and said that they facilitated the

testing process as necessary. The experiences relayed by one paramedic participant indicated

that some MFW employers chose to maintain distance during COVID-19 testing as an act of

respect for their employees: “Some of the farmers wouldn’t go in with us because they’re like

no, I respect them, I don’t go into their house.” The NP participant expressed that the reliance on

employers to provide health services disempowers the MFWs.

**4.7. Summary**

Participants in this study provided information on the adjustments to their work roles in

response to the current COVID-19 pandemic. They described being in an ongoing state of

transition to undertake additional responsibilities while adhering to new regulations in the

provision of COVID-19 related healthcare for MFWs in Niagara Region. Furthermore,

participants identified how the responsibility of healthcare for MFWs shifted to new health

agencies and organizations, and acknowledged a greater emphasis on the employers of MFWs to

access healthcare services for their employees. In the next chapter, findings from the analysis and

future implications will be discussed.

**5. Discussion**

**5.1. Introduction**

The purpose of this research study was to describe and explore the experiences of

Niagara Region HCWs in managing and preventing COVID-19 among MFWs. Qualitative

descriptive methodology was used for the study and to guide content analysis on minimally

structured, open-ended interviews conducted amongst seven HCW participants. The analysis of

these interviews revealed three themes and eight categories. In this chapter, study findings are

discussed and evaluated using the QD research methodology and Anderson’s Behavioural Model

for Health Services Use and compared with current literature.

**5.2. Adapting to Role Changes**

**5.2.1. Translation Services**

Paramedic participants described their frequent use of formal and informal translation

techniques to communicate with Spanish speaking MFWs. They detailed how Niagara Region

Public Health provided translators to assist with the mass COVID-19 testing at farms and at the

vaccine clinics. The NP and ED participants stressed the importance of arranging for Spanish

speaking translators to assist with communication at vaccine clinics, facilitating the informed

consent process. This is consistent with Ontario’s Health Care Consent Act (1996) which states

that every patient must provide consent that is informed and voluntary prior to receiving

treatment. Informed consent is necessary in ensuring that patient health and safety is protected

and to support every patient’s right to health care decision making.

In a study exploring language barriers and interpreter use in Swiss primary care settings,

most HCPs felt that professional interpreters would be beneficial (Jaeger, Pellaud, Laville &

Klauser, 2019). In the absence of professional interpreters, it was reported that negative

consequences such as inability to provide appropriate patient care and acquiring insufficient

patient history occurred. This primary care work setting is relevant to the current study as CCAT

paramedics performed nonemergent tasks more associated with primary care settings such as

illness screening/testing and vaccine administration. Participants in the current study did not

comment on the credentials or qualifications of the translators provided at the mass testing and

vaccination clinics for MFWs. They did acknowledge that translation services were provided

informally at times by a fellow Spanish speaking paramedic and MFW employers. Similar to the

present study, Jaeger et al. (2019) discussed how the absence of professional translators in

healthcare results in use of “lay interpreters.” In a study exploring the health care experiences of

incarcerated women with limited English proficiency, participants viewed it beneficial to use

informal or untrained interpreters including fellow prisoners and family members (Watt, Hu,

Magin & Abbott, 2018). However, the authors reported that these informal interpretation

practises could result in vulnerability to coercion, loss of confidentiality, delivery of untrained

health advice and errors of interpretation. In the current study, participants described receiving

translation services from other bilingual MFWs and MFW employers. Translation services from

nonprofessional translators should be used with caution as translational errors are more likely to

occur resulting in potentially harmful consequences (Jaeger et al., 2019). These translations are

also susceptible to loyalty conflicts and socio-cultural taboos. In a study exploring implications

for informed consent materials translated from English to Spanish, researchers concluded that

translators should possess knowledge of both languages that goes beyond the “textbook,” and

should understand how sociocultural factors specific to an individual can influence

understanding (Brelsford, Ruiz & Beskow, 2018). In this sense, translations provided by fellow

MFWs or employers could be beneficial due to their insider knowledge of the unique MFW

situation. it is unknown whether the translators provided by Public Health were briefed on the

unique contextual factors pertaining to the MFW population.

Employer-provided translation for MFWs accessing health care services has been

established both prior to and during the COVID-19 pandemic, along with the associated

implications including confidentiality infringement, barriers to treatment and even employer

retaliation (Colindres, Cohen & Caxaj, 2021; Caxaj, Cohen & Marsden, 2020; Hennebry,

McLaughlin & Priebisch, 2016). In current findings it is significant that participants perceived

employer translation as beneficial and described it as employers “going out of their way” to help

MFWs and paramedics. This is consistent with findings from Cajax et al. (2020) in which it was

found that clinicians sometimes consider MFW employers as suitable translators. The

researchers attributed this to a lack of awareness among clinicians of the power imbalance

favouring employers that MFWs face when accessing healthcare.

Study participants described using other informal methods of translation to communicate

with MFWs during smaller scale COVID-19 testing – Google Translate, hand symbols, cue cards

and counting were mentioned. There are contrasting results on the effectiveness and preference

for online applications such as Google Translate for the translation of health care information. A

systematic review investigating the implications of language barriers in healthcare acknowledged

the practicality of virtual translation tools including Google Translate compared to live

interpreter services, as they resulted in less associated health service costs and decreased

appointment times (Al Shamsi, Almutairi, Al Mashrafi, Al Kalbani, 2020). One participant in the

present study affirmed this perspective, describing the translation services provided at mass tests

as time consuming. Al Shamsi et al. (2020) recommends that Google Translate be further

updated to include additional medical phrases for translation. Another study evaluating virtual

applications for language translation determined that only two applications, CALD Assist and

Talk to Me were considered highly suitable for healthcare settings (Panayiotou et al., 2019).

Both were designed specifically for healthcare settings and utilized pre-set phrases within the

scope of everyday clinical conversation. Each application contained a disclaimer about its

limitations and urged the use of a professional interpreter for more complex matters or when

otherwise possible. Google Translate does not match any of these standards. In a study exploring

use of CALD Assist among nurses and non-English speaking patients in a clinical setting, 93%

of nurses and 86% of patients reported improved communication through use of the application

(Silvera-Tawil et al., 2021). Nurses received training on the application one week prior to its

implementation. In the absence of an interpreter, a significant decrease in frustration was

reported among nurses that used CALD Assist to communicate with non-English speaking

patients. Given the evidence, the CALD Assist application may have been more effective than

Google Translate at providing translation services for paramedics and MFWs. It should be

considered whether CALD Assist can be implemented for paramedics in future work situations

necessitating translation with a patient in the absence of an interpreter.

A resource called Cue Cards was developed by Eastern Health’s Language Services

Department to assist HCWs and patients with translation amid limited English proficiency

(Eastern Health, 2022). The pack contains a series of cue cards, each displaying a picture and the

associated word. Individuals select the card that best represents their message. Cue Cards

contains 11 subcategories such as Basic, Instructions and Medical, with over 200 cards

developed for each language. This resource is currently available in 69 languages. Paramedic

participants in the present study developed a less formalized cue card resource to facilitate the

COVID-19 symptom assessment of MFWs in the absence of translators and as an alternative to

Google Translate. As translators and devices for virtual translation applications were not always

readily available during MFW testing, a more formalized cue card resource could be beneficial.

**5.2.2. Personal Protective Equipment**

The Government of Canada (2021c, 2021d) recommends that all HCWs providing direct

care to patients with active or suspected COVID-19 wear a well fitted N95 or equivalent

respirator, eye protection, gowns, and gloves for transmission protection. The four CCAT

paramedic participants in this study reported that the revamped ambulance they operated from

was sufficiently stocked with necessary PPE. They described adhering to correct PPE usage

during every direct patient interaction, which comprised of gowns, gloves, eye protection and

powered air purifying respirators (PAPRs). High PPE demands among HCWs at the start of the

COVID-19 pandemic resulted in international shortages, which required the maximization of

current PPE as well as alternative methods of protection (Bauchner, Fontanarosa & Livingston,

2020; WHO, 2020). To proactively prevent PPE shortages, PAPRs were utilized by the CCAT

paramedics. A PAPR is a respirator that uses a fan to filter out air contaminants and delivers

clean air through a battery-operated blower (3M, 2022). They are available in a variety of

headgear and facepiece options. The Occupational Safety and Health Administration (2009) uses

a grading system called Assigned Protection Factor (APF) when determining the workplace level

of respiratory protection that a Class of respirator is expected to provide. In evaluating the

effectiveness of PAPRs compared to the commonly worn N95 respirator, PAPRs were assigned

an APF of 25 to 1000 depending on the model, and the N95 respirator was given an APF of 10.

Although the specific model used by the CCAT is unknown, it is certain that these paramedics

had greater respiratory protection by wearing the PAPRs.

The trialing and usage of PAPRs in healthcare settings amid the COVID-19 pandemic is

well documented (Mausz, Jackson, Lapalme, Piquette, Wakely & Cheskes, 2022; Moldoff,

Eubank, Feng, Corrales & Shin, 2021; Weiss et al., 2021; Chen, Lim, Ong, Wong & Kong, 2020;

Bharatendu et al., 2020; Canadian Society of Otolaryngology Head & Neck Surgery, 2020).

Participants in this study emphasized the communication difficulties imposed by the PAPRs.

Several paramedics explained that the blowing air produced by PAPRs made it difficult to hear

and be heard. This challenge was compounded by the pre-existing language barriers with

Spanish speaking MFWs. One participant identified PAPR usage as the biggest barrier they

encountered to healthcare provision for MFWs. Several studies have shown how PAPR usage

among HCWs can significantly deteriorate hearing abilities (Moldoff et al., 2021; Weiss et al.,

2021). To overcome this, Weiss et al. (2021) developed a solution in the form of an ear-in

headset worn by PAPR users. This was shown to significantly improve the hearing abilities of

those wearing a PAPR. The challenge of overheating while wearing PAPRs outdoors was

mentioned by one participant in the current study. No literature exploring the usage of PAPR

units outside was available. PPE should be optimized for HCWs to ensure sufficient respiratory

protection while also considering user comfort and ease of use (McCarthy, Gino, d’Entremont,

Barari & Renouf, 2020). User comfort is certainly of priority in the given context for HCWs, as

they were required to spend hours outside in the summer months to conduct COVID-19 testing

while wearing layers of clothing and PPE in addition to the PAPR unit.

 The CCAT displayed appropriate PPE preservation by only requiring the paramedic

collecting COVID-19 tests to apply full equipment. Participants informed that the second EMS

participant, referred to as the “clean” person, did not engage in patient care and maintained

physical distancing so they did not need to wear a PAPR or full PPE. This rationale reflects

recommended practices and usage of PPE for HCWs (The Government of Canada, 2021d).

Adherence to correct PPE application, “donning” and removal, “doffing” is critical for HCWs to

protect themselves from COVID-19 transmission (Yuan, Chen & Xu, 2020; Chughtai, Chen &

Macintyre, 2018). While paramedic participants did not explicitly describe their steps of PPE

donning and doffing, they did explain how doffing took place either at the back of the ambulance

or outside of it. The back of the ambulance was maintained as the “dirty” area and was where

garbage containers for discarded PPE were stored.

**5.2.3. Virtual Healthcare**

The three study participants employed at the CHC described the quick transition from

in-person to virtual healthcare delivery for MFWs in response to the COVID-19 pandemic. This

shift to virtual healthcare occurred on a global scale in a variety of healthcare settings to prevent

COVID-19 transmission (Laur et al., 2022; Glazier et al., 2021; Hutchings et al., 2021;

Mohammed et al., 2021; Quinn, Olajide, Green, Sayed & Ansar, 2021; Koziatek et al., 2020;

Spelman et al., 2020). Pre-existing programs offering health services prior to the COVID-19

pandemic had to transition, and new virtual programs to manage the care of patients were

developed. Virtual healthcare was delivered using both telephone and video methods that were

developed including telephone calls, video calls and messaging methods, and several

videoconferencing applications such as WhatsApp, Zoom and other private telehealth platforms.

Two participants in the current study described their experiences using WhatsApp, Zoom and

telephone encounters to provide MFWs with COVID-19 and primary health care services

throughout the pandemic. The CHW participant reported frequent use of WhatsApp to deliver

health promotion services to and to inform them that CHC health services were still available

virtually during the pandemic. The NP participant also described primarily using WhatsApp to

conduct virtual video visits with MFWs. This significant reliance on WhatsApp during the

pandemic to conduct virtual health care has been described in the literature. A study conducted

by Shambu et al. (2021) in India found that WhatsApp was the most frequently used virtual

method of communication between health care providers and patients for the monitoring of oral

anticoagulant usage during the pandemic. Seventy four percent of these patients were extremely

satisfied with virtual care and eighty two percent reported they would be extremely satisfied to

continue virtual care even post-COVID-19. The implementation of WhatsApp to conduct virtual

healthcare with Spanish speaking patients has also been discussed. A report by Behbahani et al.

(2020) shares the experiences of medical and nursing student volunteers in their initiative to

provide COVID-19 information and health care services to a vulnerable Latino immigrant

community in the US. These volunteers acted as virtual telehealth patient navigators, using

WhatsApp to communicate with Latino patients and provide individualized guidance including

symptom evaluation and triaging for COVID-19 testing or additional medical help. In a research

paper discussing telehealth improvement for Latinos (Anaya, Hernandez, Hernandez & Hayes-

Bautista, 2021), the authors describe how Latinos, a historically vulnerable patient population in

terms of health care access compared to English speaking patients, benefit from utilizing

telehealth platforms which they are already familiar with rather than having to adapt to other

unfamiliar platforms. The authors indicate that the Latino population makes frequent use of

WhatsApp and so they encourage using this platform to communicate with Latino patients and

connect them with telehealth services. Both participants in the current study reported limited use

of the videoconferencing application Zoom with MFWs for virtual healthcare provision. The

CHW participant said this was due to navigational challenges and poor internet connection

experienced by MFWs.

Differing opinions were expressed in the current study regarding the ease of transition,

effectiveness and long-term implementation of virtual healthcare for MFWs. The CHW

participant emphasized the benefits they perceived to virtual healthcare provision for MFWs.

They explained how it allowed them to address MFW health concerns earlier, as virtual meetings

could be scheduled quicker than in-person appointments. This is due to the limited availability

and transportation options for MFWs. The CHW participant also highlighted the effectiveness of

virtual healthcare for long-term usage beyond the COVID-19 pandemic. In a study evaluating

HCP experiences conducting virtual antenatal clinic appointments, 67% of participants felt that

virtual clinic visits were easy or very easy to adapt to, and 93% felt virtual clinic visits should

continue long term (Quinn et al., 2021). A study by Mohammed et al. (2021) conducted among

primary care physicians and nurse practitioners in Southwestern Ontario found that over 74% of

participants were highly satisfied conducting virtual visits and 88% of participants believed they

could be incorporated into their regular workflow.

The NP participant in this study presented the challenges they experienced conducting

virtual clinic appointments with MFWs, citing limited patient access to technology, poor internet

connection and difficulty communicating through a translator. In a study exploring virtual health

visits throughout a large American health system, it was found that Spanish speaking patients

were less likely than English speaking patients to use video versus telephone visits (Rodriguez,

Betancourt, Sequist & Ganguli, 2021). The authors partly attributed this to limited technology

access and called for policy initiatives to narrow this “digital divide,” the gap between those who

can and cannot access and meaningfully utilize technology. The ED participant in the current

study also commented on limited phone access for MFWs, and described how the SAWHP

repurposed old cellphones in attempt to overcome this. The challenges of conducting interpretive

services through virtual care have been discussed elsewhere. Syrian refugees in Canada found it

challenging to connect their interpreter and physician over the telephone for appointments

(Cameron, 2021), and pediatricians and pediatric subspecialists reported that the appropriateness

for telehealth consultations are reduced by the need to use an interpreter (Ray, 2022).

**5.3. Navigating Regulation Changes**

**5.3.1. Isolation Regulations**

The paramedic participants in this study observed various isolation locations for MFWs

throughout Niagara Region including bunkhouses, hotels and occasionally rented trailers.

Bunkhouses with varying degrees of size and layout were described. Paramedics questioned the

effectiveness of bunkhouse isolation at preventing COVID-19 transmission, as they often saw

many MFWs living in one bunkhouse and sharing communal kitchen and bathroom spaces. In a

paper exploring barriers to the implementation of at-home isolation for COVID-19 prevention in

low- and middle-income countries, the authors acknowledge that isolation adherence assumes

access to personal space (Coetzee & Kagee, 2020). They recognize that the proximity in which

people from these countries typically live in can make isolation difficult, even impossible.

Guadagno (2020) analyzed the effects of the COVID-19 pandemic on migrants and identified

that their often overcrowded living environments may prevent them from practising social

distancing. The relocation of MFWs between different isolation settings following COVID-19

exposure or suspected infection was described and doubted by paramedic participants in this

study. They felt that relocation of symptomatic MFWs from bunkhouses to hotels was not

sufficient, as the remaining MFWs had still been exposed and so were at risk of infection and

transmission.

Paramedic participants preferred hotel isolation of MFWs because they felt this method

was more effective in protecting MFWs from acquiring and transmitting COVID-19 compared to

bunkhouse isolation. They also acknowledged the ease to conduct testing in hotels as they said

that room-to-room testing was more organized and allowed for greater efficiency. However,

these participants also strongly voiced their concerns for MFW mental wellbeing and safety

during hotel isolation. Issues included MFWs’ boredom, inability to communicate with family

members and other MFWs, inadequate food and inaccessibility to the outdoors. The negative

effects of isolation measures for COVID-19 prevention on migrant working populations’ mental

health compounded by a lack of social support is well documented (Srivastava et al, 2021;

Kumar, Mehra, Sahoo, Nehra & Grover, 2020). In a study exploring the experience of MFWs

diagnosed with COVID-19 and isolated in large-scale quarantine facilities in Singapore, it was

found that the lack of sunlight and access to fresh air were most distressing for the workers (Yee

et al., 2021). These MFWs were provided with internet connectivity and prepaid calling cards to

facilitate communication with their families, which they depended on for support. Internet and

telephone access is essential for individuals in quarantine to ensure accessibility to social support

and COVID-19 related information (Brooks et al., 2020; Coetzee & Kagee, 2020). Ensuring

access to internet and telephone resources for MFWs in isolation should be a top priority in

future situations. In the present study, the CHC was proactive within their means at addressing

health concerns of isolating MFWs including mental health issues. But as several studies

identify, addressing the mental health struggles of individuals in quarantine should be a top

priority (Yee et al., 2021; Brooks et al., 2020). Care that is tailored to servicing the mental health

struggles of MFWs in isolation should be made readily available, such as a telephone support

line staffed by HCWs proficient in providing mental health support.

Caring for MFWs in hotel isolation clearly evoked a deeply empathetic response among

paramedic participants. They described these MFWs as “caged animals,” “sitting in a jail cell”

and expressed feeling “heartbroken” for them. In a study by Liu et al. (2020) exploring the

experiences of HCWs that provide care to patients with COVID-19, additional challenges to care

provision including witnessing the patient experience was identified. HCWs described

experiencing emotional distress and grief for patients and their families. This is similar to the

emotional experience of paramedic participants in the current study. In a scoping review

exploring altruism among paramedics, the value of the empathetic response among paramedics

providing patient care is emphasized (Parker, Prior, Van Dam & Edwards, 2022). Paramedic

participants in the current study detailed their efforts to provide encouragement and positivity for

hotel isolating MFWs by engaging them in conversation and assisting with their cellphone setup.

Liu et al. described how HCW participants recognized the psychological problems that could

arise from isolation and so they prioritized offering emotional support to their patients (Liu et al.,

2020).

**5.3.2. Testing Regulations**

The testing methods performed by CCAT paramedics transitioned in response to growing

data available on COVID-19. Paramedic participants described how initially, MFWs were tested

shortly after exposure to a confirmed COVID-19 case. The Centers for Disease Control and

Prevention (2022) urges all asymptomatic individuals to wait at least 5 days after exposure

before testing, as earlier testing can result in inaccurate results. Limited data available on the

COVID-19 incubation and transmission periods resulted in additional resource usage including

the reallocation of the CCAT personnel and supplies to retest MFWs.

Paramedic participants explained how NRPH nurses maintained sole responsibility in

conducting contact tracing of positive cases and determining which MFWs required COVID-19

testing. Paramedics were strictly limited to performing the ordered COVID-19 tests. They

described the decision-making processes as “nurse dependent” and “random,” implying observed

inconsistencies and variability regarding tests ordered and contact tracing measures. These

observations are consistent with findings from a systematic review evaluating the effectiveness

of contact tracing among multiple infectious diseases including COVID-19 (Hossain et al.,

2022). This review highlighted the diversity among contact tracing strategies utilized by HCWs.

It was concluded that additional research is needed to inform best practises for contact tracing to

ensure maximum effect in disease control. Perhaps with improved contact tracing guidelines,

paramedic participants would have observed greater consistency in the decisions of public health

nurses for contact tracing and tests ordered among MFW patients. It is worthwhile to consider

expanding the authority to conduct contact tracing and COVID-19 test ordering to include the

CCAT paramedics. The review conducted by Hossain et al. (2022) also noted that a variety of

personnel were utilized to conduct contact tracing, ranging from non-medical volunteers to

public health specialists. It was determined that contact tracing initiated by HCWs are generally

associated with improved infection control. Several initiatives implemented training programs

for non-HCWs to learn how to conduct contact tracing amid the COVID-19 pandemic (Huda et

al., 2022; Brickley et al., 2021). NRPH nurses accompanied CCAT paramedics to select testing

appointments to conduct contact tracing and order additional testing, which paramedic

participants felt resulted in missed opportunities to slow the spread of COVID-19 among the

MFW community. It is unknown why NRPH nurses did not attend all testing appointments. If it

were due to limited or overburdened NRPH staff, then perhaps reallocating these responsibilities

to the CCAT paramedics would have been a resolution. Other challenges to COVID-19 testing of

MFWs identified by paramedic participants included an overburdening amount of testing

referrals throughout Niagara Region and incorrect requisition forms. These challenges resulted in

extended isolation times for MFWs and additional resource usage as paramedics had to perform

repeat testing of MFWs. Participants were satisfied when NRPH released blank requisition forms

to the CCAT so that they could fill them out with each MFW.

The home COVID-19 self-testing kits that were given to MFWs upon arrival to Canada at

Toronto Pearson airport were challenging to use according to paramedic participants. They

reported that MFWs had difficulty understanding the kit instructions, and limited technology

access prevented them from performing the self-tests. In a study examining the diagnostic

accuracy of nasal self-testing by non-HCW patients, it was found that participants were able to

follow the test instructions to reliably conduct self-testing (Lindner et al., 2021). However, these

participants were required to understand written German or English according to a set language

criterion and a majority had obtained a “higher-level education.” The authors acknowledge the

limited generalizability of these findings to different patient populations. This would certainly

include MFWs given their limited literacy skills, educational background, and English

comprehension. Paramedic participants also described how they were given test requisitions for

MFWs that had already been given the home self-testing kits. This is indicative of redundant

testing services ordered and caused confusion for CCAT paramedics, MFWs and their

employers.

**5.4. Responsibility of Healthcare Services**

**5.4.1. Shared Responsibility**

 Participants in the current study discussed how the newly established work relationship

with NRPH impacted COVID-19 health care provision for MFWs. Participants working for

the CHC and the CCAT acknowledged that prior to the pandemic, they worked independently

from NRPH. This transitioned to working closely on clinical and administrative levels. On a

clinical level, both groups worked cohesively with NRPH staff to detect COVID-19 cases,

manage farm outbreaks and provide follow up care to MFWs with a positive diagnosis. Several

participants reported that this coordination of services benefitted MFWs. However, one

participant referenced several situations when this shared responsibility was challenging. In

one situation, a MFW was given conflicting information regarding their required length of

isolation period. The NP participant used the phrase “too many hands in the pot” to describe this

dilemma of conflicting information from multiple sources. They felt that the shared

responsibility between the CHC and NRPH resulted in the delivery of inconsistent health

information to a MFW. While it is unknown exactly what caused this error, factors for

consideration include the swiftly coordinated and novice working relationship between the CHC

and NRPH as well as unclear provincial rules for COVID-19 management. Both health agencies

had to quickly reorganize their operations in response to novel and rapid COVID-19 outbreaks in

the Niagara Region and among the MFW population. In a partnership developed under such

pressing and unforeseen circumstances, complications are likely to arise. It has been widely

acknowledged that the various regulations for COVID-19 management initiated by the Ontario

government were generally perceived as unclear and even contradictory (Brunet, 2021; Moscrop,

2021; Cheung, 2020). It should also be considered whether the clarity of the isolation regulations

in effect at that time impacted how they were perceived by the CHC and the NRPH.

From an administrative perspective, this new partnership with NRPH granted the CHC

with improved accessibility to MFW employers and other public health units throughout the

province. In addition to managing the COVID-19 outbreak among MFWs in Niagara Region,

 CHC participants felt that the working relationship with NRPH also served to enhance the

long-term accessibility to MFWs and improve the health education available to MFWs

provincially.

**5.4.2. Unclear Responsibility**

 Despite the COVID-19 educational materials that were produced by the CHC and

distributed to the MFW population, CCAT paramedics identified knowledge gaps among MFWs

that resulted in improper PPE usage and isolation measures. What the paramedic participants

perceived as insufficient COVID-19 education availability for MFWs was also considered a

barrier to infection prevention. CCAT paramedics were never informed that this educational

content was being provided to MFWs by the CHC. In interviews, every paramedic participant

recommended that COVID-19 health teaching for MFWs be implemented. Two paramedic

participants even suggested that the CCAT undertake this health teaching, with one participant

expressing frustration that their request to provide educational presentations to MFWs was

denied.

 CHC participants described how their program provided health promotion and COVID-

19 informational videos geared specifically to MFWs. These videos, which were provided as

study artifacts are multilingual and discuss proper isolation measures in detail however they do

not contain educational content on PPE usage in the home or work setting. Paramedic

participants often observed MFWs in their bunkhouses not adhering to physical distancing and

isolation measures and wearing improper or absent face masks. It is unfortunate that the

responsibility of COVID-19 education for MFWs was not made clear to CCAT participants, and

that they did not have the opportunity to report the observed noncompliance with infection

prevention measures to the CHC. Such clarity could have potentially facilitated the CHC to

improve on the COVID-19 educational content to better suit the needs of MFWs. It also could

have helped to ease the frustration among CCAT paramedics advocating for health teaching for

MFWs. It is unknown why MFWs were often observed breaching recommendations for physical

distancing and without proper face masks. It would be beneficial to explore whether they had

access to proper masks, and to learn about the circumstances of the in-person and video

educational presentations. For instance, whether MFWs were obligated and given sufficient

opportunity to watch them may have potentially influenced their ability and willingness for

viewing.

**5.4.3. Employer Responsibility**

CHC and CCAT participants described a collective reliance on MFW employers to

arrange health services for MFWs during the pandemic. These services include scheduling

COVID-19 testing and vaccinations for MFWs as well as providing medications. Although just

one participant disputed this employer responsibility for MFW healthcare, the possible

repercussions are certainly concerning. As discussed earlier in this paper, the dependence on

MFW employers to provide various resources for their employees is longstanding. Associated

implications include increased employer control and MFW vulnerability. Participants described

how the COVID-19 test results and mental wellbeing concerns for MFWs were delivered to their

employers. This insinuates medical confidentiality infringement of MFWs, and as one participant

conveyed, it also discourages empowerment for their own healthcare. But rather than

condemning MFW employers, it must be considered whether they were obliged to assume this

responsibility of healthcare for their employees. The Government of Canada (2020m) declared

that employers must ensure that the health status of isolating MFWs be monitored and provide

their employees with basic living necessities and sufficient COVID-19 infection prevention

measures including hand hygiene supplies and accommodations that allow for physical

distancing. These requirements pertain to the health status of MFWs and may insinuate that

employers are also responsible for the health information and services of MFWs. It should also

be considered who would assume this position of healthcare responsibility for MFWs in place of

their employers. MFWs were observed having limited access to phones, especially those required

to enter hotel isolation immediately upon arrival. Without cellphone access it is extremely

difficult for MFWs to arrange their own COVID-19 testing and vaccination and obtain test

results. As MFWs were isolated without the presence of family or a representing health care

provider, CCAT paramedics had to contact MFW employers to report their concerns for mental

wellbeing.

To relieve the effects of overburdened and transitioning health care facilities amid the

COVID-19 pandemic, the role of patient liaison was introduced in several ICU, hospital in-

patient and palliative care settings (Hughes, Anderton & Taylor, 2022; Mottaghi et al., 2022;

Keen et al., 2022; Lipworth et al., 2021; Shalev et al., 2020). The patient liaison services ranged

from providing clinical updates to families, discussing goals of care, offering emotional support

to patients and families, advocating for unmet patient needs and assisting with patient discharge.

Essentially, they were responsible for facilitating communication between patients, health care

providers and families. A similar work role introduced to the present setting might assist

with promoting MFW advocacy and privacy protection. The patient liaison role could also

alleviate some of the MFW health care responsibilities assigned to employers such as COVID-19

symptom assessment and management, medication provision, organizing and scheduling of

COVID-19 tests and vaccinations and assisting workers with accessing their test results. The

individual assuming this patient liaison role should possess a thorough understanding of the

living and working situation of MFWs and must be capable of navigating the health care system

to overcome the complexities of care accessibility for MFWs. The term “farmer dependent” was

used by one participant to describe the varying degrees of employer involvement in facilitating

and being present for MFW health services. Participants viewed employer involvement as an

indicator of being a considerate and supportive employer. However, those MFW employers that

remained relatively uninvolved in the healthcare of their employees should not necessarily be

viewed unfavourably. One CCAT participant described an encounter with an employer during

testing who refused to enter the MFW bunkhouse as they felt it was disrespectful to enter the

private living quarters of their employees.

**5.5. Recommendations**

The findings from this study provide direction for interventions aimed at supporting

HCWs in the provision of healthcare to MFWs, particularly in unprecedented circumstances

brought on by the COVID-19 pandemic. They also indicate the need for future research

opportunities. This section contains recommendations for health care practises and research.

**5.5.1. Health Care Practises**

Translation services were provided by NRPH to improve the communication between

HCWs in Niagara Region and the Spanish speaking MFWs that they provided care to. Although

the credentials of these hired translators are unknown, there were times when untrained

translators were utilized as fellow employees and MFW employers provided translation services.

Efforts should be made to provide trained translators that have been briefed on the unique

contextual factors of MFWs in Canada. CCAT participants made regular use of the application

Google Translate for translation services however there is evidence that the CALD Assist

application, designed specifically for medical translations, is a more appropriate and effective

application for medical translations in the absence of translator. Application of CALD Assist for

translation between HCWs and Spanish speaking MFWs should be considered. HCWs would

benefit from receiving training on the application prior to real-life use.

PAPRs offer greater respiratory protection than the standard N95 respirators and are an

excellent option for HCWs performing COVID-19 tests on symptomatic or exposed patients.

However, the deficits to auditory capabilities imposed by PAPR units to both the HCW and

patient should be considered prior to use and may compound the effects of existing language

barriers. The use of PAPRs is cautioned in hot temperatures or when wearing multiple clothing

or PPE layers over long periods of time.

 Restrictions imposed due to the COVID-19 pandemic forced the CHC to develop

virtual means of reaching MFWs. The benefit to implementing long-term virtual care for MFWs

was recognized by several participants as it helped to overcome longstanding barriers faced by

this patient population including lack of transportation and extended work hours. However,

barriers to virtual care were also encountered including limited access to technology and poor

Wi-Fi connection. To make virtual healthcare more accessible to the MFW population, their

“digital equity” must be improved. Virtual healthcare may also not be ideal in interactions

where translation services are necessary for the HCW and MFW to communicate.

Consideration for the often overcrowded living conditions of MFWs is essential when

implementing physical distancing and isolation measures for this patient subgroup. While hotel

isolation was introduced as a solution and was favoured among participants conducting COVID-

19 testing, the option resulted in negative consequences on the mental health and wellbeing

of MFWs. This in turn impacted the paramedic participants themselves. The empathetic

response of HCWs that provide care to individuals in hotel isolation should be considered. In

future situations, the implementation of hotel isolation should strive to improve the MFW

experience, or be reconsidered all together. Services for MFWs experiencing mental distress

during isolation should be readily available, such as a telephone support line staffed by HCWs

proficient in providing mental health support.

 There is potential to enhance the CCAT paramedic role by incorporating the skills of

COVID-19 contact tracing and test ordering. Paramedics can employ these skills as they

understand the principles of infection prevention and patient safety. This would improve the

autonomy of the paramedics while also easing the burden on NRPH and its nurses to perform

these tasks. Nursing staff would then have time to focus on coordinating and performing other

aspects of care that are specific to the nursing profession and fall outside of the paramedic scope

including health promotion and education and illness prevention. This role shift would also help

to streamline the process of testing MFWs, as paramedics would be able to fulfill all

responsibilities related to testing during each single visit. To ensure that the isolation periods for

MFWs are not extended beyond the fourteen-day period, efforts should be made to ensure that

adequate personnel are available to perform mandated testing on the set days.

The multiple agencies involved in COVID-19 health care provision for MFWs must

collaborate to ensure that the information shared with MFWs remains consistent. Rules regarding

isolation periods and the wearing of face masks in the home setting should be clear to avoid

misunderstanding. It would be beneficial to inform agency personnel of the services offered at

other involved health agencies. This would allow for feedback and help to enhance current

services.

 The efforts of health organizations in Niagara Region were invaluable to health care

provision for MFWs throughout the pandemic, and collaboration among these organizations was

critical. However, health care was at times fragmented and difficult for HCWs to navigate due to

overwhelming demands and personnel shortages in addition to longstanding health care barriers

experienced by MFWs. Based on study findings, it would be valuable to develop a more

programmed approach to support the health and wellbeing of MFWs.

 One recommendation is the establishment of a committee at the regional level that has

representation and input from key groups including Niagara EMS, the CHC, NRPH, MFWs and

their employers. The proposed role of patient liaison for MFWs could also serve on this

committee to promote cohesiveness and facilitate communication between the involved groups

while advocating for MFWs’ access to care. The emphasis of this committee would be on

collaboration among these groups. Members would seek to acquire a full understanding of the

services available to support MFWs currently and during the height of the pandemic and identify

any challenges to these services. Then, the responsibilities and roles of health care organizations

and personnel can be enhanced and modified as needed to best suit MFW health needs at present

and in the event of another health crisis such as COVID-19. This committee would benefit from

the opportunity to learn the experiences of HCWs that were directly involved in health care

provision for MFWs amid the pandemic.

**5.5.2. Research**

An area in need of continued research is the COVID-19 testing services conducted by

HCWs for MFWs. Evaluation of the translation services provided during mass testing might help

to accelerate testing times and improve the efficiency of testers, thus allowing for a greater

number of patients to be tested. The experiences of MFWs that received testing services from a

HCW wearing a PAPR would allow for a better evaluation of this specific respirator and

determine its effects on translation services and communication in general. Investigation of the

MFW experience utilizing virtual health care methods would be beneficial to study, as well as

the general outcomes associated with the hybrid health care clinics offered by the CHC such as

appointment types, frequency and MFW satisfaction. Exploring bunkhouse and hotel isolation

from the perspective of MFWs firsthand would help to develop a more accurate and

comprehensive description of this phenomenon. An overview of the policies and procedures for

contact tracing and COVID-19 test referrals from NRPH nurses would allow for an accurate

assessment of these processes. Another area for consideration of continued research is the

prospect of a patient liaison assigned to MFWs.

**5.6. Theoretical Framework**

 In evaluation of the studied COVID-19 health care situation for MFWs, the researcher

found it useful to apply Andersen’s Behavioural Model for Health Services Use. Given the

highly unique context of this study it was helpful to practice ongoing consideration for the

contextual and individual characteristics and how they shaped health service measures and

outcomes. The researcher learned about the individual characteristics specific to HCW

participants and took these into account during evaluation. The researcher identified the process

measures used by HCWs throughout different settings of care for MFWs such as COVID-19

transmission prevention in the living quarters, and for those in isolation or quarantine with active

or suspected infection. The researcher developed a rich description of HCWs’ behaviours and

interactions with MFWs to better understand how health and COVID-19 is managed and treated

among this unique patient population.

**5.7. Study Limitations and Strengths**

The data acquired in this study has limited transferability to other health care settings due

to the many specific contextual factors. This study was conducted among HCWs that worked

with the highly unique MFW population amid the novel COVID-19 pandemic. The study was

situated in one geographic area as it focused specifically on Niagara Region, one of many

Ontario regions where MFWs are employed. Findings may not reflect the experiences of all

HCWs such as those working in acute care settings.

The researcher had little control over participant recruitment and depended on referrals

from key informants as well as organizational consent for recruitment. Four out of seven

participants were paramedics which resulted in an emphasis on the paramedic experience

throughout data collection, analysis and discussion. While this benefitted the portrayal of the

paramedic experience in the studied phenomena, it likely overshadowed the experiences of the

ED, NP and CHW participants and should not be considered representative of other individuals

with these same work roles. The data collected in this study reflects the experiences and

perceptions of participants and does not necessarily manifest full validity regarding the COVID-

19 health care situation for MFWs in Niagara Region. Another limitation originates from the use

of audio recorded interviews conducted using the online platform Zoom. It is possible that

potential participants were deterred by the audio recording or virtual meeting components of the

interview. HCWs worldwide have experienced increased levels of burnout in response to high

work demands during the COVID-19 pandemic (Jalili et al., 2021; Nishimura et al., 2021). It is

also unknown if potential participants were overwhelmed by feelings of burnout associated with

their work and chose not to participate.

Study strengths include the researchers’ familiarity with some of the systems in place for

MFWs in Ontario, having attended several community engagement meetings in Leamington

which focused on enhancing community integration of MFWs. Another strength of this study is

the timing as it was launched following the second growing season to take place amid the

pandemic. Study findings may therefore be richer and enhance understanding of the health needs

of MFW as it is informed by the experiences of 2020 and new health information that has

emerged since then. Findings are relevant as this pandemic is continuing and may inform

practice during future similar situations.

**5.8. Knowledge Translation**

The researcher intends to share a summary of study results with any interested health

agency or organization that requests a copy. The participation of Niagara EMS and CHC HCWs

is paramount to this study and so the researcher will share results by whichever methods suit

their convenience and preference. Possible methods include an in-person or online presentation

and a summary report sent by email or fax. The researcher will also share study results with

Niagara Region Public Health and other public health units that are in areas with MFW

populations. This will be accomplished by email. The researcher will continue to monitor if and

when the MFW community engagement meetings in Ontario resume so that results may also be

shared with the various community groups and members in attendance. The Work, Migration

and Health Forum is an event which takes place annually in Ontario and explores the labour

experiences of several marginalized groups including MFWs. Should the forum be held in 2023,

the researcher will apply to present study findings at this event. A journal publication is also

planned.

**5.9. Conclusion**

Findings from this study provide insight into the experiences of HCWs in managing and

preventing COVID-19 among the MFW population in Niagara Region. The results identify

various work adjustments that HCWs incorporated into their work to better care for MFWs such

as utilization of PPE, translation services and virtual healthcare delivery as well as the

development of new partnerships between organizations. Their ability and willingness to

advance their practice was evident through the administration and coordination of COVID-19

testing and vaccination, and the ongoing assessment of COVID-19 symptoms for MFWs.

Although caring for the MFW population was a new experience for many participants, their

dedication to the safety and wellbeing of MFW patients was evident in the stories and experience

they shared.

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**Appendix A: Email Script**

Hello *(recipient name),*

My name is Talya Tovar, I am a registered nurse and a graduate student at McMaster University. I am currently completing a research project as a requirement for my program. As a *(recipient job type)* with the *(recipient work department)* of *(recipient employer),* I would like to request your assistance recruiting potential participants for my study. I will provide you with a brief description of my study and its intended purpose below.

COVID-19 is a newly discovered virus that is considered a serious health threat both in Canada and globally. Higher rates of COVID-19 have been reported among the migrant farm worker population in Niagara Region and migrant farm workers face unique home and work challenges while in Canada that increase their risk of getting COVID-19. The purpose of this study is to explore the experiences of individuals who are involved in the management and prevention of COVID-19 among migrant farm workers. This study aims to develop an accurate description of the COVID-19 situation among migrant farm workers in the local community. I am interested in the experience of health care workers in preventing or managing COVID-19 among migrant farm workers at the workplace and in living quarters. I want to learn about the methods used to prevent MFWs from getting COVID-19, as well as how they are diagnosed with it and then cared for. Preventative measures might include physical distancing, isolation and quarantine measures in place as well as vaccine administration. This knowledge may help to improve COVID-19 prevention measures and quality of care for migrant farm workers.

This study will be conducted in Niagara Region with an estimated 10 participants.

Consenting participants will be asked questions about their experiences through an individual interview that will take approximately 45 minutes to 1 hour. The interview will take place through video conferencing using the Zoom application. Participation in this study is on a voluntary basis.

I would greatly appreciate it if you could send the attached study flyer to appropriate health care workers including nurses, inspectors and managers for study recruitment. If you feel that individuals with job-types other than those specified are appropriate for study inclusion, I fully encourage you to send the study flyer to them as well. I am also interested in obtaining permission to attach my study flyer to any electronic bulletin board or newsletter that is administered to your staff for communication and engagement. If you have any questions regarding my study or would like to discuss it more in detail, I welcome the opportunity to continue email correspondence or to meet with you via telephone or videoconference.

Thank you,

Talya Tovar, RN, MSc Student

tovart@mcmaster.ca

519-996-4306

**Appendix B: Study Flyer**



Are you involved in the management or prevention of COVID-19 among migrant farm workers?

Study Seeks Experiences of Health Care Workers

For more information on this study please contact Talya Tovar, RN at 519-996-4306 or tovart@mcmaster.ca

What is this study about?

High rates of COVID-19 have been reported among the migrant farm worker population in Niagara Region. This study seeks to learn about the experiences of health care workers in preventing or managing COVID-19 among migrant farm workers.

Why participate?

You may help to improve infection prevention programs and health care for migrant farm workers. Participants will be compensated with a $20 Starbucks gift card.

What does participation involve?

One individual interview lasting 45 minutes to 1 hour.

This study has been reviewed by the Hamilton Integrated Research Ethics Board under project #13450

**Appendix C: Letter of Information and Informed Consent**



Letter of Information

The Experiences of Health Care Workers in Managing and

Preventing COVID-19 Among MFWs in Niagara Region, Ontario

**Student Investigator:** **Investigator’s Research Supervisor:**

Talya Tovar Dr. Olive Wahoush

Department of Nursing Department of Nursing

McMaster University McMaster University

Hamilton, ON, Canada Hamilton, ON, Canada

Phone: 519-996-4306 Phone: 905-525-9140 extension 22802

E-mail: tovart@mcmaster.ca E-mail: wahousho@mcmaster.ca

**Introduction**

My name is Talya Tovar, I am a registered nurse and a graduate student at McMaster University. I am doing this research for the thesis component of my program.

**Purpose of the Study**

COVID-19 is a newly discovered virus that is considered a serious health threat both in Canada and globally. High rates of COVID-19 have been reported among the migrant farm worker population in Niagara Region. These workers face unique home and work challenges while in Canada that increase their risk of getting COVID-19. The purpose of this study is to explore the experiences of health care workers who deliver and organize COVID-19 related health care for migrant farm workers. This study will be conducted in Niagara Region among an estimated 10 participants.

I hope to develop an accurate description of the COVID-19 situation among migrant farm workers in your community. I am interested in your experience preventing or managing COVID-19 among migrant farm workers. I want to learn about the methods used to encourage migrant farm workers to practice physical distancing in their living quarters and/or at work. I am

interested in learning about the processes for vaccine administration among migrant farm workers. I also want to learn how migrant farm workers with COVID-19 are diagnosed and cared for. This knowledge can help to improve COVID-19 prevention measures and quality of care for migrant farm workers.

**Procedures involved in the Research**

I will ask you questions about your experiences in a one-on-one interview that will take approximately 45 minutes to 1 hour. The interview will take place through the videoconferencing platform Zoom. I will also ask you some background questions about your job responsibilities and employment history. With your permission, the interview will be audio-recorded however this is not a requirement.

**Potential Harms, Risks or Discomforts:**

The risks involved in participating in this study are minimal. There is a risk that you may share some personal or confidential information by chance, or that you may feel uncomfortable talking about certain topics. You do not need to answer questions that you do not want to answer or that make you feel uncomfortable. At any point during the interview, you can stop to take a break. You can also stop the interview at any time. I describe below the steps I am taking to protect your privacy.

**Potential Benefits**

The research will not benefit you directly. I hope that what is learned through this study will help to provide better infection prevention and management measures for migrant farm workers amid the current or future pandemics. Improvements in physical distancing measures and COVID-19 care for migrant farm workers can hopefully be achieved. For your participation, you will be compensated with a $20 Starbucks gift card.

**Confidentiality**

Every effort will be made to protect your confidentiality and privacy. I will not use your name or any information that would allow you to be identified. However, we are often identifiable through the stories we tell, please consider that in your responses. Your participation in this study will not be shared with your manager or health unit administration.

Interviews will take place through videoconference using the Zoom platform, which is an externally hosted cloud-based service. A link to their privacy policy is available here https://explore.zoom.us/trust/privacy. While the Hamilton Integrated Research Ethics Board has approved using the Zoom platform to collect data for this study, there is a small risk of a privacy breach for data collected on external servers. If you are concerned about this please let me know, as I would be happy to make alternative arrangements for you to participate, perhaps via telephone. You are kindly asked to not make any unauthorized recordings of the interview.

I will assign your interview with a study number to replace your name. This information will not be shared with anyone else. Your study number will be kept private in a secured electronic storage drive. Audio recordings of your interview will also be stored in the secured electronic storage drive. Your interview information will only be kept for a maximum of three years or until the time of study publishing, when all study data will be deleted from all electronic files.

**Participation and Withdrawal**

Your participation in this study is voluntary. It is completely your choice whether you wish to be part of the study or not. If you decide to be part of the study, you can decide to stop at any time, even after signing the consent form. If you decide to withdraw, there will be no consequences to you. You may withdraw from the study by contacting the lead investigator, Talya Tovar by phone or email. Information you provide up until the point where you withdraw will be kept unless you request that it be removed. If you do not want to answer some of the questions you do not have to and can omit those questions and can still be in the study.

**Direct Quotes**

The use of direct participant quotes in a thesis report can provide invaluable participant perspectives and enhance the credibility of results. Any direct quotes used in this thesis report will be de-identified as much as possible to protect your privacy however complete anonymity cannot be guaranteed. You can consent to the use of your direct quotes below, or you may choose not to consent now thus indicating that you want the researcher to request your consent for specific quotes after the interview has been conducted.

**Information about the Study Results**

I expect to have this study completed by approximately December of 2021. If you would like a brief summary of the results, please let me know how you would like it sent to you.

**Questions about the Study**

If you have questions or need more information about the study itself, please contact me or my research supervisor at:

Talya Tovar

tovart@mcmaster.ca

519-996-4306

Dr. Olive Wahoush

wahousho@mcmaster.ca

905 525 9140 extension 22802

This study has been reviewed by the Hamilton Integrated Research Ethics Board (HiREB). The HiREB is responsible for ensuring that participants are informed of the risks associated with the research, and that participants are free to decide if participation is right for them. If you have any questions about your rights as a research participant, please call the Office of the Chair, HiREB, at 905.521.2100 x 42013.

**INFORMED CONSENT**

I have read the information presented in the information letter about a study being conducted by Talya Tovar of McMaster University. I have had the opportunity to ask questions about my involvement in this study and to receive additional details I requested. I understand that if I agree to participate in this study, I may withdraw from the study at any time. I agree to participate in the study. I consent to my interview being audio recorded. I consent that I will not make any unauthorized recordings of the interview. I will be given a signed copy of this form via email.

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

*Name of Participant* (Printed) Signature Date

Consent for audio recording: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 Signature Date

Consent for direct quotes: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 Signature Date

Consent form explained by:

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

*Name and Role* (Printed) Signature Date

**Appendix D: Interview Guide**

**Introduction**

Thank you for taking the time to participate in this study. The interview is estimated to last 45 minutes to one hour. As a reminder, you can withdraw from this study at any point if you wish to do so. I would like to confirm if this is still a good time for the interview? Do you have any questions before we begin? While it may be difficult, I kindly ask that you refrain from using patient identifiers when discussing specific migrant farm workers, such as their names or workplaces to maintain patient privacy.

I will start by asking you some pre-interview questions to learn more about your background.

Pre-Interview Demographic Questions

1. What is your current job title?
2. Describe some of the basic responsibilities that come with your current job.
3. How long have you held this job?
4. How many years have you worked with MFWs?

We will now transition into the actual interview portion in which questions are more specific to your work with MFWs.

**Interview Questions**

 Main Questions

1. How has your work role changed since the COVID-19 pandemic?

2. Can you tell me about your experiences providing/managing COVID-19 related care for MFWs in their workplace/living quarters?

- Do you know how MFWs are informed of the various restrictions related to COVID-19 upon arrival? What is your level of involvement?

- What has been the degree of interaction between you and employers and/or their representatives?

3. Please describe a specific occasion when you provided/managed care for MFWs in isolation/quarantine or diagnosed with COVID-19?

4. Do you feel that MFWs are given the opportunity/sufficient resources to practice social distancing and hygiene measures?

5. What do you find is the most challenging aspect of your work with MFWs throughout the COVID-19 pandemic?

6. What have you most enjoyed during your experiences working with MFWs throughout the COVID-19 pandemic?

7. How has working with MFWs with COVID-19 affected your personal life, outside of work?

Probing Questions

1. Could you describe your experience(s) of \_\_\_\_\_ in greater detail?

 2. Why do you think this is the case?

 3. Do you have further examples of \_\_\_\_\_\_?

4. What changes do you suggest to improve this?

Specifying Questions

1. What did you think then?

2. How did X react to what you said?

This concludes my questioning portion of the interview. Before we wrap things up, is there anything else that you think I should know or that you would like to share?

**Closing Remarks**

Thank you for your time and willingness to participate in my study – I am truly thankful that you made this interview a priority. As much as I wish this interview could have taken place in person, I do appreciate your willingness to participate virtually through Zoom. As a reminder, you can withdraw from this study at any point if you wish to do so. If you are interested, I will email you my analysis of this interview and you can send me any feedback you have including whether you feel my analysis accurately reflects your experiences.

**Appendix E:** **Description of Study Participant Jobs**

A nurse practitioner is a registered nurse with additional education and experience

(Canadian Nurses Association, 2022). They possess autonomy to diagnose and treat illnesses,

order tests, prescribe medications and perform medical procedures in a variety of healthcare

settings.

A community health worker (CHW), as defined by Community Health Workers Network

of Canada (n.d.) enhances health care accessibility for vulnerable populations and advocates for

their health and wellbeing. CHWs perform a variety of nonclinical tasks depending on their

location and the population they serve. There is no standardized certification or education

required for this position, but rather on-the-job training specific to the work setting (WebMD,

2021).

The executive director (ED) role most often refers to a leadership position in a non-profit

organization (Downey, 2020). EDs work with a board of directors to perform strategic planning

with limited financial resources.

The position of paramedic is further categorized to the two distinct positions of primary

care paramedic and advanced care paramedic. Differences between these two positions are

outlined in Ontario Regulation 257/00 under the Ambulance Act (Government of Ontario, 2021).

Essentially, the job title of advanced care paramedic authorizes the use of additional controlled

acts and requires completion of an additional training program. Paramedic participants clarified

that in their provision of COVID-19 healthcare to MFWs, the work responsibilities were the

same regardless of whether they were an advanced or primary care paramedic. So, the term

*paramedic* as used in this study encompasses both advanced and primary care paramedic

participants.

 **Appendix F: Behavioural Model for Health Services Use**

 Contextual Characteristics Individual Characteristics Health Outcomes

 Behaviours

Personal Health Practises

Process of

Medical Care

Use of Personal

Health Services

Perceived Health

Evaluated Health

Consumer Satisfaction

Quality of Life

**Predisposing Enabling Need**

 Demographic Financial Perceived

 Genetics Organization Evaluated

 Social

 Beliefs

**Predisposing Enabling Need**

 Demographic Health Policy Environmental

 Social Financing Population

 Health Indices

 Beliefs Organization

*Note.* This figure represents a conceptual framework and emphasizes the importance of focusing on patient contextual and individual determinants when attempting to improve their access to care. From “Changing the US health care system: Key issues in health services, policy and management” by E. F. Kominski, in “Chapter 2: Improving Access to Care” by R. M Andersen, P. L. Davidson and S. E. Baumeister, 2013, p. 35.