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Running Head: NURSES' PERCEPTIONS OF DUTY DURING A PANDEMIC

Public Health Nurses' Perceptions of Duty during an Influenza Pandemic: A Qualitative Study

By Janice Tigert Walters

A thesis submitted in partial fulfillment of the

requirements for the degree of

Master of Public Health

Lakehead University

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Approved by:

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Professor Elaine Wiersma

Chairperson of the Supervisory Committee

Thesis Committee

Professor Glenna Knutson	Lakehead University
Professor Karen Poole	Lakehead University
Professor Susan Jack	McMaster University

Program Authorized to Issue Degree: _____

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Definitions

Antiviral	A medication that inhibits or suppresses the replication of a virus.
Duty to Care	A professional's obligation to care for a person in need despite personal risk or sacrifice required.
Fit tested	A test designed to measure the seal (fit) of an N95 mask to a specific health care provider to assure a 95% filtration of particles.
Infection Control	Practices used to reduce the transmission of infectious organisms from one person to another.
Morbidity	State of illness or disease - a departure from well-being.
N95 masks	A mask that fits tightly around the nose and mouth and filters particles up to 95%. It must be fit tested to the health care worker for maximum protection.
S-OIV A/H1N1	A novel influenza A virus that had not been seen prior to 2009. It causes typical influenza symptoms/disease but severe disease and complications have been reported in some cases.
Pandemic	An epidemic of disease that occurs over a large area (crossing international boundaries) and affecting many people.
PPE	Personal protective equipment - refers to protective gear used to protect the health care worker from infectious agents. Can be any combination of masks, gowns, goggles and gloves.

Public Health Nurse (PHN)	Registered nurses trained in community/population health.
Reassort	Ability to change makeup (in this paper this term is used for the ability of the influenza virus to change it's genetic makeup and the ability of a public health nurse to reconstruct her identity)
Relenza	One choice of an antiviral. The brand name for the drug Zanamivir. This is an inhaled medication that inhibits the spread of influenza A or B and reduces the symptoms
Tamiflu	One choice of an antiviral. The brand name for Oseltamivir, an oral medication that inhibits the spread of influenza A or B. It can also decrease the symptoms of the infection.

Abstract

For this study, a grounded theory qualitative design was used to explore public health nurses' perceptions of their professional duty to care during a severe influenza pandemic or an infectious disease outbreak where there would be some degree of personal risk. This study examined their underlying personal values, beliefs and morals as well as their professional ethics and understanding of a duty to care. This research was specifically interested in the conflicts they anticipated experiencing between their personal female care-giving roles and family responsibilities (female identity) and their professional nursing obligations (professional identity).

A purposeful sample of twenty-two public health nurses from five Ontario health units were interviewed using an open-ended semi-structured questionnaire. A theoretical framework was developed from the prevalent themes that emerged during the data analysis. A grounded theory is offered for how public health nurses develop their self-identity from a core, female and professional identity and how their self-identity can "reassort" over the course of their lives based on situational influences. The self-identity that is dominant in a nurse at the time of a public health crisis will affect her perception of duty. Public health nurses will be significant human health care resources during a severe influenza pandemic or any public health crisis involving an infectious disease. This study offers important information on identity construction for employers, governments and policy makers to consider as they plan for future pandemics or other outbreaks to ensure the strongest public health nursing response when needed.

Chapter 1: Introduction

Influenza pandemics have occurred three times in the twentieth century: 1918, 1957 and 1968 (Glezen, 1996; Smith et al, 2009). The 1918 Pandemic known as the "Spanish Flu" killed twenty to forty million people worldwide and has been described as "one of the most dramatic events of medical history" (Potter, 2001, p. 575). Any future pandemic has the potential to be just as severe. Following the completion of data collection for this study, a novel strain of influenza with pandemic potential emerged and was announced to the world in April 2009. On June 11, 2009, the World Health Organization declared a pandemic because of the novel virus's ability to spread. Although novel, the severity of the virus was similar to seasonal influenza (Petrosillo, Di Bella, Drapeau & Grilli, 2009). On October 23, 2009, the Ministry of Health and Long-Term Care (MOHLTC) of Ontario announced the second wave had arrived and scientists believe the potential for subsequent waves exist (Michaelis, Doerr & Cinantl, 2009). Even if the impact of the novel S-OIV A(H1N1) proves to be minimal, the threat of a future severe influenza pandemic or another public health disaster from an infectious disease persists (Krau & Parsons, 2007).

In preparation for a severe pandemic, the MOHLTC of Ontario had instructed public health units to prepare a local pandemic plan that would ensure an effective public health response and minimize the health and social impact. The Ontario Health Plan for an Influenza Pandemic (OHPIP) (MOHLTC, 2008) indicated a number of key roles public health nurses would have as responders. These roles included working at mass immunization and antiviral clinics, influenza assessment clinics and possibly alternative treatment centres (MOHLTC, 2008). In a pandemic or another infectious

disease outbreak, each of these roles has the potential to place public health nurses in direct contact with infectious members of the public and to increase their risk of being exposed to a life-threatening disease.

Purpose of the Study

The purpose of this qualitative study was to develop and present a theoretical framework that offers insight into how public health nurses perceive their professional duty to care and how that duty could be affected by personal considerations during an influenza pandemic. This study used face-to-face, in-depth interviews of the participants to explore the conflict public health nurses have between their belief in a professional duty to care and the competing needs of their personal roles, responsibilities and obligations. It has identified what underlying fears public health nurses have and how these fears, if not addressed, could impact their professional duty to care by interfering with their ability or willingness to come to work or stay at work during a pandemic.

This study explored how public health nurses felt about the roles that have been assigned to them in the OHPIP (MOHLTC, 2008) and determined their willingness and ability to report to work during a pandemic or another infectious disease outbreak and to assume these roles. The OHPIP (2008) predicts that during an influenza pandemic, 25–35% of the workforce may be affected by illness and unable to work. Public health nurses are the largest group of health professionals in the public health workforce, accounting for almost one-third of total public health human resources (Naylor, 2003). It is important that the MOHLTC and their employers understand the conflict public health nurses could experience between their professional duty and personal responsibilities, and how this conflict may interfere with their assigned pandemic roles and their

willingness to report for duty. Findings from this study will inform pandemic planners, public health units and the Ontario government of factors that will influence public health nurses' perception of duty and their willingness and ability to report to work during a pandemic or outbreak. Failure of public health nurses to report for duty would interfere with the province mounting a strong and effective public health response.

The theoretical framework I offer was developed from the prevalent themes uncovered through the data analysis and indicates the important areas for action and policy development for ongoing pandemic planning and disaster preparedness.

Research Questions

Four research questions guided this study: 1) What are public health nurses' beliefs, attitudes, values and opinions about nursing and their professional duty to care?; 2) What are the factors that will influence their duty to care during a pandemic?; 3) How does being female in a female-dominated profession influence these factors?; and 4) Might a public health nurse's concept of duty to care differ from that of another health professional, and if so, how and why?

Situatedness

The research questions and the subsequent methodology were shaped by my personal experience with this topic through my nurse management position in public health, my personal experience with the SARS outbreak and my knowledge and experience with pandemic planning and infectious diseases. Being a public health manager (and previously a public health nurse) with traditional female roles (wife, mother, daughter), I was interested in understanding how nurses perceived their professional 'duty to care' and how this duty might be affected during a pandemic.

Through my experience of developing my organization's pandemic plan, I had heard different discussions by nurses debating their duty to report to work in a pandemic and articulating specific limits for themselves. Their comments and questions encouraged me to reflect on my own sense of duty. My personal reflection helped me recognize that there are possible limits to a nurse's duty to care and motivated me to explore this as an important research topic. Lawson (1995) and Parse (2001) believe that research is shaped by the complex world and experiences of the researcher and that those same influences shape the interpretations of the findings. I was interested in this research because of the connections I had to the topic and because of my own professional and personal need to know more. As Parse (2001) explains, "the researcher is inextricably connected with the research and the project is marked with the researcher's uniqueness" (p. 4).

In this study, the concept of duty to care was presumed to be expressed by the nurses' willingness or intent to report to work and continue to work during an influenza pandemic, despite health and safety risks as well as personal sacrifices. It examined public health nurses' beliefs about their own professional and ethical duty to care during an infectious disease outbreak, where their sense of duty came from and whether they felt there were any limits to their nursing duty.

The need for this study was supported by existing gaps found in the literature. This research study focused on a group of health care professionals who had not been well studied as emergency responders during public health disasters (O'Boyle, Robertson & Secor-Turner, 2006). In a severe influenza pandemic — a true public health crisis — public health nurses will be considered instrumental for an effective

response. The concept of a nurse's duty to care has been poorly defined in the literature (Bensimon et al., 2007; Voelker, 2003) and particularly in the context of an infectious disease outbreak, when there can be a significant personal risk to the health care worker. A constructivist-grounded theory approach (Charmaz, 2006; Creswell, 2007; Mills, Bonner & Francis, 2006; Strauss & Corbin, 1998) was used for this study. The qualitative data-collection method used was an in-depth semi-structured interview (see Appendix A). This research contributes a theoretical framework that predicts a public health nurse's commitment to her duty to care during an influenza pandemic and can be applied to other infectious disease outbreaks. This framework will be of benefit to government policy makers and health care administrators responsible for emergency preparedness and contingency planning for their organizations. It is important that the findings are considered and mitigation strategies for identified areas of weakness are incorporated into response plans. Planning that has considered these findings will make it easier for public health nurses to respond during a disaster and strengthen their commitment to duty by addressing current barriers, fears and stressors.

Chapter 2: Literature Review

The idea for this research study began with a simple question, "Will [female] public health nurses show up for duty during an influenza pandemic"? My literature search began with topics related to the formal research questions I developed. I conducted searches using the keywords: nursing ethics, occupational health and disease, disaster response, duty to care, pandemics, pandemic planning, influenza, avian influenza and SARS. A review of this literature determined that caring, duty to care and perception of duty were important concepts to my study. I extensively reviewed literature related to disasters and infectious disease outbreaks and health care workers' perceptions of duty during these types of events to gain a better understanding of these fundamental concepts. The extensive literature review was important to support my research proposal and provide justification for my study (McGhee, Marland & Atkinson, 2007).

I used Google Scholar and PubMed to broadly search for literature and find journal articles, abstracts, major papers and publications on ethics, duty to care, refusal to work, disaster response and pandemic planning.

To locate the full text articles I used computerized commercial databases that could provide scholarly journals and that were available through Lakehead University. When I found relevant articles, I listed key words that were noted by the articles and reviewed the reference sections to find other related articles and cross-disciplinary studies.

Additional key words used included: caring, caring theory, job stress, work refusal, health and safety, maternal behaviour, feminism, personal protective equipment, public health nursing and pandemic H1N1.

The data analysis and the identification of themes that is inherent in the methodology, made it important to review additional literature as the theoretical framework emerged. Literature related to the emerging theory was integrated into the discussion section.

The Next Severe Pandemic Influenza

Scientists have agreed for some time that the world is overdue for its next severe influenza pandemic (Glezen, 1996; Hseih et al., 2006; Webby & Webster, 2003; Webster, 1997). Until it arrives, no one can predict with certainty how severe it will be or which age groups will be adversely affected (Kilbourne, 1997). However, experts have agreed that most people will be susceptible to the virus, a vaccine will not be available for several months after the strain has been identified, and with current travel trends, the virus will circle the globe quickly, return in successive waves, cause social chaos and overwhelm health care services (Fauci, 2006; Glezen, 1996; Levin, Gebbie & Qureshi, 2007; Ontario Health Plan for an Influenza Pandemic [OHPIP], 2008). Previous influenza pandemics in 1918, 1957 and 1968 had high rates of morbidity and higher than normal mortality (Hseih et al., 2006; Kilbourne, 1997). Any future pandemic has the same potential for severity and could pose a serious personal risk for health care workers and their families (Draper et al., 2008). How public health nurses will respond during a severe pandemic or another infectious disease outbreak should be predictable

and if it is not, action is needed now to introduce measures that will ensure a strong and reliable response.

In the last decade, the world has experienced three novel viruses and each had the potential for global disaster: SARS, avian influenza (A/H5N1) and most recently, swine origin influenza virus H1N1 (S-OIV A/ H1N1). Although these novel viruses did not progress to cause a real global disaster, the threat has not entirely disappeared.

Avian Influenza

Since 2003, there have been 444 human cases and 262 deaths from avian influenza (A/H5N1), which have occurred in fifteen countries (World Health Organization [WHO], November 27, 2009). This constitutes a mortality rate of 59% for this virus. The emergence of the A/H5N1 strain of influenza with its high mortality rate placed the likelihood of a severe pandemic at Stage 3 on the World Health Organization's (WHO) six-point pandemic scale (WHO, 2008). WHO's Stage 3 acknowledges that human infections with a new subtype of influenza have occurred but rare human-to-human spread has occurred (Sellwood, Asgari-Jirhandeh & Salimee, 2007; WHO, 2008). This lack of human-to-human spread has spared the world from a pandemic disaster (Krau & Parsons, 2007).

S-OIV A/H1N1

In April 2009, the world was alerted to an emerging novel influenza A virus (S-OIV A/H1N1) that started in Mexico. Within months, despite control measures, the virus spread and on June 11, 2009, the World Health Organization declared it a full pandemic — Stage 6 (WHO, 2009). The novel virus was characterized by efficient human-to-human spread and had occurred in three different countries within two WHO

regions; therefore, by WHO's definition, a global pandemic had started (Retrieved July 3, 2009 from, http://www.who.int/csr/disease/avian_influenza/phase/en/). Although it met the criteria needed for a pandemic designation, the lack of severity of the disease provided some reassurance to the world. In June 2009, the Lancet reported that we had "dodged a bullet" (Shetty, 2009, p. 339). Reported deaths associated with the new virus were low. It had an estimated fatality rate of 0.4%, making it less lethal and with a lower attack rate than the Spanish Flu of 1918–19 (Komaroff, 2009). However, scientists and health officials are not confident that the threat has passed. In 1918, when the pandemic strain first presented, it was mild, but when it rolled back in the winter months, it was significantly more lethal (Komaroff, 2009).

SARS, avian influenza A/H5N1, S-OIV A/H1N1 and years of advanced warning of a severe pandemic have provided opportunity for training and preparedness. Poor planning and lack of preparation by organizations and governments will not be well tolerated by health care providers who are expected to respond on the frontlines.

The planning assumptions contained in the OHPIP (MOHLTC, 2008) have given public health officials much to consider as they prepare their local influenza pandemic response plans. The population will have no immunity to a new virus, similar to what was experienced with the recent S-OIV A/H1N1 and there may be an illness attack rate of up to 35%. All population groups will be affected by the high mortality and morbidity rates of this virus, and almost one third of deaths will occur in the population under the age of sixty-five. A pandemic influenza virus will spread primarily in the community (MOHLTC, 2008) making it a real threat to public health responders. The plan outlines various roles that public health employees may be assigned to during a pandemic

including mass immunization and prophylaxis clinics (MOHLTC, 2008). Public health nurses may also have a significant role in flu assessment and treatment centres (MOHLTC, 2008). All identified roles will put public health nurses face-to-face with carriers of the virus and increase their personal risk.

Antivirals (Relenza and Tamiflu) are medications that can be used for prophylaxis to prevent influenza illness and its complications (Labonte & Seidah, 2008). The OHPIP (MOHLTC, 2005) identified groups that were given priority for antiviral prophylaxis and included frontline health care workers, key decision makers, remaining health care workers, and emergency and essential workers (MOHLTC, 2005). In June 2007, the *Pan-Canadian Public Health Network Council Report and Policy Recommendations on the Use of Antivirals for Prophylaxis during an Influenza Pandemic* (Pan-Canadian Public Health Network) was released and concluded that the widespread use of antivirals during a pandemic was not justifiable. The government of Ontario adopted this recommendation and in the 2008 version of the OHPIP plan, there were no longer any provisions for prophylaxis for health care workers. The new plan stressed that the federal and provincial stockpiles of antivirals are designated for treatment doses only during a pandemic (MOHLTC, 2008). With the S-OIV A/H1N1 outbreak in 2009, antivirals were released from ministry stockpiles for treatment doses only.

With the appearances of new infectious diseases this decade that have had high mortality rates, such as Severe Acute Respiratory Syndrome (SARS) (2003) and avian influenza A/H5N1, and with the emergence of an influenza pandemic with S-OIV A/H1N1 or the prediction of another more deadly strain, health care workers are

becoming increasingly concerned about their own safety and that of their families (Dwyer & Tsai, 2008; Stuart & Gillespie, 2008; Tzeng & Yin, 2006). Historically, public health workers have not been thought of as first responders for a disaster. Public health had an important and very visible role during the SARS outbreak in 2003, but staff were able to remain at a safe distance from individuals infected with SARS. The Naylor Report (October, 2003) concluded that public health plays a key role in disaster response and that the public health system in Ontario must be strengthened to support this role. During the SARS outbreak, the personal health and well-being of public health workers or their families was not directly threatened, but during an influenza pandemic, the potential for health workers to be exposed to this disease can be much greater (Draper et al., 2008; Gardem et al., 2007; Levin et al., 2007). The threat of a severe influenza pandemic has been predicted for years, making it unlike other disasters, which have not given responders time to consider their personal risk or options. Public health departments have been involved with pandemic planning for almost a decade, therefore public health nurses have had time to become familiar with the grim predictions of a pandemic and consider what their personal risk may be if they show up to work. They have had time to reflect on how responding to a pandemic could interfere with their other personal roles and adversely affect their families. This study was needed to identify the important factors that will affect a public health nurse's perception of duty and her ability and willingness to report for duty during a public health disaster, specifically a pandemic. It has indicated areas where mitigation strategies are needed to ensure the most effective response. With a pandemic or another infectious disease outbreak where there is a high attack rate, further loss of available human health care

resources would create even more challenges in containing the outbreak. Information learned in advance of the next public health disaster can help planners and policy developers introduce strategies or legislation that will decrease public health nurses' fears and help them manage their professional and personal roles and responsibilities (Levin et al., 2007). Advance informed preparation will ensure a better health care response to the next public health infectious disease threat when it arrives.

Occupational Health Threats from Infectious Diseases

Infectious diseases like cholera, typhoid, smallpox, hepatitis B and C, HIV, tuberculosis, ebola and many others have always been an occupational risk for health care workers (Alonson-Echanove et al., 2001; Chanda & Gosnell, 2006; Hewlett & Hewlett, 2005; Prus-Ustun, Rapiti & Hutin, 2005; Sepkowitz, 1996; Sepkowitz & Eisenberg, 2005). Despite the risk, occupational death rates from infectious diseases for health care workers have not been well-studied (Sepkowitz, 1996; Sepkowitz & Eisenberg, 2005).

During the outbreak of SARS in 2003, health care workers were among the hardest hit, accounting for 21% of SARS cases reported worldwide (Dy, 2006). In Ontario, of the 247 probable cases of SARS that occurred, 108 (43%) were in health care workers (Campbell, 2004). Two Ontario nurses were infected and died from the disease while caring for affected patients. One of the nurses who died also infected her son and husband, and her husband also died from the infection (West, 2003). A study following SARS found that household contacts were at a significant risk for SARS, with a secondary attack rate of 10.2% for housemates (Wilson-Clark et al., 2006). Therefore, many health care workers were forced to be quarantined or isolated due to their

exposure to the infection (Rankin, 2006). The SARS outbreak was hard on health care workers worldwide and in some cases strained the trust relationship between the employee and the employer in health care settings (Maunder et al., 2003; Shiao et al., 2007; Tzeng & Yin, 2006). The Ontario Nurses' Association (ONA) was publicly critical of the government for its lack of preparation for a public health crisis and for allowing the nursing shortage that existed in the province at the time (Rankin, 2006; Walker, 2003). Three reports released following SARS — *For the Public's Health: Initial Report of the Ontario Expert Panel on SARS and Infectious Diseases* (Walker, 2003), *Learning from SARS: Renewal of Public Health in Ontario* (Naylor, 2003) and *The SARS Commission Interim Report: SARS and Public Health in Ontario* (Campbell, 2004) — were all critical of the lack of overall preparedness. They found that human resources, communication strategies and technological resources were all inadequate. One of the harshest criticisms was captured in a quote from the Campbell Report (2004): "SARS showed Ontario's Central Public Health System to be unprepared, fragmented, poorly led, uncoordinated, inadequately resourced, professionally impoverished, and generally incapable of discharging its mandate" (p.118). In contrast, the reports praised the extraordinary efforts of all the people that worked to contain SARS. Health care workers were described as heroes for continuing to provide quality care despite their personal risk. Although heroic efforts were demonstrated by many health care workers, it is important to note that there were workers who refused to work and failed to report to duty because of their fear of the disease. Several health care workers who refused to work were dismissed by their employers (Sibbald, 2003; Sokol, 2006; Ruderman et al., 2006). Was this an unreasonable fear? The Walker Report (2003) found that

occupational health and safety played little or no role during this infectious disease outbreak. The SARS outbreak highlighted serious deficiencies in infection-control programs and staff training, as well as in this area of education.

The literature review on occupational exposures to infectious diseases leads to one of the key questions addressed by this research. Is there a limit to a nurse's professional duty to care for clients/patients when there is a significant personal risk? If there is a limit, who decides what the limit is and how is this communicated and made clear to the health professionals involved? Health care workers refused to work in the face of uncertainty again in 2005, when public health employees were asked to investigate a respiratory outbreak at Seven Oaks Home for the Aged in Toronto. Multiple patient deaths had occurred at this facility before an organism could be identified (Retrieved, Nov. 28, 2008, from http://www.q-et.net.au/~legion/legionnaires_disease.toronto.htm). Fearing the unknown and not knowing what reasonable precautions should be taken, some public health staff refused to go on-site to investigate (HANDIC Conference, 2006). The Walker Report (2003) stressed that occupational health and safety needed to be a priority in conjunction with infection control for all future outbreaks. Yet, little advancement has been made in this area for public health organizations. Where hospitals and other health care organizations have occupational health nurses and physicians, many public health units do not.

Health care professionals and their professional associations are expecting more from employers and the government, especially in the area of occupational health and safety. Under Ontario's *Occupational Health and Safety Act*, 1990, (Part V, 43–3b), employees can refuse work that may endanger their health and safety. Tomczykma et al.

(2008) suggest that as part of emergency plans, organizations have an ethical and legal responsibility to plan to care for their caregivers. Kotalik (2005) also argues that health care facilities have a strong obligation to protect their workers, which includes stockpiling antivirals and personal protective equipment. However, at the provincial and federal levels, the decision about providing health care workers prophylactic doses of antivirals has already been decided and this one means of protection will not be offered to health care workers during a pandemic (MOHLTC, 2008). The SARS outbreak stunned health care organizations and revealed many weaknesses in Ontario's health care system, especially in its ability to protect its own workers (Campbell, 2004; Naylor, 2003; Silas, Johnson & Rexe, 2008; Walker, 2003). In the final report of the Ontario Expert Panel on SARS and Infectious Disease Control, (Campbell, 2004) the foreword stated:

> We have taken the time to look back and learn what we believe are the key lessons from SARS. In this Final Report, we look forward and provide the remaining components of what we see as a blueprint for strengthening our health care system, and our ability to respond to emerging health risks and future emergencies. We do so with humility and with an acknowledgement of the magnitude of the challenges ahead. We also do so in the firm belief that a change will happen and that the positive legacy of SARS will be that of a warning heeded. (p. 5)

Six years have passed and many studies and reports have been released that were dedicated to understanding what happened in SARS and to provide recommendations for system improvements. This current study suggests that if there were a test today similar to SARS, the infection control practices and occupational health systems in place would be no better at protecting health care workers.

Nursing and Feminism

Nurses in various settings, including public health, have a professional duty to care. The word *nursing* evolved from the Latin root word for *nurture* — *nutrire* — while the word *nurse* comes from the Latin noun *nutrix*, meaning nursing mother (Breier-Mackie, 2006; Hilton, 1997; Okafor, 1990). The common view of nursing, for many, is that it is women's work and is subordinate to medicine (Hilton, 1997; Melchior, 2004; Rafferty, 1995). Hilton's (1997) review of the literature found eight epistemological perspectives of nursing: "vocation, women's work, caring, science, interpersonal process, art, therapeutic intervention, humanistic art and science" (p. 1212). However, because of these different perspectives, it has not been universally accepted that nursing is a profession with its own scientific knowledge base and important contributions (Bonell, 1999; Rafferty, 1995). The fundamental epistemological assumptions and philosophical basis of nursing as a profession have been wide and varied, and a common understanding of nursing as a profession has never been developed. In particular, nursing lies at the intersection of art and science in that while clinical medicine — and the science of clinical medicine — is an important part of nursing, so is the art of caring (Darbyshire, 1999; Rose & Parker, 1994).

The female gender has dominated the nursing profession throughout its history and the image of nursing has been largely defined by female roles, values and characteristics (Fletcher, 2006; Hallam, 1998; Hoffman, 1999). Nursing was not acknowledged as a profession until Florence Nightingale developed specialized nursing knowledge and used it to care for injured and ill soldiers during the Crimean War

(1854–56) (MacDonald, 2001; Tan & Holland, 2006). Many historians believe that Nightingale demonstrated feminine qualities and characteristics in her work while others consider her a feminist because of her pursuit of a career over marriage (Holliday & Parker, 1997; Selanders, 1998). From the beginning, Nightingale viewed nursing as a separate profession from medicine and made significant contributions to specialized nursing knowledge, hospital design and infection-control practices (Holliday & Parker, 1997; Tan & Holland, 2006). Although the profession of nursing has evolved since Nightingale, it continues to be held back by the hierarchal, autocratic and paternal influences of both the male-dominated health care system and male-dominated medicine (Cook & Web, 2002; Fletcher, 2006; Hoffman, 1991). Nursing continues to be viewed as subservient to medicine rather than complementary (Anderson, Monsen, & Rorty, 2000; Melchior, 2004). The image of nurses as physician 'helpers' has prevented nursing from achieving status in the health care system. Many believe nursing is based on an ideology of women's duty to care, making it difficult to embrace feminist ideals (Fletcher, 2006; Kane & Thomas, 2000). The handmaiden view of nursing has created an uncomfortable relationship between nursing and feminism. For feminists, the profession of nursing acquiesces to a subordinate female role and contradicts what feminists have fought for: equality and recognition. Feminists are critical of women who choose traditional careers such as nursing instead of pursuing a higher-status male-dominated profession. Kane and Thomas (2000) suggest that feminist theory has been hidden within nursing since Nightingale herself. Nightingale never openly supported feminist activities but in her own way pursued equal rights, and her role in advancing nursing to a profession is viewed by some as a feminist accomplishment (Selanders,

1998). However, many continue to view nursing as a gendered profession and an "extension of women's domestic and familial activities" (Fealey, 2004, p. 654). Many of the issues that nurses face today are rooted in the historical oppression of nursing by the male-driven health care system. Others believe nursing has never achieved full professional status or the recognition it deserves because it is a female-dominated profession. The failure of nursing to advance and achieve full professional status has been further delayed by nursing leaders who have had interrupted careers and advancement because of family responsibilities including childrearing (Adams, 2003; Kane & Thomas, 2000). The obstacles faced in the struggle to advance nursing as a profession are the same struggles that will be faced by nurses during a pandemic. Female domestic roles and caregiver responsibilities at home have prevented many nurses from pursuing career advancement and fully participating in professional activities. These domestic roles are the same roles and responsibilities that nurses will have to consider when a pandemic strikes and their profession requires them to be available for duty. Women are normally considered the primary caretakers of children in our society, although in recent years, caretaker roles and responsibilities for many women have been extended to include grandchildren and elderly parents (Gary, Sigsby & Campbell, 1998).

It is difficult to suggest with certainty what public health nurses' responses to a pandemic or another public health disaster will be. Nursing has been an important part of previous disasters and war responses (Groft, 2006). A historical review of the nursing response during the 1918–1919 influenza pandemic found that it was heroic (Gribble, 1997). Many married and retired nurses answered the call to their nursing duty and left

behind families to provide care to individuals in need. Some married nurses who returned to work lost their lives and never returned to their families. The question is, can we expect the same from nurses practicing or retired today?

Nursing and Caring

Prior to being recognized as a profession, nursing was seen as a woman's calling or vocation, which required selfless caring (Lewis, 2003). Over the years, the profession of nursing has been intrinsically tied to the concept of caring. One of the most recognized images of nursing is the picture of Florence Nightingale walking among injured soldiers, carrying her lamp and stopping to give care and comfort where it was needed (Brooks, 1993). Nightingale, who was considered the founder of the nursing profession, reinforced the sacred relationship between nursing and caring through the development of personal policies like never letting a man die alone (Brooks, 1993).

For many nursing scholars, caring is considered the heart of nursing practice (Dunlop, 1986; Kapborg & Bertero, 2003; Morse, Solberg, Neander, Bortorff & Johnson, 1990; Saewyc, 2000; Spichiger, Wallhagen & Benner, 2005). Caring as a concept is difficult to define and perhaps even harder to explain. Hudacek (2008) suggests that, "caring is the core of nursing. It is the unifying focus of nursing practice; the reason nurses garner the public's trust and support; and an instinctual, natural part of the work" (p. 126).

Nursing scholars have presented theories with caring as the central component including Leininger (1978), Watson (1979) and Swanson (1991, 1999) (Dunlop, 1986; Spichiger, Wallhagan & Benner, 2005). Over the years, two distinct streams of nursing

knowledge and theory development have been accepted. The first is the theory of Caring Science (CS) and the second is the theory of the Science of Unitary Human Beings (SUHB) (Watson & Smith, 2002). Scholars have noted that these two distinct streams of nursing knowledge and theory actually have commonalities, including caring as an ethical and moral foundation (Watson & Smith, 2002).

Morse et al. (1990) found that among nursing scholars, there was no agreement on the definition of caring. They were, however, able to organize the concept of caring into five distinct categories: a human trait, an effect, an interpersonal interaction, a therapeutic intervention and a moral imperative. As a human trait, caring is seen as part of being human and as such, all humans are caring. This human trait allows people the ability to relate to others in their world (Cortis & Kendrick, 2003). Therefore, caring is not necessarily exclusive to the profession of nursing because it is a human trait. Caring as an effect is viewed as an emotional response, which is grounded in feelings of empathy and compassion. It is these feelings of empathy and compassion that nurses direct to the patients receiving their care (Cortis & Kendrick, 2003). Caring as an interpersonal interaction is seen in the mutual relationship that is established between the nurse and the patient (Dyson, 1996). The nurse provides caring but caring is also returned to the nurse from the patient. Caring as a therapeutic interaction is seen when the nurse provides specific actions as part of a plan that is goal-oriented and results in positive change for the patient (Cortis & Kendrick, 2003; Dyson, 1996; Lea & Watson, 1996). Finally, caring as a moral imperative is rooted in the fundamental and universal human values, which demand a commitment to care for and the moral requirement to act when a fellow human being is in need (Lavoie, DeKoninck & Blondeau, 2006). The

moral duty to provide care to a person in need will be the very basis of the dilemma that nurses will be faced with at the time of a pandemic. With thousands of people affected by the virus and in need of care, the moral obligation to respond will be impossible for a nurse to ignore (Gastmans, 1999; Lavoie et al., 2006).

Although the concept of care is difficult to define, it is clear that Canadian society expects caring from nursing professionals and this expectation will not be diminished during a pandemic or another public health crisis. Roach (1992) recognized five attributes of caring in nursing: compassion, competence, confidence, conscience and commitment (cited in Picard, 1995). Compassion can be described as an understanding and awareness of another person's experiences and realities. It is the ability of the nurse to be present emotionally as well as physically for the patient (Hudacek, 2008). Competence requires a combination of knowledge, skills and ability to help a patient effectively. Commitment requires the nurse to persevere and follow through to provide care even when it is personally challenging. It is the drive nurses have to provide care for the patient even under difficult conditions (Picard, 1995). Conscience refers to nurses' awareness of moral and ethical issues and doing what is right even when the choice is difficult (Picard, 1995). Confidence suggests the nurse strongly believes that the care being provided is what the patient needs and will make a difference (Picard, 1995).

Conscience and commitment are the two attributes of caring that will be tested the most during a pandemic. Pinch (1996) explains the paradigm of care that is central to nursing science will become a moral trap for nurses during a pandemic (cited in

Voelker, 2003). During this type of disaster, the moral trap may contribute to nurses' feelings of being overwhelmed, without choice and burned out.

Nursing Ethics

The profession of nursing in Ontario is regulated by the College of Nurses of Ontario (CNO), which determines the standards of practice for its members. *The Nursing Act* (1991) and the *Regulated Health Professionals Act* (RHPA) (1991) provide a legal framework for the scope of practice, quality assurance and self-regulation of nursing (CNO, May 2008). The CNO has developed a practice standard on ethics to guide nurses in ethical decision-making. One component of this ethical standard is Maintaining Commitments to Clients (CNO, 2008):

> Nurses, as self-regulated professionals, implicitly promise to provide safe, effective and ethical care. Because of their commitment to clients, nurses try to act in the best interest of clients according to clients' wishes and standards of practice. Nurses are obliged to refrain from abandoning, abusing or neglecting clients and to provide empathetic and knowledgeable care. (p. 9)

This CNO practice standard on ethics does not address specific situations such as continuing to work during an infectious disease outbreak (Ruderman et al., 2006). The professional expectation that nurses will report to work and continue to work during a disaster is not specifically addressed in the CNO's practice standards. An ethics document released by The Canadian Nurses Association (CNA) (2008) addressed nursing ethics during an infectious disease outbreak stating, "During a natural or human made disaster, including communicable disease outbreak, nurses have a duty to provide care using appropriate safety precautions" (Code, A 8, p. 46). However, the CNA document suggested that the ethical duty may be excused if ". . . there is an

unreasonable burden on the nurse which includes lack of resources or ongoing threat to personal well being" (CNA, 2008, p. 46).

In 2007, the CNA released a position paper on emergency preparedness and response that emphasized the critical role nurses play in an emergency. This position paper cautions all levels of governments to abide by the health and safety laws and principles as well as the precautionary principle to ensure the safety of nurses and reduce their risk while responding during an emergency. It seems that the Canadian Nurses Association has given notice that without appropriate safety measures, nurses are not compelled to respond.

Although the Canadian Nurses Association and the College of Nurses do not explicitly suggest an absolute ethical duty to work during a disaster, several American groups have set out their expectations for nurses and other health professionals. An ethics document prepared by the Central Ohio Trauma System (2003) stated:

> The World Medical Association holds that physicians and nurses must address the health and life of patients above other considerations . . . . Healthcare workers and support staff have an ethical duty to report to work during a disaster situation, even if their own lives are threatened by doing so. (p. 1)

Others suggest that by belonging to a self-regulating profession, nursing owes society a commitment to respond when needed as payment for the privilege of being self-regulating (Schroeter, 2008). Harris and Holm (1997) believe there are different arguments for why some occupations are obliged to work, even when there is a great personal risk, which include legal, professional and moral reasons. The legal argument believes that there is an obligation for a worker to abide to a signed contract. By signing an employment contract, there is a legal duty to accept the risks associated with his occupation or profession. The professional argument believes that by the virtue of

belonging to a profession and having special privileges accorded to the profession, there is an obligation to work when needed as part of that professional group. The last argument is the moral argument, which is rooted in the strongly held human value of helping another person in need. Helping another in need is morally required even when helping may put the rescuer at risk (Harris & Holm, 1997). In the case of nursing, the moral obligation is presented as it is "because of their special skills and knowledge, nurses would be obligated to help people and assume the risks involved" (Harris & Holm, 1997, p. 628).

However, Bensimon et al. (2007) found that the continuum for health care professionals' beliefs in duty ranged from an absolute duty to legitimate limits including personal obligations and personal choice. Godkin and Markwell (2003) in a paper submitted to the SARS Expert Panel Secretariat highlighted the heroic actions of nurses who refused to abandon their patients. "In the face of fear and isolation, nurses demonstrated incredible commitment to patients, to the health care system and to the profession, even though they recognized personal risk, their duty to care took priority" (p. 4).

Although heroic actions outnumbered refusals to work during the SARS outbreak in Toronto, Godkin and Markwell (2003) emphasized that a better understanding of both ethical values and potential conflicts is necessary before ethical guidelines on duty can be developed for use in future public health emergencies.

Duty to Care

The term *duty to care* is a phrase that is often used in health care but it is not clearly or consistently defined, and is often poorly understood by health care workers

required to consider it as a professional standard (Grimaldi, 2007; Sokol, 2006; Tomlinson, 2008). Schroeter (2008) explains that the concept of duty to care comes from a combination of two ethical principles: beneficence (meaning to do good) and nonmaleficence (meaning to do no harm). The international codes of ethics for nursing standards views nursing duty as an individual responsibility, which is framed by personal values, beliefs and worldviews (International Council of Nurses, 2006; Milton, 2008). If nurses believe that duty to care is an individual responsibility, then it is difficult to predict how public health nurses will respond and whether a reliable workforce will be available during an outbreak. The need to know how public health nurses will respond is essential and clearly supported the need for this research study. Other researchers, like Tzeng (2004), studied nursing professional care obligations and found that nursing care ethics are rarely discussed in the literature.

One argument for an accepted duty is that individuals entering a health care profession understand that it is their responsibility to care for their patients and accept the risks associated with their profession (Bensimon et al., 2007; Reid, 2005; Ruderman et al., 2006). However, others argue that professionals consider the quality of work life and work risk when choosing a career and their choice often suggests they are looking for a better balance between work and home, thus wanting less personal risk attached (Sokol, 2006; Tzeng, 2004). If this is the case, public health nurses who normally work in an office-like setting and have a very small, if any, clinical role may have chosen this specific nursing career to avoid excessive occupational risk. During a typical workday, public health nurses do not attend to the sick, dying or infectious and may not consider the risk of an exposure to a life-threatening infectious disease as part of their profession.

Public health nurses are beginning to question their roles and whether or not they want to participate in disasters where there is a personal risk (Milton & Buseman, 2002).

Most health care professionals have numerous other personal roles and responsibilities in addition to their professional roles (Sokol, 2006). Public health nursing is a female-dominated profession, and as such likely means that public health nurses have many competing roles such as partner, spouse, parent or caregiver. Each of these roles may have its own pressing responsibilities. In some cases, their non-professional roles may take precedence over their professional roles. Sokol (2006) suggested that because of competing roles and responsibilities, there must be limits on duty to care, which should be clearly defined and acknowledged by society. It would be important for the public to understand what these limits are before the next public health crisis.

As a result of the SARS outbreak (2003), avian influenza and threats of an influenza pandemic, researchers have been interested in understanding what health care workers believe is their duty to care during an infectious disease outbreak and how they are likely to respond if their health or their families' health is at risk. Studies have found that the responsibility of duty to care is often left to the individual to define and have determined that there is no agreement on this issue. In a disaster, if there are no clear guidelines and practice standards on this ethical concept, pandemonium may ensue.

Ehrenstein, Hanses and Salzberger (2006) surveyed hospital employees and found of the 644 respondents, 28% felt it was acceptable to abandon the workplace to protect families while another 19% had no opinion. A study conducted in Japan post-SARS found that more than 55% of the health care workers surveyed indicated they

were afraid of SARS and showed 32% would refuse to provide patient care to avoid their personal risks (Imai et al., 2005). Another study of Japanese health care workers found that nurses had the highest level of fear and would consider leaving their jobs in a pandemic (Imai et al., 2008). A study of 6,428 American health care workers conducted by Quershi et al. (2005) found that 21.7% were not willing to work during a severe respiratory distress syndrome outbreak. Mackler, Wilkerson and Cinti (2007) surveyed paramedics and asked whether they would remain on duty if there was no vaccine or protective gear to use during a smallpox outbreak. Eighty percent of the paramedics who responded said they would not remain on duty and only 39% felt they would remain on duty if protective gear was available.

Studies that have examined health care workers' willingness to report to work during an infectious disease outbreak have found that many health care professionals (HCPs) were not willing to work during a pandemic or in another infectious disease outbreak due to the personal risks of infection (Coleman & Reis, 2008; Sokol, 2006; Stuart & Gillespie, 2008). Other studies have determined that HCPs were more willing to work during other types of disasters than during outbreaks or epidemics where there was a threat to their own health (Qureshi et al., 2005). Similarly, Syrett, Benitez, Livingston and Davis (2007) found that health care workers were less committed to their work if the threatening agent was communicable and if treatment excluded their family members. This is the situation that public health nurses will face during a severe pandemic — a communicable disease with a high morbidity and mortality rate with no prophylactic medication offered to public health employees or their families (MOHLTC, 2008). In Toronto, during the SARS outbreak in 2003, one nurse who was concerned for

her children and a vulnerable parent was dismissed by her employer when she sought extra measures to protect herself (Sibbald, 2003; Tzeng, 2004). In a pandemic, many health care workers may feel the same way. Does one's duty to a profession supersede a duty to one's family and to self?

Although the ethical concept of duty to care during a disaster has been studied, most of these studies have looked at physician groups, emergency service workers or acute care hospital staff (Imai et al., 2008; O'Boyle et al., 2006; Qureshi et al., 2005). An American study of public health responders conducted by Balicer, Omer, Barnett and Everly (2006) found that public health responders did not feel bound by duty when facing an infectious disease. No Canadian studies were found, and studies that looked specifically at public health nurses were limited. Many studies that have been conducted were based on recent disasters like 9/11 and SARS or hypothetical disasters of bioterrorism. A severe pandemic influenza is a different type of disaster; it has been predicted by experts for years and is now considered imminent (Chang et al., 2009; Glezen, 1996; Hseih et al., 2006; Webster, 1997; Webby & Webster, 2003). There is an urgent need to develop ethical practice guidelines on duty to care, especially during an infectious disease outbreak. Clearer guidance is needed from the nursing regulatory body (CNO) and the Canadian Nurses' Association. Governmental policy development on this issue is also needed as part of pandemic planning in Ontario (Bensimon et al., 2007; Grimaldi, 2007; Iserson et al., 2008).

Willingness

Public health nurses are a unique class of health care workers and their willingness to work during a public health disaster has not been studied (O'Boyle et al.,

2006). Barnett et al. (2005) suggested that following the 9/11 disaster in the United States, public health workers began to be considered as first responders for disasters. During SARS, public health workers were considered essential responders and had intense work demands put on them. However, they were not directly in contact with carriers of the disease and were at little personal risk for acquiring the infection or bringing it home to their families. In the OHPIP (MOHLTC, 2008), public health is identified as having a key role in pandemic response including staffing mass immunization and antiviral clinics, and possibly having a role at alternative treatment and assessment centres. The OHPIP (MOHLTC, 2008) relies heavily on public health employees and places them in critical roles with major responsibilities during a pandemic. However, little is known about what public health nurses are thinking and if they are willing and able to report to work during this type of disaster. The lack of literature on this health care provider group highlighted that there was an urgent need for research in this area and the development of clear practice standards from nursing regulatory bodies. The literature also identified that there was a need for organizational and governmental policy development in the area of disaster response and scope of professional obligations (Bensimon et al., 2007; Grimaldi, 2007; Iserson et al., 2008).

This review revealed that duty to care is an important issue that has not been well studied in the literature or addressed by the regulating bodies of nursing. The review also found that there is a need to study public health's state of readiness for a disaster, especially an infectious disease outbreak and assess what system improvements have actually occurred since SARS, especially in the province of Ontario.

This study adds to the Canadian literature and provides information specifically on public health nurses' perceptions of duty during a pandemic. It is particularly important because it focuses on public health nurses as a distinct group of health care professionals, not traditionally seen as first responders but who will be a critical resource during a public health disaster. Previous literature that looked at willingness to report to work during a disaster has been based on a hypothetical disaster or an event that has already occurred. During a pandemic or any other infectious disease outbreak, society will be dependent on a strong public health workforce. Therefore, it is important to understand how public health nurses believe they will respond during a pandemic and to learn more about their values, fears, beliefs, opinions and any barriers or competing responsibilities they have that may prevent them from reporting for duty.

Chapter 3: Research Design

Rationale for Using Qualitative Research

A constructivist-grounded theory qualitative research design (Charmaz, 2006) was used for this study. I chose this approach because it allowed me to develop a theoretical framework that was grounded in the data and provided a model for understanding how public health nurses perceive their duty to care and are likely to respond during a severe influenza pandemic or another infectious disease outbreak. The lack of literature on public health nursing behaviour during a disaster or on their perceptions of duty to care supported the use of this research design. Qualitative research allows the research question to be explored from the world views of the participants. A grounded theory method was appropriate to use given the lack of research or theory related to public health nurses and their roles in a pandemic response and the need to understand public health nurses' perceptions and feelings about these roles. This qualitative study design is a popular method used in nursing research (Chiovitti & Piran, 2003) and was well suited for addressing the research questions of this study. Using the constructivist grounded theory approach (Charmaz, 2006) I was able to emphasize "the views, values, beliefs, feelings, assumptions and ideologies of individuals" (Creswell, 2007, p. 65) to generate my theory. Investigating how public health nurses view their professional duty through the overlapped lenses of their professional and female roles made grounded theory an appropriate design for this research.

The research questions I asked in the interviews explored the following: 1) reflections on their nursing careers and their role in public health; 2) how knowledgeable they were about a pandemic and how prepared they felt for responding; 3) what their understanding was of the possible roles that might be assigned to them; 4) their understanding and beliefs about their professional duty to care and other health care professionals' duty to care; 5) their feelings about having competing female roles and obligations; and 6) any additional concerns, fears or thoughts they had about being a responder during a pandemic (Appendix A). The questions were designed to elicit information and address the four primary research questions identified earlier by determining significant factors that would influence their actions during this type of disaster. Issues of importance emerged from the participants' answers, examples and stories shared during their interviews.

Participant Selection and Recruitment

The participants were chosen through purposeful sampling (Creswell, 2007). They were chosen specifically because of their gender, public health nursing status, awareness of influenza and pandemics, knowledge of public health's role in pandemic planning and their ability to speak to the research questions (Creswell, 2007). Participants were chosen based on meeting the following criteria: female, employed as a public health nurse in Ontario, working full or part-time in a program other than the control of infectious diseases and in a relationship with a spouse or partner and/or providing a caregiver role for children, parents or a person of significance. These criteria were used to ensure that the participants could provide rich information on the issues that were central to the research questions of this study (Polkinghorne, 2005).

I began the research with an open mind about the required sample size. I believed the sample had to be large enough to generate rich data on the problem being studied (Tavakol, Torabi, & Zeinafoo, 2006). My plan was to continue to sample until I was confident that no new data was emerging from the interviews and that I had reached theoretical saturation (Strauss & Corbin, 1998; Chiovitti & Piran, 2003). I also believed that my inexperience as a research interviewer might necessitate a larger sample size than what would normally be needed. To collect rich data I felt it was important for the sample to have representation from participants of different ages, with different years of experience in public health, who had different caregiver roles, that were immersed in various public health programs, who worked at different sized health units and that were from urban and rural geographical locations. I believed this could be achieved with a sample size of 10-15 participants but I was committed to interviewing until I was confident no new information was being gathered (Strauss & Corbin, 1998).

To recruit participant volunteers, I contacted key people in other health units who were involved in managing the infectious diseases or vaccine preventable disease programs and had some responsibility for pandemic planning within their organization. I felt that these individuals would be supportive of the research and have an interest in the findings of the study. The contacts were asked to obtain permission from their organizations to have their public health nurses participate in this study. I also asked the medical officer of health for my health unit to promote the study to her colleagues. A signed consent (see Appendix B) was obtained from the medical officer of health or another senior management representative who had signing authority for the organization. Once consent was obtained, I had the key informants actively recruit

volunteers by sending out information about the study by email and/or word of mouth to recruit individual participants. Individuals who expressed an interest in participating in the study were asked to contact me (the researcher) by email or phone to volunteer or seek more information. Interested public health nurses who contacted me were then sent an electronic copy of the cover letter (see Appendix C) and a participant consent form (see Appendix D), which provided more information about the study. If they had additional questions or were willing to participate in an interview, they were encouraged to email or call to arrange an interview time. Snowball sampling (Creswell, 2007) was used at one of the five health units where one of the participants encouraged several of her team-mates to participate. An interview was arranged at the participant's health unit using a quiet and private meeting room that had been arranged through the key contact. Two participants asked to be interviewed at an offsite location for their convenience. The locations of the alternative sites were chosen by the two requesting participants. A small incentive (a twenty-dollar Tim Hortons' card) was offered to nurses that participated in the interview. Two of the five health units that had given organizational consent specifically asked that the incentive not be offered to their participating staff as a condition of their consent.

A large amount of data was generated by the interviews and saturation was felt to be achieved by the twentieth interview. Two additional interviews were completed after this point to ensure no new information was being heard and that saturation had been achieved (Guest, Bunce & Johnson, 2006).

Twenty-two public health nurses were interviewed from five different Ontario health units. The geographical locations of the health units are shown in Appendix M.

Two of the health units were large and belonged to a regional government structure while the other three were smaller rural health units governed by boards of health.

Nineteen of the public health nurses interviewed were married, one was widowed, one was engaged and was to be married in two months and one was recently separated. Twenty of the participants had children, one was two months pregnant and one had no children. Four public health nurses provided care to aging parents or a significant other. One public health nurse was very involved with her young grandchildren. For those that volunteered the information, the length of time that participants had worked in public health ranged from one to thirty-two years. Details about the participants are included in Table 1.

Table 1:

Participants

Number	Pseudonym	Care-Giving Roles	Years in Public Health	Program
1	Anna	Married, four children under the age of eight	Ten years	Healthy Babies-Healthy Children
2	Beth	Married, no children, a dog	Nine years	Healthy Babies-Healthy Children
3	Carly	Married thirteen years, three children under the age of twelve	Twenty years	Healthy Babies-Healthy Children
4	Dara	Married thirty-two years Two adult children	Thirty-three years	Healthy Babies-Healthy Children
5	Ellen	Married, two teenaged children	Not stated	Sexual Health Program
6	Fran	Married, two children under the age of four	Six years	Healthy Babies-Healthy Children
7	Ginelle	Married, two adult children Aging parent and a dependent sibling	Public health x ten years (a nurse for thirty-five years)	Healthy Babies-Healthy Children
8	Hannah	Married, four children under age fifteen	Not stated	Healthy Babies-Healthy Children
9	Isabelle	Married, expecting first child	Not stated	Healthy Babies-Healthy Children
10	Jenny	Married, two adult children	Public health x fifteen years	Healthy Babies-Healthy

			(a nurse for thirty-three years)	Children
11	Kendall	Married with three children under age sixteen Parents live with her	Three-and-a-half years	Healthy Babies-Healthy Children
12	Laurie	Widowed, two adult children Provides care for two institutionalized parents	Twenty years	Reproductive Health
13	Mary	Separated, two teenaged children	Twenty-two years	Healthy Babies-Healthy Children
14	Natalie	Married with four teenaged children	Twenty-two years	Healthy Babies-Healthy Children
15	Olivia	Married, two adult children and grandchildren Provides care for a parent	Not stated	Chronic Disease & Injury Prevention
16	Paula	Married, two children under twenty-one years	Twenty-eight years	Healthy Babies-Healthy Children
17	Ruth	Married, two children under age four	Six years	Healthy Babies-Healthy Children
18	Sarah	Married, infant child	Two-and-a-half years	Healthy Babies-Healthy Children
19	Tryna	Married, three children under twelve years	Five years	Sexual Health
20	Ursula	Engaged to be married	One year	School Program

21	Vivian	Married, two children under nine	A nurse for fifteen years	Healthy Babies-Healthy Children
22	Wendy	Married with three children under twenty Provides care to both parents	Not stated	Healthy Babies-Healthy Children

Ethical Considerations

The proposal for this research was submitted to the Research Ethics Board at Lakehead University and ethical approval was granted February 9th, 2009 (see Appendix E).

Permission was obtained from the medical officer of health or a senior manager with signing authority for each participating health unit (see Appendix B). Interested participants were fully informed about the purpose of the study in the cover letter (see Appendix C) and the intended use of the research findings. Prior to beginning the interview, participants were advised of my management position with another health unit. Again, at the time of the interview, participants were given a hard copy of the cover letter and consent (see Appendices C and D) and were asked to sign the consent in two places. One of their signatures provided consent to participate in the study and the second signature gave permission to be digitally recorded during the interview. Before beginning the interview, participants were reminded that they could pass on any individual question or withdraw from the interview or study at any time.

Confidentiality was maintained by assigning each participant a pseudonym for use in the transcript and report (see Table 1). They were also assigned an alphanumerical code that was cross-referenced with the original participant list and kept

in separate files. Digital recordings were coded and filed with the alphanumerical number. All identifying information was removed from the written transcripts (i.e., references to health units, cities and any other proper names). Participants were informed that all information collected during the interview would be securely held and treated confidentially by me, the researcher, during the analysis of the research. They were also advised that when the research was completed, all data would be stored securely at Lakehead University for a minimum of five years.

Data Collection and Recording

To collect data I used in-depth interviewing which suits grounded theory research (Charmaz, 2003). A semi-structured interview guide (see Appendix A) was used to guide the process of data collection. The interview questions were designed to collect rich data by exploring the participants' views and experiences but also to focus on the research topic and address the research questions (Charmaz, 2003).

The individual interviews were conducted in a private quiet meeting room that was located at the participant's health unit with the exception of two interviews (done at alternative locations for the participants' convenience). Interviews lasted from twenty-eight to fifty-five minutes (average = forty minutes). Digital recorders were used to record the interviews and provide a backup in case of equipment failure.

Interview Structure

The interview questions were designed to collect data on the key concepts identified in the literature review. The primary goal of the questions was to gather rich data about how public health nurses perceived their professional duty to care and how they felt their professional duty would fit with any competing personal female roles they

had during a pandemic or disaster. Questions were grouped into important themes suggested by the literature review: 1) professional/nursing and female roles, 2) knowledge, skills and training, 3) ethical standards and 4) fears and concerns about personal risk. The interview began with a few opening comments that reinforced the purpose of the research study (Johnson, 2002). Demographic information was not directly asked of the participants instead the data emerged from the participants at different stages of the study.

Initially when the participants volunteered for the study they described how they felt they met the research criteria by listing their various caregiver roles and identifying what health unit and what program area they worked in. Then during the introductory comments of the interview, I invited the participants to "tell me a little bit about themselves". Commonly they described their relationship status, the number and ages of their children, other caregiver roles they had, where they lived, their household make up including pets and occasionally they shared their personal interests or recreational activities. The first question on the interview guide was 'please tell me how you chose to be a nurse and how you came to be a public health nurse'. The participants typically answered this question with where they went to school, the number of years they had been a nurse, previous types of nursing experiences they had had, how and when they got into public health and their various roles in public health. Other demographic data emerged throughout the conversational interview discussion. Basic demographic information was listed in Table 1.

"Tour questions" (Johnson & Weller, 2002) were then asked that encouraged the participants to describe their experiences in the profession of nursing and how their

career in public health had evolved. They were asked to provide a description of their typical daily duties as a public health nurse. They were then asked questions that addressed the research questions and explored how the participants viewed their professional identity, understood their duty to care, determined what personal roles they had and if and how they might compete with their professional role, and explored their values and beliefs about accountability and responsibility to their profession and family. I also explored their knowledge of pandemic planning and what they thought their roles and responsibilities might be as a public health nurse during an influenza pandemic. These questions were used to elicit their opinions, values, beliefs, fears and factors that would guide their decision-making and ultimately influence their willingness or ability to work throughout a severe influenza pandemic. Additional probing questions were used when I wanted to encourage participants to expand on their responses, seek clarification or gain more depth (Neutens & Rubinson, 2002). All questions were open-ended to allow the participants freedom to talk about whatever they liked in response. Participants were asked to describe what they knew about their organization's preparation for a pandemic, how they were informed of the planning and what training they had received for possible future pandemic roles. The interview concluded with my summarizing the key points I had understood from their interview and thanking them for their participation (Johnson, 2002).

Data Management and Storage

The digitally recorded interviews were transcribed verbatim prior to beginning the analysis. To manage the data, I created individual file folders for identity, tape, document, content, process and theme files as recommended by Kirby and McKenna (1989, p. 131). Each participant was assigned a pseudonym and an alphanumerical identification code, which was used to identify all materials related to that participant including the signed informed-consent form, the digital recording of the interview and all paper copies of the transcript. Three copies of the transcript were made. One was maintained as the original, the second was used to code and the third was used to cut out coded sections for moving and arranging for the hurricane diagramming. Once prominent themes were identified, these pieces were named and colour coded by theme(s) and moved into a corresponding theme file.

Analysis

Analysis took place during the collection of the data (March 6–April 17, 2009) and continued for fifteen weeks following the completion of the interviews. Recordings were replayed so that I could become familiar with the content and identify important tones or emotions in the participants' voices. The written transcripts were reread once again prior to beginning the coding for analysis (Creswell, 2007; Ulin, Robinson & Tolley, 2005). Once I had a sense of familiarity with each participant and their transcript, I began to analyze the data in a systematic manner using progressive coding techniques (Charmaz, 2006). The first step was to code small segments of the data (word, line, segments) by placing a word or phrase for the code in the corresponding right margin (Charmaz, 2006; Creswell, 2007). This allowed me to identify all codes

and track the frequently used or common codes. The next step I used for analysis was axial coding (Chamaz, 2006). Individual codes were compared and grouped together into a broader category (Creswell, 2007). How these higher-order categories were connected was determined through selective coding (Creswell, 2007). Selective coding "tells a story" (Creswell, 2007, p.160) and helps to explain what is going on in the data. "Categories depict the problems, issues, concerns, and matters that are important to those being studied" (Strauss & Corbin, 1998, p. 114). Each interview transcript was reviewed and coded several times to ensure all codes and subsequent categories were captured. Hurricane diagramming was then used to help sort codes into categories and organize the categories into themes (Kirby & McKenna, 1989). Hurricane diagramming helped me to visualize the patterns and relationships that existed between the codes and categories. The hurricane diagram also helped me to identify emerging themes and understand the significance of each theme in relationship to the research question. Four major themes emerged from the data and were used as the building blocks for the development of my grounded theory. The theory offered is supported by multiple quotes taken from the data, which are representative of the participants in the study. The quotes authenticate my theory by allowing the participants' values, beliefs, thoughts and feelings to be shared with everyone who reviews the study (Creswell, 2007).

To organize my thoughts and to help me identify important themes through the ongoing process of data analysis (coding, categorizing, hurricane diagramming, theme identification and conceptualization of the themes), I documented my thoughts and drafted models of the emerging theory in a notebook (Creswell, 2007). Memoing and diagramming were other methodological strategies I used when working with the data to

capture ideas and reflections supportive of the themes I identified and supported their evolution to the abstract concepts I have chosen. By documenting my thoughts about the data and how it fits together, it supports the theory I offer and creates an audit trail (Birks, Chapman & Francis, 2008; Guba & Lincoln, 1989; Strauss & Corbin, 1998; Ulin, Robinson & Tolley, 2005) Having this audit trail adds to the validity of my study (Whittemore, 2001).

Chapter 4: Results

Emerging Themes

Four prominent themes emerged from the data: 'heart,' 'head,' 'soul' and 'blood.'

The 'heart' theme represented aspects of the emotional level of being human: caring, commitment, love, passion, identity and self-image, while the 'soul' theme represented the spiritual component: morals, ethics and legal responsibility. Soul also captured honouring the societal contract implied between professional groups and the members of society. The 'head' theme represented the thinking human and their intellectual ability to apply logic, reason and critical thinking to decision-making. Finally, the 'blood' theme addressed the basic human drive to survive and perpetuate genetic material. Reproduction and protection of offspring were also represented in this theme. Each theme is presented using quotes from the participants to support the conceptualization of the codes and categories that I have used to develop the themes. The quotes represent the participants' nursing experiences, beliefs, values and personal roles and responsibilities that are the factors of significance in the participants' lives. These significant factors will influence their duty to care during a pandemic.

A model of the themes identifies the real issues of importance in the participants' (public health nurses) personal and professional lives (Strauss & Corbin, 1998) and explains how these factors will be prioritized in their decision-making during an influenza pandemic. The model consists of an overarching theme of 'humanness' and

the four main themes: 'heart,' 'soul,' 'head' and 'blood.' The model of the themes is offered in Figure 1.

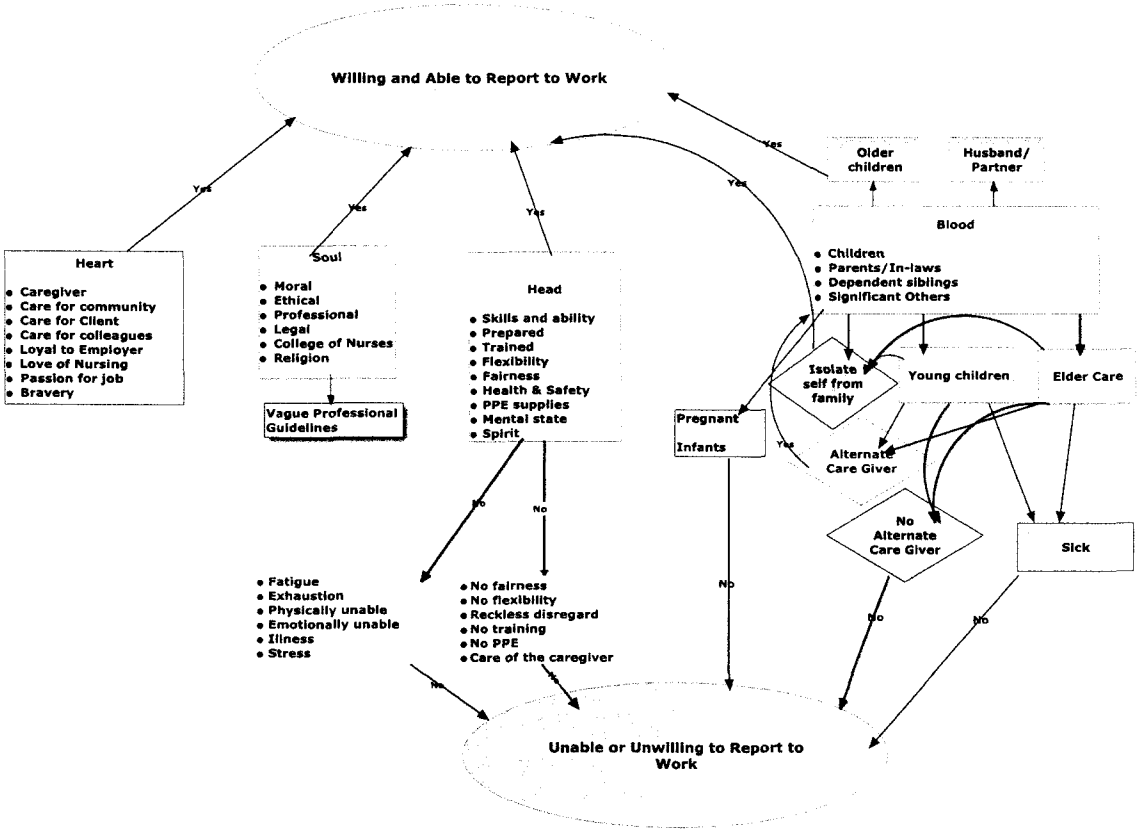

Figure 1: Predominant Themes and Categories

I chose 'humanness' as an overarching theme because it embodied the four primary themes that were identified but also resonated with me from a quote from one of the participants. Humanness is defined by the Merriam-Webster online dictionary as "susceptible to or representative of the sympathies and frailties of human nature" (Merriam-Webster Online Dictionary. Retrieved July 31, 2009, from http://www.merriam-webster.com/dictionary/humanness). This is an appropriate conceptualization of the overarching theme for the four main themes present in the data. The participants are nurses, wives, mothers, daughters, siblings and friends to others. Caring, a basic human trait, will drive them to respond during a crisis but the limitations of being human will affect their response.

I believe this quote from Wendy's interview led me to see humanness as the overarching theme. "...I guess having everyone realize that we're humans too and we have families and we have children, and we're not perfect and we'll get through this together" (Wendy). Using humanness as the overarching theme supported the human characteristics of the four predominant themes. The themes suggest that public health nurses' decision-making at the time of a pandemic will be influenced by their 'heart,' 'head,' 'soul' and 'blood' with the most powerful of these influences being 'blood.' Public health nurses are human and understanding their human limitations provides others with an ability to predict their behaviour during a public health disaster and provide some understanding for it. More importantly, it allows planners to consider these potential limitations and introduce strategies to minimize any interference with nurses' responses in a disaster.

Although each of the themes was strongly represented in the data, they were not equal in weight when it came to influencing the participants' perception of duty. The first two themes 'heart' and 'soul' reflected their personal and professional values and morals, which were found to be both positive and strong influences on their decision to act. 'Head' represented factors that could have either a positive or negative influence on their willingness and/or ability to report to work. Intellectually, nurses recognized that they had the knowledge, skills and ability to provide service during a public health disaster and few others would be as qualified. However, the negative 'head' influences were recognizing that little preparation had been done by their organizations to keep them safe or consider their personal or family needs. These factors would essentially present barriers to their commitment to duty.

The final theme of 'blood' was the most complicated and least predictable because it was affected by the nurse's personal place on the life continuum. The closer a participant was to childbearing, either pregnant or with a young child at home, the more she was likely to choose family duty over her professional duty. The interventions/strategies needed to reinforce duty at the 'blood' level to ensure an effective public health nursing response are not easily controlled by employers, administrators or policymakers. The influential factors on the 'blood' theme were fluid and influenced by every nurse's own world views and social realities at the time of a pandemic. For example, children were important to the nurses that were studied but the older the nurse's children were, the more likely they were to consider alternative childcare and report to duty. However, the nurses with very young children ($\leq$ 2 years)

were more conflicted and felt that their role as mother took priority over their role as nurse.

Following SARS, the Naylor Report (2003) reported that public health plays a key role in disaster responses and that public health nurses were the largest group of health care professionals in the public health workforce. The ability to rely on public health nurses as important human resources in a pandemic or any other infectious disease outbreak will be maximized if the potential barriers are recognized and interventions planned and supported during ongoing pandemic planning.

I will now present each theme in detail with the codes and categories contained within the theme and provide supporting quotes from the data.

Theme 1: Heart

Heart was used as a conceptual theme for the codes that developed the sub-themes: caring, compassion, bravery, courage, commitment, love and passion for the job and love of the image of nursing. In the dictionary, the heart is referred to as the centre of emotion, the capacity for sympathy and the essential part of something (Retrieved June 6th, 2009 from, http://dictionary.reference.com/browse/heart). I felt heart was an appropriate conceptualization for the theme that captured the caring and compassion that nurses expressed for their clients, community, employer, family members and colleagues. It also represented the characteristics of bravery, passion and commitment that were present in their stories. Table 2 (see Appendix F) identifies the common codes and categories that were found in the data, which I grouped under the theme of 'heart.'

Caring.

One of the most common categories identified in the data that referred to 'heart' was caring. Caring is considered an instinctual human trait possessed by all people. Lea and Watson (1996) explain, "by virtue of being human you care for others" (p.72). This type of caring is grounded in feelings of empathy and compassion for participants. Caring was not limited to their patients or clients but extended to the larger community, the general public and their team-mates. Participants expressed caring toward their team-mates, both those that they believed would show for duty and be overworked and stressed but also for their team-mates who would not show up for duty due to personal reasons, which might include having young families or underlying medical conditions. Hannah felt that nursing and caring go hand-in-hand, which is why she would feel compelled to help during a pandemic. "But I am also a very caring individual, and that's why I'm in the nursing profession, right? And I would want to help" (Hannah).

The participants strongly identified with the caring component of nursing, which was very important to them. They felt that it was also important for their children to understand this as well, which made it easier for them to think about leaving their children to respond during a crisis. Hannah gave this explanation for why her children would understand if she needed to work during a pandemic:

> And my children do understand about the caring role because at school, I think it's in grade two or three, I'm not sure...grade three actually...they talk about the helping role in the community helpers. And they usually have people come in from different disciplines to kind of talk to the children about the helping role, like a firefighter and a policeman and what kind of situations would be of...so they are kind of aware of the role of what specifically I do, yes what other helping roles are and what are important in different situations. (Hannah)

Ellen talked about how she cared for her clients and how this care extended well beyond the end of her workday. She believed that a strong caring relationship is developed between a nurse and her client. This caring relationship made it hard for a nurse to go home at the end of the day and stop thinking about her clients.

> As far as responsibility to clients, it's difficult because we are such a small community, I think you feel more responsibility. I think there's probably a lot of us [nurses] who leave here at night worrying a lot more about the clients than they're probably worrying about themselves.
> ...Very few of us go home here thinking that our job is over. (Ellen)

Asked if she thought there were limits to her duty to care for patients during a pandemic or if she would be on the frontlines, Mary believed that her heart would direct her to be involved: " My heart would want to, for sure. . ." (Mary). When asked to explain her comment, Mary elaborated:

> Oh that compassion for others who might be ill and I don't know. I don't know what it's going to look like. I'm the type that one day I'd love to go to Africa. I don't know if that will ever happen, but my heart wants to do that. My heart sees the need and wants to be a part of helping. (Mary)

This quote from Mary helped me conceptualize 'heart' and 'head' as two of the major themes.

Tryna, Vivian and Natalie talked about the empathy they had for other families and how they felt they could identify with other mothers and families in this type of disaster. It is their ability to empathize with others that will compel them to help during a pandemic or another public health disaster where the security and well-being of families are compromised.

> And the reason I would is because there are other families out there and I want to do what I can to keep them safe as well. (Vivian)

> I think it really reinforces my duty to care in that we're caring for people's children and I would hate to know that somebody had the power to help my family and didn't do it. (Tryna)

> Yeah, I don't think it would, being a mother, would change my decision to go to work or not. Yeah, because I think too that all the other clients I'm seeing are mothers too, you know? And so wanting to see both sides. (Natalie)

Care and concern for colleagues.

Participants also expressed concern and caring for their nursing and public health colleagues. They were concerned for their colleagues, those would show up for duty and be at risk of infection, overworked and stressed. They felt a responsibility to their colleagues to show up for duty and "pitch in". If it was a public health disaster, they recognized they would need a unified front to respond to it.

> I'm just sort of thinking that this is going to be Armageddon and terrible. But I feel a responsibility to my team members and the health department and all the people that I work with. (Jenny)

Sarah, who was concerned about exposure to the influenza virus because she had a young child at home, still believed there was a large part that she could play during a response that would alleviate stress for her colleagues. She believed that the caregivers required care giving and she was willing to provide it.

> I think I would really like to just make sure my colleagues were all okay because that's kind of a role too, going around and making sure everyone's had breaks or if they need me to make phone calls or have enough food or whatnot-like making sure my colleagues are okay. . . . And to kind of watch one another to make sure- that's from the caretaker point of view. (Sarah)

Sarah was a new mom who felt conflicted about leaving her baby, and although she felt that her primary obligation was to her baby, she also felt committed to her team. "But I wouldn't leave my team. I would do what I could, what I felt I could" (Sarah).

Ellen felt that a responsibility to colleagues existed in all public health crises. She felt that to refuse to come in when needed would put an unreasonable burden on colleagues.

> I know being in a small health unit, we've had other outbreaks before. We've had to call in staff. We've always had a good response to people being available or dropping their plans or cancelling vacations, those sorts of things. We've always had a good response to that. I think it's maybe because we are small and we all know each other that if you don't you know it's not just your call-in, but your friend that is going to have to work twice as hard. (Ellen)

Interestingly, participants also expressed concern and empathy for their colleagues, those that would not show up for duty for personal reasons. They believed this decision would be difficult for their colleagues and would be based on valid reasons like having very young families or underlying medical conditions.

> There should be specific exemptions for some nurses, because we don't know their whole situation. It could be that they have a chronic illness....whether it's stress or chronic illness or whatever, there should be some roles or exceptions for them and I think it should become confidential. Like I don't think it's anybody else's business why they're refusing. (Paula)

> I don't think that there would need to be [repercussions], because I think the majority of people I know would probably feel badly if they didn't come in and if they didn't contribute. And I think that would be repercussion enough to know they hadn't participated. So I don't think there would need to be any form or anything from HR kind of perspective with that. And I think you know depending on the reasoning why-you know I can think of a couple of my colleagues who've got little kids and twins and their lives are really crazy to begin with so, too, I can understand why they might say "Hey". They're just not in the season with their family life that can facilitate for them to put any extra hours that would be required. (Natalie)

> I do believe that people should have the right to decide because until you walk a mile in someone's shoes, you don't know what they're going through. And there are some that are far worse off than I, that have older parents that they have to look after, might have farms, things like that. (Vivian)

> I would certainly volunteer before they needed nurses who a) have young children or b) have childcare issues. Because I don't have young children, I

> don't have childcare issues and I'm not living with elderly people in my life. (Ginelle)

> There might be a very legitimate reason why that person isn't coming to work. (Fran)

When Laurie was asked if there should be any repercussions for nurses choosing not to come in to work during a pandemic, Laurie gave her colleagues the benefit of the doubt. She recognized that for them to decide not to come to work would be a very difficult decision.

> That's a tough question. I don't think any individual nurse would make that decision lightly, so if she made it, it would be because of a real serious worry or fear on her part. So for her to come in under that fear probably wouldn't be good. (Laurie)

Care for their community.

For public health nurses, their client is also their community (Smith & Bazini-Barakat, 2003; Racher, 2007). Participants' expressions of caring and concern extended to their community. They felt as public health nurses, they had a duty to keep their community safe during this type of disaster.

> I've just stayed and worked here and this is my community, so I care about my community. I want to help out. So it's not just my workplace and how I feel as a nurse. It's because this is my community and I want to help out. So I'm definitely committed. (Paula)

> Why would I continue? Because it's my job and I believe I have to do my job to keep my community well. (Wendy)

> . . . but I would also be quite empathetic to all of the young families that are in my community also. So if I felt there was no real imminent danger, then I would go. I would go and do what I could in hopes of containing and preventing it from continuing to spread. . . (Anna)

Caregiver image.

A major influence on the participants' willingness to respond during a pandemic was the meaning that they attached to their own identity as a caregiver and their personal image and beliefs about what it means to be a nurse. Natalie shared what she believed nursing was at the time when she was choosing a career:

> So I recognized about nursing—there was an aspect about it that was more concrete. I think is the best way to describe it. More nurturing and more hands-on, and I liked that aspect about it. But what I also liked was just the integration of a variety of disciplines and the fact that nursing was holistic. (Natalie)

Later, Natalie described how the public health nurses in her health unit had to meet with social workers from a mental health agency to explain how they incorporate their clients' cultural backgrounds into the care of their clients. These social workers were being asked by their ministry to prove that they are considering the culture of their clients in their care plans. Natalie found this an odd request but it made her realize that nursing is a unique profession where caring for the client requires a holistic understanding of the client not just a concern for health in a basic way.

> Well nursing is always considering the cultural background. We always take it into account. So it just seemed like a very odd thing that these social workers were having to address clients' social-cultural backgrounds and they were very uncomfortable. And so we gave them some examples of questions we would ask people to assess—you know, what cultural background they would be associated with, and it just made me realize nursing is such a unique profession in that way, that we pull from a lot of different disciplines, but we have our own core of how we provide care that is unique. (Natalie)

The image that nurses have of their own profession and identity as caregivers will drive them to show up during a serious influenza pandemic even when there is a personal risk of infection or death. The following quotes from Vivian illustrate how the

participants believed nurses are caring and nurturing and above all else, want to help others:

> . . . because I think we still believe nurses are women and nurses are nurturers and they are caregivers, and they do whatever they have to and they do it now. (Vivian)

> I'm a nurse. So I'm there. I'll be on the frontline. I'll do whatever I have to do. Just point me in the right direction and give me some information and guidance. (Vivian)

> I always see nurses...I don't know...as sort of going above and beyond. I don't know why. So I always see us in there sort of in the trenches and we're there to the very bitter end, regardless of what's happening. (Vivian)

Tryna had also ensured that her children understood her role and responsibilities as a nurse. She wanted them to understand the moral and ethical responsibilities of belonging to society.

> . . . and my family knows that I love them and care for them but they also know that I'm a nurse and sometimes I have to go to work early and come home late that's what we have grandmas for and neighbours for and that's part of being a person in society. You have to contribute and I think we show our kids that every day. (Tryna)

> . . . I try to model to my kids and talk about the people we like to be and the world and so I think my kids would expect that from me as well and I think just being a mother reinforces that for me it doesn't take it away. (Tryna)

When asked what her family might expect of her during a pandemic, Ginelle felt that her children and family knew what her responsibilities were as a nurse and why she would have to respond during a crisis.

> They'll say, "Go to it, Mom. Go do your job," and my husband would be very supportive as well and my mother would be and she would put herself second. (Ginelle)

When asked what the public would expect of her as a public health nurse, Jenny replied:

> They have this idea about nurses, that we're caring and they really trust us. So there would be high expectations because we're in the medical field and they would be looking to us to answer questions and make sure that they're safe and get them what they need to deal with this. (Jenny)

Many of the nurses had come from families with nursing role models. These role models were strong and positive influences on their lives, shaped their understanding and image of nursing and influenced their decision to join the profession.

> My mother's a nurse. She works in the [department/hospital] as well so I think I've always had some positive stories that I've heard from her with regards to nursing. (Ursula)

> My mom is a nurse, as well as both grandparents and a couple of aunts. So I've been around a lot of nurses, you know growing up. So I knew a lot about the field. (Isabelle)

> I think I was appointed by mother who was a nurse. So there was a lot of exposure to nursing growing up. (Ellen)

> I knew that I loved science and math; and I really wanted to be hands on. Certainly medicine was an option, but I liked nursing. I had an aunt who was a nurse and a mother in-in-law and so on. (Ginelle)

The participants had a strong image of what they believed nurses are and do. This image was tied to being professional, caring and self-sacrificing. During her interview, Natalie recounted a story about a nurse's action during an explosion in Toronto in 2008. Natalie was troubled by the nurse's actions during the explosion when she abandoned a vulnerable child [client] to ensure her own escape. Recently, Natalie had heard the story debated on the radio where the nurse's actions were being criticized.

> There was a case not long ago where there was gas leak in part of the GTA and there was a great debate because there was a family who lived across from the factory who had a mentally handicapped daughter and they had a nurse there from a nursing agency. And she left. She didn't help them get the child out, and so there was just this great fear about what...was she right in protecting herself and getting out, or should she have helped? And I remember listening on the CBC to all the debates back and forth and they had someone from the College of Nurses, and they had community groups and different people just voicing their

> opinions. And I remember thinking, I would have hoped that I would at least helped them get the child out and then I would have gone for safety, So I think the thought of leaving someone behind ,someone who was at risk and maybe more vulnerable because of their situation made me feel kind of sad. (Natalie)

Natalie felt badly because this nurse's actions did not match what her image of nursing was and what a nurse would do in this type of situation.

Several nurses spoke of how their image of nursing had began at an early age and was tied to some of the more traditional symbols of nursing (uniforms, stethoscopes, caps and watches), which in some way inspired them to be a nurse.

> I don't even remember when I made the decision to be a nurse. I can think back to when I was about six years old having a shirt. It was a nurse shirt. It was polyester and it had the watch on it and the stethoscope, and I wore it religiously. I loved that shirt. So I don't know if there was a time when I didn't think I would be a nurse. (Vivian)

When I asked Kendall how she chose to become a nurse, she felt that seeing a traditional nursing uniform had an influence on her decision-making:

> It's a stupid answer, but I went to Lake View Mall and saw the nursing uniform and thought that was kind of neat. (Kendall)

Others had developed their image of nurses as caring by their own positive personal experiences of being on the receiving end of nursing care. Tryna was a university student in an arts program when she became ill and was hospitalized. The nursing care she received in hospital convinced her to change her career plans and enrol in nursing.

> I was...became sick and I was in the hospital and I had to have surgery and I had really excellent nursing care and then I switched and decided I wanted to be a nurse...and so I finished my year out and the next year I went into nursing. (Tryna)

Hannah was introduced to public health nursing when she had a public health visit for breast-feeding support. She had been in university prior to her pregnancy but

had left to have her family. This is what she said about how her positive experience with public health nursing influenced her career choice.

> But after being exposed to public health and what it did, when I went back the second time, I was very clear what I wanted to do. (Hannah)

Accepting personal risk to care for a client/patient (bravery).

Bravery was another category that reflected the theme of heart. Nurses routinely accept some degree of personal risk as part of their job. These risks often involve threats from infectious diseases with life-changing implications. Several participants discussed having had a previous significant occupational exposure to an infectious disease including SARS, HIV, tuberculosis and Hepatitis B while working as a nurse. Others shared stories of visiting homes with imminent physical threats including baseball bats, guns, thrown objects and vicious dogs. Other perils they recounted facing in their day-to-day public health nursing roles included drugs, alcohol abuse, emotional abuse and infestations. Despite fear and anxiety, the participants routinely put their fears aside to meet the care needs of the patient or client. The threat of being exposed to a pandemic virus did not outweigh the threat that many of these public health nurses face on a regular basis. Most were able to provide examples of a time in their work where they faced a real or potential threat to provide the needed care or support to a client.

Olivia provided an excellent personal story of making a choice between her own personal safety to provide care for a marginalized client.

> I was visiting this lady, trying to establish a relationship. It was nothing to do with pandemics or anything for sure. She had definite mental health problems and she suffered from paranoia. Well she used to keep a baseball bat behind her front door and when I went to the door, she'd open it and she'd have the baseball bat in her hand. And I was always just a little afraid that one day she was going to not be able to sort who I was and just hit me. (Olivia)

When I asked Olivia why she continued to visit this client with this fear that she could be attacked with the baseball bat, Olivia stated, "She didn't have anybody, so I thought that was important that she see that familiar face and you just sort of did it" (Olivia).

When working for public health, many of the homes visited have some type or degree of risk. Vivian tells a story of conversation that she had with her husband, a police officer, that emphasized this point.

> I don't think people realize with public health there can be safety issues. I mean, we've had times where two nurses have gone in just because of circumstances; and I always remind my husband [police officer] whatever home he's been in that has children that he's taking his gun to — remember I've probably been there before him. (Vivian)

The homes that he is called to as a police officer (prepared, armed and with officer back up) are the same homes that she has visited as a public health nurse, without any protection.

Wendy provides a story of what she describes as "the nursing way," which is responding to the client's need first and thinking of one's own personal safety second.

> With one patient, his central line came apart. And initially, as a nurse, you respond and you grab this many 4 x 4s to whack it into place while your colleague—gowns and gloves, gowns gets all her protection on, and you know all the doctors stood there watching, saying, "I don't want to go near them-they've got AIDS." And afterwards I thought, of course you don't want to come near. You're a doctor. We as nurses, I think we have that compassion and caring maybe to a fault that we put the needs of our patients before our own needs. And I would say, based on the people that I work with here, most of the nurses if not all of them will come to work [during a pandemic]. (Wendy)

Vivian provided another example of the "nursing way".

> Oh, I would follow all the protocols. I would do it right and never get sick. But I'm just thinking, things that you do in your practice-if there is something that you could do for someone and it had to be done now, would I take the time to follow the precautions, or would I just help? Because I always think about the

> accident scene that you come upon. You know you should have your gloves. You know you should be using your mouth guard if you are doing AR, CPR whatever you want to call it. How many of us carry them, number one? And how many of us would take the time to put them on? (Vivian)

When I asked, "Would you do it with out it?" she replied:

> Definitely, and you know what? The funny thing was one of my CPR instructors — he's an ambulance attendant — he said, "I don't touch anybody." And I thought, "Oh my goodness." And he said, "I have to go home at night. I have children. I don't touch anybody unless I have those things." I thought, "Oh I am such an idiot." (Vivian)

Janice: How much of that is steeped in being a nurse?

> Vivian: I think that we still believe nurses are women and nurses are nurturers and they are caregivers, and they do whatever they have to and we do it now...I think when you're faced with something like a pandemic when you have somebody who's let's say needing CPR ASAP and you don't have any of those things. You're in there. And I don't know if that's just nursing. . .

Wendy gives other examples of being at risk while working and despite there being significant risks, she accepts risk as part of her job. "I've had shotguns pulled on me. I've had dogs come after me. I've had --you know and you say, 'This is part of the job" (Wendy).

Beth also provided a story that also demonstrated an unusual risk that she accepted to do her job.

> I worked in a jail and there was a strike and a riot. And I know at that point, I mean like I had to do it and it was...I could've actually probably left if I really felt that I was at risk. But I felt other people were at risk, so it was sort of the same thing. It was like, "No I need to stay here." (Beth)

Mary talked about the possibility of intentionally putting herself at risk by not wearing personal protective equipment to provide a client with the care and emotional support that is needed. She felt that by wearing any physical barriers in the form of personal protective equipment, it would negate the care she offered.

> It's the whole...that whole SARS equipment. It would be really, really difficult to care for a client. I'm not just talking about physical care. I'm talking emotionally supporting that client. I have not worn my gloves when I'm done – being on a long-term floor for that reason, like that barrier reason. But I know the risk is minimal, right? And maybe I'm in major denial, but that emotional barrier between me and the client — I might put myself at risk because of that. (Mary)

Participants recognized that they would be afraid and anxious for their own well-being during an influenza pandemic but despite their fear, they were prepared to set it aside and show up for duty.

> I think that there would be certainly a level of anxiety. I'm not going to say that I'm just going to charge in there and take on...of course there's going to be a level of anxiety and I might be....I cannot see myself calling in sick. I would be there. I think my concern for myself though is that I may not take all of the precautions that I should take. (Mary)

> I'd be scared. I'd be very scared. But I would think I'd still come to work. But I'd be very scared, yeah. (Paula)

> The whole infection areas trauma thing, you know, how to deal with this and dealing with all of these ill people and knowing that you have to help them, but also being scared and feeling ambivalent and torn because you know you need to be here. (Jenny)

> I think it would be just that there might be a risk to bring it home to my kids and husband and affect them. But I don't know that it would make me feel a sense that I would preclude myself from the work because of my feeling. I don't feel it's an either/or scenario and it may be just a day-by-day decision-making, you know? (Natalie)

During her interview, Dara stated that she had not received any mask fit testing or other training in personal protective equipment in preparation for a pandemic. When she was asked if the pandemic began tomorrow would she show up to work, this is what she said: "I probably -- I am not trying to be a masochist or a martyr but I'd probably show up" (Dara).

Passion - love of the job.

Another category I identified from the data was passion for their work that I included within the heart theme. The participants felt proud of their nursing identity and expressed love for their work.

> Being a nurse, I really love my job. I absolutely do. And I loved it in other areas too, like being an oncology nurse. I really loved that job too and you know when I talk to my kids I say I want you to do something that brings you some satisfaction at the end of the day. You know I just think nursing is a great opportunity and I have worked with some amazing nurses that have mentored me and helped me along...(Tryna)

> I chose nursing as a career for a reason in that...I want to help people and I very much care about that. Nursing is certainly a passion of mine and I love my job, I love what I do so I think certainly, I mean if I was well and I would do that [show up]. (Ursula)

Theme 2: Soul

The next theme I identified I labelled "soul." According to thefreedictionary.com, soul is referred to as "the part of the human being that contains their character and makes a person responsible, moral, ethical and honourable" (Retrieved June 6, 2009, from http://www.thefreedictionary.com). For this study, the theme soul relates to the moral, ethical, professional and legal beliefs and values of the participants and the factors that have influenced their moral and ethical character. Table 3 (Appendix G) identifies the common codes and categories that were found in the data and grouped under this theme.

The participants believed that they had an ethical, moral and professional responsibility to report to work during a pandemic. Their sense of responsibility was strong and was rooted in their personal values, beliefs and morals. It was also influenced by their sense of accountability to their professional regulating body, the College of

Nurses of Ontario. Many of the participants felt a profound responsibility to their employer and to the discipline of public health. Participant quotes representing these categories are provided.

Responsibility to employer.

Working for a public health organization created a sense of employer/organizational responsibility in the participants. They believed that because the mandate of their employer was to protect the health and well-being of the public, being public health nurses meant they had a duty to report to work whenever the public's health was threatened. Mary saw that her duty to care as a nurse was intrinsically tied to her employer. In a crisis, she believed she would do whatever her employer asked of her. "I would probably look at it from the point of view of, what does my employer ask me to do at that time and my duty to care would probably follow that" (Mary).

Tryna, Fran, Isabelle and Laurie all believed that their nursing duty was strongly tied to working for a public health organization. They felt that during any type of public health emergency, it was their duty to respond as public health employees.

> I think you have a responsibility to your organization and become part of that team and in public health believe me has to respond to those kinds of emergencies. That's why we're called public health. It's a no-brainer to me. I think everyone that works here has to respond. (Tryna)

> I do feel that when you work in public health that you have a duty as part of your job to be here I think if you're well. I do think that you should be here. That's why we're all really working in public health for public health — for the public's health. (Fran)

> But ultimately, this is the job that you signed up for, so I guess you take that responsibility as you work in public health because this is what you signed up for, so I guess if you're not willing to come to work, then maybe you need to be working somewhere else. (Isabelle)

> I think my understanding is that as employees of public health we are all on call when community need arises. (Laurie)

Personal and professional values, beliefs, morals and ethics.

Many of the participants believed that they had an important role to play in a public health disaster and that they would be driven to show up because of their own personal and professional values and ethics as well as a sense they had a moral responsibility to do so.

> I think that as long as I'm healthy and my family is healthy that I would feel a sense of responsibility to come to work and contribute to make the situation better. And I think that probably relates to my personal ethics and my sense of professional responsibility that as long as I were healthy, I would want to participate. (Natalie)

> I would say for the most part I work with a really committed group of people. So I would think my values are very similar to most of them in terms of our commitment to clients and in terms of our desire to contribute. (Natalie)

> But it's part of my work and people are counting on me. Unless I was ill or something and couldn't do it, I think I would have to come in and do my work. (Jenny)

> But I think because I have such strong work ethics, so I know that that would probably be the thing. Like I would be more apt to go until maybe I really couldn't function. (Beth)

Some participants viewed the decision to report to work as an ethical and moral decision. They felt that they would choose to come to work because they could empathize with the people who required care or assistance. Tryna and Hannah were able to determine what the right decision was by putting themselves in the other person's position. I had used the following quote from Tryna to illustrate the caring sub-theme but I believe it also represents the moral component of her decision to report to work during a pandemic.

> I think it really it reinforces my duty to care in that we're caring for people's children and I would hate to know that somebody had the power to help my family and didn't do it. (Tryna)

> But I'm thinking that's part of nursing. We can't just...there's duties and there's responsibilities that go along with it and we have rights, yes. And our rights are not fully taken away but we need to balance things for the greater good, right. . . But if I think about things-because you know what? If I'm that person who needs that care, then I want somebody to be there, right? And so I have to think like that. (Hannah)

Others saw it as an ethical decision. They believed that nurses have a professional obligation to provide care and they have the skill sets required during this type of disaster. To assist them with their decision-making, they used their personal and professional ethics to guide them. Tryna believed strongly that doctors and nurses absolutely had an ethical duty to respond because of their special skills.

> I think other health professionals might get it off a little bit easier but I think doctors and nurses absolutely are called to respond during a crisis whether you work at a hospital or work at a doctor's office. I think people like occupational therapists, physiotherapists, speech people or other health care professionals have a little more leeway in that they're not usually needed in an acute situation, but I think absolutely doctors and nurses wherever they work have an ethical responsibility to respond. (Tryna)

Ginelle believed she had an ethical duty to provide nursing services to clients. "I know that I have an ethical obligation to provide service to every client who is eligible for our service" (Ginelle).

Ellen recognized that responding during a pandemic would not be an easy decision for some staff and that they would have to look within themselves to determine their personal ethics and values. "A lot of people are going to have to look down into the core of themselves as to what ethically whether their responsibility is to public health and to be here" (Ellen).

Kendall was very definite that her decision to respond during a pandemic was tied to professional ethics, and as a professional with the right information, she would continue to work and do what was needed. "No, I...we will continue the same way. We are professionals. We have the information. We have been informed. We will be informed. We will act on it." (Kendall)

Kendall and Hannah used moral reasoning to assist their decision-making. Hannah recognized that personal sacrifice might be needed to benefit the 'greater good.' "...to do something for the greater good of society" (Hannah).

Kendall believed showing up for duty was partially a moral decision, reasoning that every life is valuable and that one life, including hers, was not more important than another's.

> So, I think that as a public health nurse or in any situation you know wherever you're put you need to follow through...yeah, unless I really can't. It's the same thing, what would make my life more important than someone else's? (Kendall)

College of Nurses and professional duty.

Nursing is a self-regulated profession and all public health nurses are required to belong to the College of Nurses of Ontario. The College of Nurses develops standards as guidance documents for registered and practical nurses. Nurses are professionally required to practice according to the standard set by the college. Although the literature review found that nursing ethical guidelines are ambiguous around duty to care during a disaster, many of the participants felt that by being a registered nurse and belonging to the college, it required them to show up for duty during a pandemic or any other public health disaster.

Hannah felt that by belonging to the regulated health profession of nursing, she had a responsibility or a requirement to show up for duty during a pandemic. She also believed that the risk of exposure to an infectious disease including the pandemic influenza virus should be an expectation of all members of the College of Nurses. "Nobody wants to be exposed to that [influenza virus], but again, if you're in that profession, you're more likely to be in contact with stuff than the general public" (Hannah).

Many felt that their licenses to be registered nurses required them to work during a disaster and could be jeopardized if they chose not to come to work.

> And, of course, because it's inherent in terms of providing care following both our regional values and guidelines for the program and the College of Nurses requirements and to document all of that. (Natalie)

> Well, I think because we are bound by a legislated agency, College of Nurses, and because of our skill set, I think that's sort of what sets us apart from let's say another health care professional. (Paula)

> And that's something that we agreed to, to care for people. That's part of our duty. So I don't think that we should be given the right to give up that duty as we choose. I can't. We can't. (Hannah)

Several of the participants struggled to come up with their own definition for a duty to care when they were asked.

> Janice: Can you describe for me what you understand to be your duty to care for a client or a patient and how you arrived at this understanding?
> Beth: So duty to care in the work that I do? (Beth)
> Janice: As a nurse.
> Beth: As a nurse?
> Janice: So definitely in the work that you do, but more generally as a nurse in your profession.
> Beth: I'm still trying to think about...okay. So my duty to care would be around advising someone what support I can offer and talking to them about confidentiality and that my mandate is that information is confidential. And—hmm. You need to repeat the question again.

> Janice: Sure. Just describe how you understand your duty to care-that's a common expression that's used by nursing as having a duty to care and how you have arrived at your own definition or understanding of your duty to care.
> Beth: So I think it's just my duty...I'm having a hard time with this. I don't understand why.
> Janice: That's okay, we can leave it.
> Beth: Yeah, let's leave it and see if we can come back. I don't know if I can put it into words.

Mary was familiar with the expression but admitted she really hadn't considered what it meant in terms of her practice. "Yeah, I have heard the expression, but I really haven't thought deeply about it" (Mary).

Although the participants struggled with defining duty to care when asked, when they shared stories about their nursing experiences or answered other interview questions, they often described a strong sense of duty. Their sense of duty was tied to their belief that they had a personal and professional responsibility to care for others.

> To be honest with you, I don't think it should be a personal, individual decision. I think to some extent, but in that case if everybody chooses not to come, then what happens? Right? And that's something we agreed to, to care for people. That's part of our duty. So I don't think that we should be given the right to give up that duty as we choose. I can't. We can't. (Hannah)

> But as a nurse, my duty to care-I guess when I think about pandemic planning, if the community needed me as a nurse, I would have to give my service, right? In an emergency or something out there that needed my service. So I guess it's a twenty-four hours a day, really, I would think. (Jenny)

> I know some people think being a nurse is just a job and they work, they do their shift and they're gone. I disagree with that, I do. I think as a nurse you have a responsibility all the time and...I just do. (Tryna)

> I think we should all have a duty to report to work when you're talking about something as fast as a pandemic...I believe it's just as important for a public health nurse and public health to be there. (Vivian)

> To refuse, I am not sure we have the right to refuse if we are worried about own safety . . . (Laurie)

> Yeah, I would say that the majority of nurses do have that feeling that they are nurses and have that responsibility. . . (Kendall)
>
> I would feel obligated to report, like go to work, to do something. (Beth)

Other nurses were very definite about what their duty to care was.

> Duty to care is you always arrive on time ready for your shift or assignment and accept your assignment whatever that assignment is unless you are not able to do it safely and you have a duty to report and then be there for that whole day of that assignment. (Laurie)
>
> My duty to care for a client? I guess what I would say is my understanding of my duty to care is that I provide the absolute best care, help, assistance, whatever you call it, that I can, that I'm able to and within the confines of my profession and to understand when somebody else has to take over; not to overstep those bounds. (Olivia)

Although ethical, moral and professional codes were found in their answers and stories, they were not the most important factors in their overall decision-making when the participants considered whether or not they would show up during a pandemic.

Theme 3: Blood

The theme of "blood" captured all the things that bind people through their family relationships. A definition of blood given in the dictionary was "related through common descent, a family relationship and kinship especially the parent-child relationship" (Retrieved June 6, 2009, from http://www.merriam-webster.com/dictionary/blood). This proved to be the most poignant of the themes in their stories and the one that I found would most interfere with a public health nurse's professional duty and her ability to report to work.

How a family is defined is different for everyone depending on one's own worldviews and personal experiences. Hannah recognized that defining who someone's family is, is not always straightforward:

> Because who is your family is not necessarily what we define as family. It's what you define yourself, right? And I'm thinking some people have dogs; they have cats. And that's really important to them, right? And even though somebody's not married or doesn't have children, again there are other significant people in their lives. And so it will impact everything. (Hannah)

For the participants that were interviewed, family members were identified as children (adult and dependent), spouses, partners, parents, parents-in-law and grandchildren. However, a number of other significant relationships were identified by the participants, relationships where they had responsibility for care and this included dependent siblings (mentally challenged), personal and dependent friends and pets.

Common codes and subsequent categories for the blood theme are displayed in Table 4 (see Appendix H).

One of the criteria for participant selection was that the participants had to be in a relationship or providing care to someone. Therefore, all the public health nurses interviewed were fulfilling some type of caregiver role. The two most significant factors that were found in the data that would interfere with a nurse showing up for duty included 1) if they had very young dependent children (this included young grandchildren and/or being pregnant); and 2) if they had a sick child of any age (including independent or adult children). Nurses who had young children expressed a strong maternal instinct to protect, comfort and be with their children. They were reluctant to be on the frontlines of a pandemic response where they could be exposed to a virulent virus and possibly take that virus home to young children. One participant who was in her first trimester of pregnancy had a revelation during the interview that if she was required to work during a pandemic now, it could have an adverse effect on her pregnancy outcome.

Young children.

Anna, who had several children with the youngest being two, said this about the responsibility she felt for her young children:

> Well, again, as a mother we would always put our children first. There would be no question that I feel that's my responsibility in this world, to take care of my own children and to look after them. So that would be my first conflict. In knowing that my husband is quite capable of caring for them [laughs], quite able to do that and we have quite an equal relationship and it wouldn't be that he wouldn't be able to care for them and provide meals for them, and all of that yet too. But I think if I was here and you would worry if they were okay and if they were scared, and you just want to provide that motherly role yet too. (Anna)

Anna recognized that during a pandemic, there could be a conflict between her professional duty and her duty to her family. However, she had no doubt that her greatest duty was to her family.

> Well, there would be the conflict, right? I do have a professional duty, but when there would be given a choice on whether my own children and my husband were safe and whether I could potentially, you know, contract anything and then make them vulnerable, then I would be quite concerned that even though I do have a professional duty, then I would tend to think that I would put my family's needs first of course. (Anna)

Sarah, a new mom who had just returned from maternity leave a few days prior to her interview, felt very conflicted about being exposed to an infectious disease and what this might mean for her baby.

> ...but I don't want to be exposed to an outbreak with a new baby. That's being...I know I'm just being honest. And also before Tyler [baby and pseudonym] came along, I think I would've been a little bit braver, like say, what was the thing that happened? SARS, oh my God. Yes, I remember thinking about that and thinking such brave people going into that. And I think I would have been a lot braver had I not been married and no children. But all of a sudden, I don't know what happens. It must be chemically or something that you change with, I think getting married too and having a baby. I just realized there's more at stake now, and if I put myself at risk it also puts my family at risk. It's selfish I know but I now put my family before my job. (Sarah)

> . . . I think I've put a limit now. It was different before I was married and had Tyler, but now I put limits as to what I would do. And I don't know if I was told that my job was at stake, I think I would probably say that's fine. (Sarah)

> It has changed. It just...I guess work used to be my number one before and I would've done whatever they asked me. And it's not that I didn't value myself, but I would've put myself in any situation if I thought it would help. But now I think my family needs me. I consider family more important . . . (Sarah)

Hannah who had four young children with the youngest being just two, also felt that if she had to make a choice between work and family she would have to put her family first.

> I think it definitely does impact. For sure, no question. They're first. They come first. I'm an individual. I'm a wife. I am a mother. I have so many hats....And our families are always so close and dear to us. Not that our clients are not, but we are emotionally attached, so attached to them. So definitely if I were asked to make the choice between the two, I would definitely opt out of working in that kind of situation. . . . I don't know if I can really be forced to work because I probably would not. (Hannah)

Vivian shared a personal story about an emergency that happened in her community. When she was called to work additional hours during the crisis, she had to refuse to stay home with her infant daughter. Although she was excited about the idea of being involved with an emergency response, the realities of her personal situation forced her to decline when called. Fortunately, the call-in was voluntary and the situation was over in a short period of time.

> I had a baby. I said, you know what? You've gone through one day of this. I can't. I have to stay home with her. So it puts me in a Catch 22, because it was really exciting to think you could be doing something to help people on a mass scale, and then the next thing to realize that no, you know what, family foremost. (Vivian)

Isabelle, who was pregnant at the time of the interview, reflected on what it would be like to be pregnant during a pandemic and how her priorities would change.

> If I was pregnant again. Like if we had a pandemic right now, that would be tough because then it's not just me, and that's putting myself at risk. It's putting the baby at risk as well and that would be a lot tougher. (Isabelle)

She also thought about the future when she would have a young, dependent child at home. She realized that it would be a difficult choice if she were called to respond to a pandemic with a young child at home. "...but say in a year and a half or so, kind of thing, I've got a one-year-old at home. That makes it a lot tougher because it's like, well they need a mom" (Isabelle).

The following is a thought-provoking story shared by Vivian that demonstrates how mothers have such a strong maternal instinct to protect their children and how as life changes so do one's priorities.

> I went on a cruise with my husband. The first time we went on a cruise, and they take you out and they do like a disaster planning, right? And they put your life jackets on and they move all the women to the front with the kids and all the men to the back. And I said to him, "There is no way I would be getting on that boat if you were standing here." And the next year we took my kids. And they moved all the women and children to the front and they moved my husband to the back and I said, "You're going to drown because I'm getting on with the kids...see ya." But it is amazing just in that little thing how your perception, the perspective is completely changed. It's funny, isn't it? There's no way if it was just him and I, I was leaving him behind. But the minute that my kids were introduced, sorry. (Vivian)

Older children.

Participants who had older children were more comfortable in thinking they could leave their children at home to go to work during a pandemic. These nurses felt that their children were fine left at home in either the care of the father, a relative or in some cases in the care of the child themselves (depending on the child's age).

> Everyone's healthy in my immediate family and they're almost like grown up. You know they can fend for themselves. So no, there's nobody to keep me at home or whatever. (Paula)

> I think if it's my children or my husband, I think I would make the others be the caregivers, make sure we've got the ginger ale all the time and all the fluids. You know take care of yourself. Here's your --I love you. Watch this video. I'll call you later and come to work. (Wendy)

> I mean, we have two teenage boys. I mean, will they eat great when we're working long days? Not great, but they'll eat so I don't worry about that so much. (Ellen)

> I think at this point my kids are at an age where they can manage independently pretty well on their own, so it's not a matter of, I have to be there to provide care for them. (Natalie)

Mary, who had teenaged children, suggested that if she was exposed to the virus and died, it would be okay because her children could manage at their age without her.

> My kids are at a point that I wouldn't worry about myself on the frontline in terms of dying myself. I don't--they don't need me anymore by the time that happens if I'm not there. (Mary)

Mary goes on to say the following:

> I think because my children have reached the point of no return they may return but...they're independent and don't need me...They might not even be living with me at the time of the pandemic, so I'm not stressed in any way about how that would affect them because they would have lots of options. And phone and email is such a great way of communicating now, we don't really need to see each other. Get the web cam out. (Mary)

Other participants felt that they would be comfortable leaving their children with an extended family member so that they would be available to work during a pandemic.

"I do have family. My parents could take care of the children if I had to go to work . . ." (Ruth).

> Or if we had to put real strong measures in place, then I would...shove them all at my parents' place and I won't see them till it's all over type of thing. But, you know, if it has to be that extreme, then I will do everything that I can to make sure they're safe and sound if I have to be at work. (Fran)

> We have three sets — my in-laws just live down the road from me and my mother doesn't work so she's available to come pretty much at the drop of a hat. My sister also lives close and she has a generator and she's capable. And my

> parents don't live far either so they would also be able to help out and nobody would be surprised if I called and said okay I'm at work and I have to stay because of this, this and this and you do this, this and this and my kids would be comfortable going to any of those homes and be fine. (Tryna)

Ill family members.

Participants with older children or elderly parents expressed that they would be comfortable leaving their family members in the care of others if they were well. However, if their family members became ill, they felt their duty changed and their priority would be to look after the ill family members. This belief that their primary duty was to an ill family member was unconditional and applied to all children (regardless of their age and stage of life), grandchildren, parents and husbands or partners. This belief held even for adult children that were living independently and at a distance.

> I think another thing would be what is going on in my family? Because, yes, my job is important. The people in the community are very important. But nobody is more important than my family. So if it's going to be...for example, if one of my children fell during the pandemic, I mean everything is off. That's the priority and that's my reality. (Vivian)

> My duty to care for my children or my husband if they were all affected by that would be number one as compared to coming and helping with this. (Hannah)

> My family would have to come first and I might feel terribly guilty about it, but if my children or my grandchildren or my mother or my husband needed me, I would have to look at their welfare first. (Olivia)

> I think that's probably the biggest one is that I'm protecting my family and if they have it, I need to be there helping them hopefully get over whatever they need to get over. (Carly)

Mary, who had earlier mentioned that her children were older and did not need her, had this to say when asked what would happen if one of her children was ill: "Right. Then I'd be torn, wouldn't I? I wouldn't be torn. If they needed me, they would be the priority" (Mary).

Laurie, who had two adult children, stated: "I think if they needed me I'd be with them" (Laurie).

Similarly, Dara, who also had adult children, stated:

> Well, my family always comes first, although I've been a very loyal worker. But my kids are old enough that...and two of them are probably going to be actively involved in it themselves kind of thing [both in a health care role]. And my husband is a pretty independent person. But I think if they ever faced an illness, it would be a real conflict if they were seriously ill and they needed some help. How could I blend the two together? And I think ultimately, one has to fall on the side of the family. I hope it's never to that strong degree. (Dara)

Others talked about the responsibility they had to other family members not just their children.

> Well it would be the care of my own children, but it would be my parents also. Like it would be what would be going on with them...So it's not just solely your children, right? It's all your extended family responsibilities also...if they were to get influenza or something like that, that would be quite concerning yet too. So it would be making sure they were alright also. (Anna)

> Right. I guess part of me-I'm well. I come to work. My fear is am I going to take it home to my family? And the fear more, I'm going to take it home to my aging parents. My children, my husband-athletic--eat well, sleep well. They'll probably fight it off. So the worry would be more toward my parents, making them unwell, and I guess being torn that if I have a sick family at home, that my two individual sick family members are as important as the community at large and being torn that way. (Wendy)

> You know, possibly if one of my parents got ill and I had to go take care of them, that might be another responsibility that I might have to look after. (Natalie)

Olivia, who cares for an elderly institutionalized parent and is very involved with her children and grandchildren, thought that if she was well herself she would come to work, but she would come only if the significant others in her life were well. "Ah, yes provided my children and my grandchildren are okay" (Olivia). When asked how she would measure them "being okay," she replied: "If they're not ill, not needing a

nurse . . ." (Olivia).

Other family considerations.

Several other family considerations were identified during the interviews that had the potential to cause conflict for the nurses and affect their ability to report to work: 1) family owned businesses, 2) family farms, and 3) partners who were emergency responders or had other roles that would require an enhanced response during a pandemic, thus taking them away from the family home and care-giving responsibilities (pastors/ministers, undertakers and police).

Dara struggled with another family responsibility. Her husband owned a business that would have increased demands placed upon it during a pandemic. Her concern was that if the demand for his business increased but the number of his employees decreased, she might have to work to support the family business and abandon her nursing role.

> I suppose I would be confronted with, for, in his situation if his staff doesn't show up, then I will be pulled in either direction. But sort of what's my responsibilities here and what's my responsibilities for him too? Because we own the business. (Dara)

Exposing family to the virus.

The participants recognized that as public health nurses they would be in contact with the influenza virus. Although they had some reservations about this, their concerns were more about exposing family members to the virus and being a possible vector for the disease. Wendy, who provided care to her aging parents, recognized the real danger was in exposing them to the pandemic virus. "My fear is- am I going to take it home to my family? And the fear more, I'm going to take it home to my aging parents" (Wendy).

Similarly, Ruth was concerned about exposing her young children, and Olivia

was concerned about her grandchildren.

> I just do not want to expose my children. It's being much more aware of any possible sort of risks or threats. So it definitely impacts the way I would think about coming into work. (Ruth)

> I would be really concerned about passing something on, especially to the little guys, you know the grandchildren. And I would just be paranoid about that. (Olivia)

For some participants, the fear of exposing their children or other family members to the pandemic virus was so great they would consider being physically separated or isolated from their family during the outbreak to reduce the risk.

> I would continue to work; I don't think that would hinder me from...Again...we haven't experienced a pandemic so...I cannot tell you exactly how I would feel at that time but from what I am feeling now I would come to work. If I had to be separated from them for a period of time, I would for the good of the public and everyone else. I think that's how we've always taken the role of the nurse. It's always been like that so. . . (Kendall)

> My feeling about my family is, if we're in a pandemic and I'm at risk here, I don't want to go home. I would prefer to stay here for the duration rather than take the chance that I could bring something home or those kinds of situations. I've often looked at it thinking if something happens, I'm pretty much gone from the home. (Ellen)

> You know if I couldn't be in contact with them because of just my particular exposure or something has happened, I'd make sure they were somewhere safe where I wouldn't be contaminating them. Or if we had to put real strong measures in place, then I would...I've talked to the...shove them all at my parents place and I won't see them till it's all over, type of thing. (Fran)

> Probably staying away from my family then, if there was any risk to them, which would be hard. (Fran)

Laurie, who provided care to her aged and institutionalized parents, also felt she could be separated from them to ensure that she protected them: ". . . but I certainly wouldn't want to risk taking anything to them so it would mean that I wouldn't be able to see them as regularly" (Laurie).

Theme 4: Head

The final theme that emerged I labelled "head." Head is defined by freedictionary.com as "the seat of the faculty of reason and intelligence" and "freedom of choice and action" (Retrieved June 6, 2009, from, http://www.thefreedictionary.com/head). This theme was used to represent all the codes and categories related to the nurses' critical and logical thinking about the situation that they would be facing during a pandemic. The participants recognized that as a professional group, they had the skills and knowledge needed in responders. Using their assessment skills, they identified concerns and barriers that would affect their ability or willingness to work. Similarly, they were able to identify measures that their employer could institute that would make it easier for them to report for duty. Common codes and categories found in the data and are captured in the 'head' theme are listed in Table 5 (see Appendix I).

Qualifications.

The participants felt empowered to respond to an influenza pandemic because of their body of nursing knowledge, their specialized nursing and public health skills and their confidence in their ability to be quickly trained for new jobs and tasks. They felt secure knowing they would be equipped with personal protective equipment (PPE) and they believed that using effective PPE combined with their nursing knowledge prepared them to deal with a pandemic virus. They recognized "if not me, then who?" (Reid, 2005, p. 352).

> I think my point, my main point is that we work for public health and that's our responsibility and it makes me very frustrated when we sit in meetings, and I hear people giving all kinds of excuses, about whatever, their hours, their dog, their this, their that. The fact of the matter is we work for public health. The fact

> of the matter is especially for nurses. Nurses and doctors — we have an obligation. We have knowledge and skills and we can make a difference and I just think that at the end of the day, there should be no discussion about that and...and there should be no room for that type of selfishness because that's really what it is and that's not what we're called to do when we become a nurse and it's certainly not what we're called to do when we work in public health. So that's that. Show up and do your work and zip your lip. (Tryna)

The participants also verbalized confidence in their ability to learn or adapt to new jobs, roles, responsibilities or skills that would be assigned to them during a pandemic. Despite working for public health and being somewhat removed from traditional nursing tasks, they were receptive to being assigned clinical nursing duties. They expressed a willingness to be placed on the frontline during a pandemic and were confident in their ability to use their nursing skills in combination with personal protective equipment (PPE) to keep themselves safe.

Tryna could not think of any reason that she would not care for someone and felt confident using her nursing skills and whatever safety equipment she had available to her. "I think I would use any safety precautions we knew how to use and then I would go from there. I can't think of a good reason that I wouldn't care for somebody" (Tryna).

Paula felt that there are two levels of protection in place for her as a nurse during this type of disaster. The first was her responsibility to keep herself safe and the second was the employer's responsibility to keep her safe. Interestingly, she trusted in herself first and foremost. "But I just mean that I think first of all, I would look after myself and I have confidence in myself to do that. But I also trust myself, is what I'm saying. So it's first me, then them [employer]" (Paula).

Hannah felt that nurses would respond and focus on the tasks that needed doing and despite the risk, they would follow the policies in place to do them safely.

> A part of me thinks, if you are already in the situation, you make the best of it, right? You do the best that you can....Yeah it's almost like a robot. Sorry to say that, but you're just really focusing on the task that needs to be done and it's a serious situation. So the focus is maybe trying to make sure you are in a gown, so you're thinking of the steps because that's also policies within an institution that are reminding you, because you need to do them to protect yourself. (Hannah)

Laurie suggested that nurses have a responsibility to be prepared, informed and trained and to take ownership for their own safety. "I don't think it's any different; you just have to be well informed and educated about the best way you can to protect yourself" (Laurie).

Wendy, Fran and Dara believed that they could be asked to do things they may not know how to do or have ever done before, but they were confident that they could take on new roles with minimal training.

> I know that I'll be asked to do things that I have not necessarily experienced or gone through. I think my nurse training will help us, kind of, adapt to that or take on that little bit altered role with some training or briefing or whatever needs to happen. (Fran)

> But we also feel that as being nurses that we'd be able to give a vaccine, be able to quickly be brought up to speed and be able to get back into doing that. (Fran)

> I think everyone would have to help out everyone else. So if that's what was needed, I wouldn't want to have to get back to old clinical nursing skills. But I am sure I could cover a little bit off. (Dara)

Wendy thought that she may be "pulled into a nursing home" to do duties there and responded, "It wouldn't bother me at all. People need care and we have to provide it" (Wendy).

Preparedness, education and training.

Most of the participants had very limited knowledge of the preparation their health units had done for a pandemic and had received little education or training for the specific roles that they could be assigned. When asked what types of training or preparation they had received for these roles, Isabelle and Natalie said:

> We haven't really had anything. I don't think. It usually comes down when it happens, then we'll . . . yeah we'll get a memo or something like that about what we need to do. We haven't had anything. (Isabelle)

> Well, I would say none at the moment. So we haven't seen any in terms of a temporary alteration of our job descriptions or we haven't been given a set of roles. . . . So I actually haven't seen any distinction of roles or expectations of what we would be required to do. (Natalie)

When Jenny was asked about the planning that had taken place at her health unit for an influenza pandemic, she was confident that the planning had been done, she just was not familiar with the content.

> I know there's a whole policy protocol around it. I guess there must be a whole hierarchy about what would happen if this happened and who would need to help if this happened how we are going to get through it. It's all laid out step by step and there must be a book someplace. I don't know where that would be, but I'm sure I could go and get my hands on it if I needed to about knowing what to do. (Jenny)

Olivia also believed planning had been done at her health unit. She just was not familiar with it.

> I haven't been officially informed. There is a link on our Internet site, which I have to admit I have not read. I've read lots of other things, but I haven't read that...I do know that there's also information for the public on there that they can access through the Internet site. And I have to admit, I have not read that either. (Olivia)

Mary admitted that she had many questions about what the pandemic response would mean for her.

> I can't even go there in my head, just because I haven't been privy to any pandemic discussions and have no idea what massive scale it entails. So to be able to formulate a question, I don't know. Will they have to bring cops in here? Are we going to have to sleep here? Will I have to pack for two weeks? Like what does it mean? Will I get bonus pay? Danger pay? I don't know. (Mary)

When asked if she had anything else to add or a comment she would like to make, Mary added:

> No, other than if the experts are certain this will happen, I think that as professionals who may be on the frontline, we need to have a little bit more foreknowledge, be one step ahead of the community. And basically my knowledge is just from reading the newspaper, so I think it's like a layperson's knowledge. And that's kind of a shame when you're a public health professional . . . (Mary)

Most participants believed they could be trained very quickly and were not anxious about their lack of preparation, although they did feel it would be prudent for their health units to begin sharing more information around their organization's pandemic planning and specifically the roles that would be assigned to public health nurses. Vivian described how she felt her organization always had to play catch-up when public health events unfolded and how she felt preparation and training for a predicted pandemic were needed.

> I think probably my concerns would be right now, before it happens, we need a solid plan—as solid as we can get. We need to know what is expected of us. We need to know [what] sort of resources that are available to us because I think you look and you see things that have happened in the past. And it always seems like we're playing catch-up and you lose things and lose people in that attempt to play catch-up. So I think that's my biggest concern is well, number one. What do you expect from me in regards to working and in regards to my role? And how much of this have you got planned out? And maybe we could do some mock disasters or whatever? Because I think...I know it's never going to be the same as when you are actually in a disaster. (Vivian)

Ursula, a relatively new nurse and inexperienced in public health, felt that having mock-disaster exercises would be beneficial and help her to understand what her role in a disaster might look like.

> I just think the preparedness piece is key and there's so much I feel, talk and discussion around this lately just based on what has happened in the past but I think it needs to factor down to all of the levels and everyone needs to feel comfortable and confident actually being part of a scenario like that and just like I mentioned before, I think and even examples and these mock exercises which I know are taking place I think it would be very helpful to get involved in something like that cause it's hard for me to break it down into exactly what it is I would be doing and I know it would be different in every case and every situation. (Ursula)

Olivia was willing to work during a disaster but her expectation was that the administrative team would be as prepared as possible and that staff that was expected to respond, would be educated as well as prepared in advance.

> I'll come. You make sure that you're as prepared as can be. Make sure that everybody that's working is as educated and as prepared and as aware as they possibly can be; and that is the responsibility of the people that are running the show to make sure those beneath are well-prepared...so I think that is where it would start — is to ensure that staff in whatever capacity is educated, has enough information to do their job properly and safely...So yeah, I think that is really important that we have to know what we're doing. We have to be prepared. I think, in the preparation. (Olivia)

Others like Mary and Anna wanted assurance that they would be provided with high-level information at the time of a pandemic so that they could critically evaluate the situation for themselves. Having the most current and accurate information and the opportunity to evaluate the information would give them confidence in taking on their responder roles.

> So, I need to have a lot more information from the experts and to have confidence that this is the right way to manage the outbreak. So I'd have concerns that would need answering big time before I could buy into it...
> I need to have my employer educate me fully or be made aware fully. And I think that they didn't have enough information soon enough to protect the nurses

> [referring to SARS] or they weren't listening to the nurses making the assessments and knowing that. So I'd have to have the confidence. (Mary)

> I don't want someone to give me a generalized kind of fluffy answer. I want you to be straight with us and tell us...give us regular updates on what is truly happening and just to be yeah. . . . I think when people's questions are not answered and they don't have the knowledge, then that, of course, generates anxiety and panic and all of that. (Anna)

When asked to describe what additional measures should be taken and by whom to ensure her safety during a pandemic, Hannah said:

> The things I can think of up front are is making sure we have equipment, and I know we already have it. We have some sort of equipment that we already have available and I'm sure there is. . . . I think my concern would be to find out more about what my involvement would be too, in terms of how...I know there was a Walkerton thing that happened that people had to be called in. People had to put in hours. It's not an easy thing. It's not an eight to four kind of situation at all, and I think it would be great to have the information as to what the expectations are, specifically around what we have to do, where the equipment is. I'm sure the planning has been done. (Hannah)

Later, when she was asked about the preparation or training she had received for the roles that she might be assigned to, Hannah said: "I don't have a lot of detail about that particular area -- I would like a lot more information about that for sure" (Hannah).

The participants believed they would respond to a pandemic as long as they felt they were knowledgeable, kept informed and had training for the roles they would be assigned. They also wanted to know that they would have access to supplies of personal protective equipment to ensure their safety.

> And I think that....so as long as I felt that I had the proper supplies, sort of things to wear, if I needed to have training or education on how to do something, then I would have that, As long as I felt that all my bases have been covered, then I think I would feel secure coming in during the pandemic. (Ruth)

> I know there had been talk about purchasing masks, like fitted masks and stuff like that. I don't think that's gone any further, you know, that there's gloves and stuff like that. But that's something that I think that I would want to make sure that I'm physically protected so that I wouldn't be catching it and know for sure

> that I would be getting you know, would the medication [Tamiflu] actually work? (Carly)
>
> I don't have a lot of detail about that particular area, so I'm sure a lot about that and a lot in general about the whole pandemic and the planning and what it involves-I would like a lot more information about that for sure. (Hannah)
>
> If I didn't feel that I had the knowledge or skills to do whatever was required during a pandemic. Just because it was so different but I don't think or anticipate that would happen. Our health department is very good at ensuring you're prepared. (Laurie)
>
> I think number one would be comfort level for sure. Don't ask me to do something that I'm either not trained on or don't feel comfortable with, because I don't want to be putting anybody else's life in jeopardy. . . . But I would say, I mean giving an immunization-we're great. If we go beyond that, if there's actual hands on nursing skills, I would say I want some review for sure. (Vivian)

Human limits.

The participants recognized that although they had the skills, knowledge and were willing to respond during a pandemic, they knew that their participation would be ultimately determined and controlled by their own human limitations. The participants understood that they were human and that physical exhaustion and stress could overwhelm them, making it impossible for them to continue to report to work regardless of their desire to help. Beth described her fear of being overcome by the stress of working during such a disaster.

> I think my own health or my ability to manage the stress that that might actually create, you know? I mean, it's one thing to sort of go, "Oh yeah, I'll be out there. Rah-rah." But in reality I don't know. I don't know if I could...if I really, truly could manage the stress and whether I would just be overwhelmed and then almost incapacitated. I don't know. I don't know because I've never been challenged like that so, I don't know. But I think because I have such strong work ethics, so I know that would probably be the thing. Like I would be more apt to go until maybe I really couldn't function. But I think my own physical health maybe, and I don't know how I'd be affected emotionally. So whether or not I'd be able to...like I've never had a stress leave, so I'm not sure what would put me to the place where I'd say, "I can't do this." (Beth)

Fran also recognized that she could have a breaking point.

> I think I'm fairly healthy and could do the extra, although I will unravel at some point in time. I would need to take a break. I know I would burn out at a certain level. I don't know what that level would be, but if I was too tired then I wouldn't function well. (Fran)

Natalie and Fran recognized that there would be human limitations on what they could offer during a pandemic and felt that their contributions could be increased if strategies were incorporated that supported the caregivers.

> Well, I think I would say I would be glad to contribute as much as I am able and recognizing that if the requirement was working seven days a week indefinitely, I may not be able to do that. You know I may have to say that I'll work six and I need a day off. So as long as there was a degree of understanding and respect of personal limits of what people may actually be capable of . . . (Natalie)

> Well, I would imagine that if my stress were to get to a level that it would manifest migraines or headaches or other things that might indicate, or behavioural symptoms that would indicate I'm getting really stressed and then maybe I'm not performing to my maximum at work because of that, then that might be an indication again that I need to take a break or take a day off, or something like that. (Natalie)

Ursula, Hannah and Jenny recognized that it would be essential for employers to consider providing care to the caregiver as an important long-term strategy for managing a prolonged crisis. They felt if the caregivers were not given emotional support or physically taken care of, they would not be able to contribute as well or for as long.

> So, I think it's important and you know I don't think it's in a selfish way but if we don't make ourselves a priority too and take care of our health and our well-being then we're not much good as a service for others so I think that's very important. (Ursula)

> But I think just in terms of your own self-care, everybody has a point where they cannot take it anymore, you know, and what kinds of safeguards are there for that to make sure that we're okay to be able to do that? (Hannah)

> Maybe having someone to talk to about how you're feeling and dealing with this, you know some counselling. (Jenny)

Wendy understood that because the responders are human and have families, the response would be affected by their human limitations, thus the outcome might be less than perfect. "And I guess having everyone realize that we're humans too and we have families and we have children, and we're not perfect and we'll get through this together" (Wendy).

Trusting relationship with the employer.

Participants trusted that their employers would look out for their health and safety. They based this trust on previous work experiences where their health and safety had been protected by their employer. Others felt confident that their health and safety would be a priority because their health and safety committee was very visible and active in their organizations. Based on positive past experiences, the participants felt that they could trust their employers to look out for their health and safety during a pandemic. Anna expressed this thought about trusting her employer: "I do trust the people I work with. They would not send us anywhere where we would be in grave danger" (Anna).

Paula felt that health and safety were important issues for her employer and she was reassured because their health and safety committee was very active in her health unit.

> But I also, in terms of health and safety issues, I think because our health and safety committee is in the forefront here, I would also trust the employer. I mean, they wouldn't let us go out without the proper masks or gowns or whatever we're supposed to be wearing. (Paula)

> I trust my employer with this—that they would make sure that we were prepared, that we wouldn't be put into a situation that we would be put at risk. (Paula)

Isabelle was reassured by the fact that in the past she had been advised by her manager to trust and act on her instincts when it came to her safety. She felt her manager's support was unconditional and would apply during a pandemic.

> We'll often be in situations that maybe aren't the safest and we've been told a thousand times, "If your gut is not feeling right you can refuse this, the visit, and maybe you can book it another time"...So they're really quite supportive about that. So if there's ever anything, we can refuse anything that we don't feel comfortable with, which is good. (Isabelle)

Anna and Ruth identified that there was a sense of openness and approachability with their managers and they felt that they would feel comfortable discussing any safety concerns with them.

> If we did come up with a problem, I would very easily feel I could go to my manager and speak to her about it, that we felt we had a personal conflict or that our safety was at risk or something like that. So I feel like that chain of communication is quite open and she would be very open to hearing that . . . (Anna)

> If I ever felt I was at risk-and that would be something that I think would be encouraged and felt comfortable discussing with my managers. Just that personal risk, and if ever I felt that my personal risk and safety was at risk, health and safety, then I would definitely be communicating that and I don't know that I would ever come in. (Ruth)

Employer responsible for their safety.

Although the nurses interviewed trusted their employers, they were also reassured that they had the right to refuse unsafe work and that this right was protected for them in Ontario's *Occupational Health and Safety Act* (1990).

The public health nurses wanted and expected a safe working environment and felt that it could be achieved by being equipped with effective personal protective equipment (specifically, N95 masks, gowns and gloves). They planned to come to work during a pandemic but they trusted that they would be provided with the right equipment

and that the supplies would be available to them for the duration of the pandemic. However, several identified that if PPE supplies were not available to them, they were not prepared to sacrifice themselves. They believed they would be assertive asking for the correct PPE and would be comfortable refusing work until the appropriate supplies were made available.

> I know that my employer and the province have an obligation to provide me the equipment to keep me safe, so the mask and the gloves and the gowns and so on; and I have a right to request or demand those and say then, "Yes, I'll do this when I have the protective equipment." (Ginelle)

Isabelle knew her rights as an employee and she knew that she had the right to refuse unsafe work.

> I would hope the employer wouldn't put you at risk because ultimately you do have the right to refuse unsafe work, right? Yeah. Right? So, unless they wanted you to be doing something and haven't put in safety precautions in order for you to do that because that is your right to safe work. (Isabelle)

> So, I think it would really depend on, was the region providing a safe work environment? If I could look at it and say, okay this is safe. Like we're taking all the precautions that we can. You know, we're gloving, gowning and whatever those precautions are, if we're taking those then I think I'd feel probably okay coming in. But if we weren't, no way. No. I wouldn't risk it. But as long as we could have—not that you'll ever have a guarantee—but have a pretty good sense that we're doing what we can, then I think that it would probably be okay. (Isabelle)

> Well, I think, what I strongly believe, hopefully, they will put measures in place to protect us. If they want us to work in a pandemic situation, and all the facts and information are present so that we are very well prepared for it. (Kendall)

Beth felt that the employee "grapevine" would alert nurses to safety risks if the proper precautions or safety equipment were not being used.

> But if you feel the precautions haven't...that there aren't the...the precautions haven't been taken into consideration, they haven't been researched, then...because word will get out. I mean, word will get out very quickly if we know that we're walking into something and those masks aren't going to protect you. (Beth)

The participants felt as long if they were provided personal protective equipment, they would feel more secure in doing their jobs and that if they were provided PPE, they had a duty to do their jobs.

> Are the N95 masks sufficient? I don't know, but that information, like that needs to be... we need to know that right? And that will maybe make a difference in whether someone says "Okay you know what? If I can pretty much guarantee that my own personal safety is not going to be compromised or that my health is not going to be compromised" I think the duty to report will be…or not the duty to report, but that people will feel more agreeable to probably reporting. (Beth)

> Well, I guess...I don't know. I need to know that I would be safe—that I would have like I mentioned what I needed to keep myself safe. I guess maybe if I didn't have what I needed to keep myself safe that would make me really uncomfortable. I'd be afraid. Just like those nurses that had to care for people in the hospital with SARS. But they didn't really know what they were dealing with, did they? So now we know that we have to make sure that people have what they need to keep themselves safe. So I think as long as I had that, I don't know if I could really…as long as I knew I was safe, I don't think I can say no. I don't think I could say no. (Jenny)

> But just really make sure those safeguards are in place before anybody starts doing anything, kind of thing, just to protect yourself. . . (Isabelle)

> Let's say there wasn't the proper isolation equipment and let's say we had run out for some reason; or let's say they really found a bad strain that they couldn't, you couldn't protect yourself for this, then I would think that would be the only time I would refuse. As long as I felt protected, I would be there. (Paula)

> So long as I felt that I had the proper supplies, sort of things to wear, if I needed to have training or education on how to do something, then I would have that. As long as I felt my bases have been covered, then I think I would feel secure coming in during the pandemic. (Ruth)

The participants were not concerned that they had not received mask-fit testing or any training on how to don and doff protective equipment. They felt 'just in time' training and mask fitting would be sufficient. When asked if she had any training or fitting for protective equipment, Ellen replied, "They talked about fit testing…other than

basic infection control, hand washing and those types of things, we haven't done a lot lately" (Ellen).

When asked what additional measures should be taken to ensure her safety during a pandemic, Beth was concerned about, "How do they protect me?" A follow-up question asked her if she had any teaching or programming to help keep her safe during a pandemic and she responded, "Not that I'm aware of" (Beth).

Dara recounted a story about how she had sat on a management committee that was looking into purchasing pandemic supplies. She related the issues that were barriers to stockpiling the N95 masks at her organization.

> I sat on our nurse-management committee and it was debated whether or not it was going to be very effective or not and a cost factor, getting it [mask] fitted for us outweighing whether we'd ever really hit a pandemic or that kind of thing. So nothing's been done that way…No, we haven't done that kind of training. (Dara)

Despite the lack of her organization's preparedness and personally not having been fit tested with a N95 mask, when Dara was asked if the pandemic hit tomorrow would she show up for work, she responded: "I probably…I'm not trying to become a masochist or martyr, but I'd probably show up" (Dara).

Fairness.

Another category that emerged from the data was the concept of fairness. Public health nurses were prepared to do their part in a pandemic but they believed that their responsibility to show up and work was no different than anyone else's. Many felt that the stressful work and long hours should be a shared organizational response, not just the responsibility of certain frontline nurses. The following quotes from Wendy, Laurie and Hannah capture the idea of fairness and how they feel it should be applied in the workplace during a pandemic.

> I would want the expectations to be the same for me as for every other nurse. I am often told that I have a high capacity for work and that's why I receive more referrals or do more presentations, and I wouldn't want to be doing more pandemic outbreaks just because I was good at giving an injection ...
> Why should I come to work if they're not? I want the expectations the same for me as everyone else. (Wendy)

> The circumstances...the risk, the work should be distributed equally across all levels of employment so it shouldn't just be the frontline people who are taking it all. (Laurie)

> ...I think the burden will be shared equally so that not one person is going seven days a week and other people are coming three or four days a week. I think that would be a concern. . . (Hannah)

I had disclosed prior to each interview that although I was a MPH student doing this interview for my thesis research, I also worked full-time as a manager at another health unit. Mary directed this question to me, which suggested she was concerned about fairness and believed there would be two different levels of the response and an unfair distribution of work: "Would you be on the front line? Or would you be happy sitting in an ivory tower directing frontline staff?" (Mary)

With this comment, she implied that the burden of work would be carried by the frontline staff while administrators would sit hidden away safe from the dangerous and stressful work in an "ivory tower".

Flexibility.

The participants felt that there were many public health tasks that could be done from home during a pandemic. They believed that if organizations offered flexible and creative approaches to doing the required work, it would make responding to a pandemic more manageable for public health nurses as they struggled with competing home demands. They recognized that it would be very stressful working during a

pandemic and felt that certain actions or concessions on the part of their employer could make it easier for nurses to report to work and/or complete their assigned duties.

One of the most common suggestions given to provide flexibility was to allow public health nurses to work from home. Olivia, Carly and Ruth felt that with today's technology, it would be possible for public health nurses to work from home and that building this option into a plan would be important.

> Perhaps the health department should be prepared to say, "Okay if you can't do this or can't go here, could you do this? Could you make phone calls from home"? I think the preparation has to be good enough so if those kinds of things happen that people refuse, we can look at another way of doing things. There has to be some flexibility. (Olivia)

> And maybe I could do the work from home too, like on the telephone or whatever, and I think that's certainly something that could happen too, with computers nowadays and everything. (Carly)

> Well, I think hopefully there could be some kind of compromise so that you may choose not to put yourself on the frontline if there's a risk, that maybe there's some other work you could do, whether it's from home. (Ruth)

Laurie recognized that it would be very stressful for nurses who would feel conflicted between being at work and staying at home and that nurses would feel even more conflicted if a family member was ill. She advocated for creative and family friendly solutions.

> It probably would reassure a lot of people to know they could just set up in their room at home, not expose themselves any further and still be available for family, if they're ill but not really too ill. I think they'll need to be very creative, the solutions very family friendly, taken into account. People aren't just employees; they have lives that are just as important to them as their jobs. (Laurie)

Other suggestions for flexibility included altered work hours, providing food and water onsite, allowing a more relaxed dress code and providing a break area that would give staff an area to rest and relax. Wendy talked about altering the workweek to allow

more time with family. She also felt allowing nurses to work in casual or comfortable clothing would make it easier for nurses and decrease their stress.

> I guess to be aware at that time, it would be very stressful for everyone, including health unit staff and maybe working four days a week instead of five days a week to allow us an extra day with our families might make a difference; allowing us to wear clothes that are comfortable like jeans and t-shirts. (Wendy)

Fran felt that altering the traditional workday would make it easier for some nurses to balance work with their family needs.

> And maybe being able to work something out that will work for everybody, maybe that particular nurse can only be here from seven in the morning until two in the afternoon, but she can come every day as long as she is well. Then those pieces should be put into place — that flexibility to make everybody's life work. (Fran)

Jenny felt that having food at work could be a practical piece that would make coming to work easier. This solution could also benefit the employer as nurses would not need to leave and run out for meal/nourishment breaks.

> Maybe if there was something that could be in place to make it easier to come to work. I don't know what that would be, but making sure about food and not having to worry about going out to buy food. Making it easier that way. (Jenny)

Hannah felt that there needed to be things in place to assist with taking care of the caregivers. She suggested a rest area onsite so that nurses could have a restful break during the chaos of the day.

> But just having access to the facilities that will help people rest up and do, like even if it's a twelve-hour day, you can have a break in between a good chunk. A little break. And you can do a little bit better. (Hannah)

Nurses also identified a need for systems facilitated by the employer that would allow them to have regular contact with their families. During a pandemic, the workday could be long and busy and office phone lines could be overwhelmed by incoming calls from the public. Both Tryna and Fran believed that if they had designated telephone

lines and times to speak to their family, it would decrease the stress they would feel from being separated from their families for prolonged periods.

> . . . as long as I could call home every few hours I'd probably be fine like I think the big thing for me is I would still have to be accessible to my family by telephone and I would expect they wouldn't call me for little things. . . (Tryna)

> And I would like to be in contact with my family by phone, like having certain amounts of time that I would be speaking to them. (Fran)

Chapter 5: Discussion

The purpose of this study was to offer insight into a public health nurse's perception of her professional duty to care and how that duty might be affected by personal considerations during an influenza pandemic. The study addressed the following questions: 1) What are public health nurses' beliefs, attitudes and values about nursing and their professional duty to care?; 2) What are the factors that will impact their duty to care?; 3) How does being female in a female-dominated profession affect these factors?; and 4) How might a public health nurse's concept of duty to care differ from that of another health care professional?

The findings indicate that public health nurses have a strong sense of professional duty, which has developed over time and incorporates their beliefs, values, ethics and training and is further influenced by their work experience and interaction with peers, colleagues and patients. Their sense of duty has also been reinforced by their socialized understanding of what nursing is and how nurses should act (Fagerberg & Kihlgren, 2001; Kirpal, 2004; Watson, 2009). Although their sense of duty begins with their core identity and the values of caring and compassion, it has been influenced and further developed through constant interaction with their peer group within their work environment and from their progression across the continuum of professional development from a novice to expert nurse (Benner, 1984). The nurses' perceptions of duty are also validated by society's expectations of the nursing profession. During this research, several factors were found to have the ability to interfere with a nurse's commitment to her professional duty to care. The main factor was associated with her

social role as a mother, especially of a dependent child. A nurse's perception of duty and her commitment to duty were more likely to be adversely affected if the public health nurse was pregnant, breastfeeding or caring for an infant or young child. However, it could also be affected if a family member was ill and required care. The women in the study felt their primary responsibility was to their children, which is consistent with current social views and cultural expectations for appropriate behaviour for the mother role (Duncan, Edwards, Reynolds & Alldred, 2003).

Being female in a female-dominated profession made the participants more sensitive to the social (mother) role obligations of a nurse that could interfere with professional duty. It also made them more empathetic and supportive of colleagues who might be forced to choose between their professional and their maternal duties. These public health nurses did not feel that their sense of duty differed from other health care professionals, especially other nurses. However, in their stories, they recognized that there was a difference in how other health care workers perceived duty, especially when their own health was at risk. They described others [physicians and emergency service workers] as having a stronger instinct or need to protect themselves first, even if it meant risking the client's well-being. The participants believed that under normal working conditions [non-pandemic], a nurse in the workplace would respond to a client/patient's needs first. This was based on their personal and professional ethics, their commitment to their nursing role and how they believed nurses should act based on their membership within the nursing community and their desire to live up to their professional responsibilities (Brown, 1996; Fagerberg & Kihlgren, 2001; Watson, 2009). Their beliefs about how nurses should act have been socially and culturally

constructed over time and have been influenced through their training and interaction with nursing colleagues and mentors (Kirpal, 2004). The influence of social expectations are important as nurses are measured against society's image of what a good nurse is and expectations for what a good nurse does (Kirpal, 2004). Although the nurses interviewed in this study did not specifically reference their nursing education, the literature suggests it is a significant contributor to developing a professional identity grounded in caring (Apesoa-Varano, 2007; Sawatzky, Enns, Ashcroft, Davis & Harder, 2009). Instead they used terms like 'the nursing way' and referred to mentors, colleagues and the nursing regulatory body as rationale for their commitment to clients and their beliefs about duty.

Literature Support for the Themes

In the findings, participant quotes were used to support the codes/categories that led to the conceptualization of the four prominent themes. I will now demonstrate how the themes of 'heart,' 'head,' 'soul' and 'blood' are supported by existing literature and have laid the groundwork for the theory I offer.

Heart.

The literature describes caring as the heart, essence and the core process of nursing (Apesoa-Varano, 2007; Lewis, 2003; Morse et al., 1990; Saewyc, 2000; Tourville & Ingalls, 2003). Leininger stated that "epistemologically and ontologically care is the essence of nursing and makes the profession what it is" (cited in Clarke, McFarland, Andrews and Leininger, 2009, p. 234). Other theorists describe nursing as a science of caring (Dunlop, 1986) or a caring practice (Spichiger, Wallhagan & Benner, 2005), while Gastmans (1999) suggested that "nurses gain their identity not only from

the set tasks that they perform but also in the way they commit themselves to the caring process" (p. 215).

The value that nurses have attached to caring as a significant part of their professional identity helps them understand the importance of their pandemic roles and strengthens their commitment to caring for their clients and community. They could identify with the care needs of their clients during a pandemic. Benner (1984) refers to this as "otherness" when a nurse can think of herself in the same difficult situation as the one they are caring for (cited in Dunlop, 1986, p. 663).

Viewing the community as their client (Racher, 2007; Smith & Bazini-Barakat, 2003) gave the public health nurses a great sense of responsibility for the entire community's well-being during a pandemic. They recognized that they had important nursing knowledge and unique public health skills that would be invaluable during a public health disaster.

Nursing is considered a caring profession and caring has been described as central to nursing. Historically, caring has been perceived as a female trait (Apesoa-Varanto, 2007) and nursing as 'women's work'. Although caring is an important part of the art of nursing, the participants that were selected for this study were chosen because they had competing caring and nurturing roles outside of their professional nursing role. The literature suggests that multiple identities can affect one another and that the professional identity may be affected based on life events and the competing responsibilities one has as a family member (Majomi et al., 2003). The participants' real-world lives and experiences as women and mothers allow them to be nurturing and caring in their personal lives but they also reinforce the importance of caring in their

professional role (Spichiger et al., 2005). However, the expectation for women to be nurturing, caring and committed in both their personal and professional roles can create stress especially when both roles compete in importance (Majomi et al., 2003). The importance attached to caring professionally and personally, and the conflict created between choosing to care as a mother and to care as a nurse, was a major category revealed during data analysis and supports the use of heart as an important abstract theme.

The 'heart' theme also included bravery as a category, which is associated as a trait of the heart in the real world. Participants provided numerous examples of risks and threats they faced regularly to provide care to their clients. This is consistent with the findings of Skillen, Olson and Gilbert (2001) who found that public health nurses were commonly exposed to, and accepted, psychosocial, physical, safety and biological hazards. Other literature has found that occupational hazards and infectious disease threats are common in nursing and that nursing is a hazardous profession (Karadeniz, Gunduz, Altiparmak & Yanikkerem, 2004; Kondro, 2007).

The study's 'heart' theme emphasized that nurses cared about their clients, community and colleagues; they felt a duty to their employer and felt an ethical duty to care for another person in need. Empathy expressed toward their colleagues was consistent with findings by Wong et al. (2008), and the codes found for caring were consistent with the themes identified by Voelker (2003) that make up nursing ethics: 1) the moral foundation of the nurse-patient relationship; 2) the ethics of caring; 3) organizational and interdisciplinary relationships; and 4) theories of nursing ethics.

The codes/categories uncovered in the data and captured by the 'heart' theme are supported by numerous findings in the literature on both caring and occupational hazards in nursing and validate the use of 'heart' as an important conceptual theme.

Head.

The theme 'head' captured codes that either represented a barrier to responding or would act as a catalyst for action by the nurses. The nurses were receptive to accepting any response role if they were adequately prepared with training and information. This is similar to the study by Tzeng and Yin (2006) who found that when health care workers felt prepared with education, information, training and knowledge, it contributed to positive attitudes and receptiveness to working during a disaster. Other studies found the inverse — if health care workers felt poorly prepared, they were less receptive to working during a crisis (Balicer et al., 2006; O'Boyle et al., 2006).

The participants in this study believed their organizations would ensure their safety during a pandemic, but if essential supplies were not available, they were unwilling to work. This was consistent with studies that found that fear for personal or family safety or inadequate personal protection supplies negatively affected a worker's willingness to work (Levin et al., 2007; O'Boyle et al., 2006; Tzeng & Yin, 2006).

Trust in their employers that had been built up by previous positive experiences diminished any concerns about being uninformed, untrained and unprepared for an influenza pandemic. This is consistent with the findings by Gershon et al. (2007) who found that a pre-existing safety climate was the strongest correlate to a health care worker's willingness to provide care.

The risk of exposure to infectious diseases and occupationally acquired infections in health care workers is well-documented (Gershon et al., 2007; Hseih et al., 2006; Sepkowitz, 1996; Sepkowitz & Eisenberg, 2005; Seto et al., 2003). Nurses in this study applied critical thinking and logic to assess their risk of infection from a severe influenza and felt it was small enough to accept. However, they were clear that a lack of PPE at the time of a pandemic would ultimately affect their decision to report. This was consistent with Tzeng and Yin (2006) who found that during SARS, the nurses in Taiwan resigned because their health care organizations were not stocked with the necessary infection-control supplies.

Flexibility and fairness were two other important categories that supported the conceptualization of 'head' as a theme. The fairness finding was consistent with studies, which found that health care providers expect that the risk and burden of response will be distributed fairly across an organization (Bensimon et al., 2007; O'Boyle et al., 2006). Desiring flexible work options and other family friendly considerations were consistent with findings in the study by O'Boyle et al. (2006). They found health care professionals wanted access to quiet rest areas and the ability to communicate with their families while at work.

The participants in this study expected that their organizations would protect them and ensure their safety. Intellectually, they knew information, training and PPE were required on the part of their employer. The literature supports that employers have a duty to protect their workers through stockpiling PPE and antivirals and providing response-appropriate training (Emanuel, 2003; Kotalik, 2005; Tomcyzkma et al., 2008). Participants were willing to accept the responsibility for new clinical nursing duties

during a disaster as long as they received appropriate training. This is consistent with findings that suggest health care workers are more likely to report for duty if they are provided with the education, training and equipment needed to protect themselves (Emmanuel, 2003; Mackler et al., 2007; Tzeng, 2004).

The codes used to conceptualize the 'head' theme are consistent with previous literature that has found health care workers want additional training and preparation for emergencies, desire flexibility and fairness, and expect psychosocial support as well as confidence in the preparedness of their employers (Balicier et al., 2006; Tzeng & Yin, 2006).

Soul.

The theme 'soul' represented categories and codes associated with the participant's core values and moral and ethical feelings of responsibility that would compel her to show up for duty during a pandemic. Participants had a deep sense of accountability and responsibility to their patients/clients, colleagues, community and employer. This sense of accountability and responsibility has evolved from their personal set of ethics and been reinforced by their professional ethics. They have learned their professional ethics through their formal education and their professional regulatory body and have had them reinforced through work and interaction with mentors and peers in the broader nursing community. The literature supports the belief that nurses have a professional obligation to provide care based on socially assigned views about proper nursing behaviour (Duncan et al., 2003) and are bound by an implied social contract that exists between nursing and society in exchange for their self-regulation (CNO, 2009; Harris & Holm, 1997; Ruderman et al., 2006; Schroeter, 2008). The

literature considers caring a basic human trait that is morally and ethically grounded (Gastmans, 1999; Kottow, 2001) and argues that health care workers have a moral duty that is based on their own humanness, common societal values and the shared experiences that allow them to relate to those dependent on nursing care (Reid, 2005).

Overall, the 'soul' theme was less prevalent in the stories and thoughts the participants shared but it was still a consideration in their decision-making. Carper (1978) believed that nursing ethics are the critical piece of nursing knowledge that guide a nurse to focus on her duty and what needs to be done (cited in Sullivan-Marx, 2006).

The participants in this study also believed they had a legal duty to their employer. This legal view of duty was supported by Harris and Holm (1997) and by Bensimon et al. (2007) who found that administrators believed that health care workers had an employment contract and thus a legal requirement to respond in a disaster.

The literature supports the codes and categories that were used to conceptualize 'soul' as a significant theme.

Blood.

The codes and categories that developed the theme 'blood' related to family and family responsibilities. 'Blood' was the strongest theme and was determined to be the single-most likely factor to interfere with a nurse's willingness and ability to report for duty during a pandemic. This was consistent with research that found that nurses who have young children at home have more difficulty fulfilling work responsibilities (Grzywacz, Frone, Brewer & Kovner, 2006). Pregnancy and breastfeeding were other influential 'blood' factors that emerged. Motherhood, especially the early stages, triggered very strong maternal and female instincts in the participants. This finding is

supported by studies that have found that the surge of hormones during pregnancy and lactation affects the female brain, making it more focused on offspring and motivates care-giving behaviours (Kinsley & Lambert, 2006; Maestripieri, 2001).

Participants were not willing to work if a family member was ill and required care, or if by working they posed a health threat to their families. Similarly, previous studies have found that health care workers want vaccines and/or medications made available early to their family members to prevent infection or illness (O'Boyle et al., 2006; Stuart & Gillespie, 2008; Syrett et al., 2007).

When the novel S-OIV A/H1N1 virus emerged in the spring of 2009, pregnant women were quickly identified as a significant risk group. Although they were not more susceptible to acquiring the S-OIV A/H1N1 infection, they were identified as being more at risk for developing severe complications from the virus, requiring hospitalization and at risk for a premature delivery or miscarriage (Public Health Agency of Canada [PHAC], 2009). Pregnant women and children under twenty-four months have always been considered high risk for seasonal influenza (PHAC, 2008; Repke, 2009) and now are considered high risk for complications from the pandemic strain as well (Carlson, Thung & Norwitz, 2009; PHAC, 2009; Repke, 2009). The strong maternal instincts and commitment to the mother role expressed in this study seem to be well-grounded in science and evolution, as influenza viruses pose a serious threat to a pregnancy and young children.

I believe that 'blood' was the most prevalent theme found in the data and is supported in the literature. The female identity and the female role of motherhood

provide important components of the theory I present on identity construction and "reassortment".

Emerging Theory

The theory I offer proposes that a nurse's perception of her 'duty to care' is tied to her prevailing self-identity, which is constructed though an ongoing process of reassortment of an core identity, a developing professional identity and a situational female identity. Like the flu virus itself, a nurse's identity reassorts according to her place on her life and professional continuums, as well as the situational demands on her female roles (Deppoliti, 2008). Symbolic interactionism, as described by Blumer (1969), suggests that self is a process that develops through social interaction with others and with the self, and action is based on the interpretations of the world. Thus, self is an ongoing construction (Gubrium & Holstein, 2001; Holstein & Gubrium, 2000) throughout time as individuals move in different social spheres and environments. Therefore, it is understood that the process of self is always continuing to be constructed, and identities change. The emerging theory of this study suggests that a nurse's identity reassorts according to the situational influences on her life and competing female social role demands. Indeed, much of the theory on nurses' professional identity is based on symbolic interactionism (Fagermoen, 1997; Öhlén & Segesten, 1998).

The nurse's perception of a duty to care is a complex phenomenon. Her sense of duty begins with a strong set of personal values and beliefs but is further developed over time through education, work experiences, peers and mentors (Kirpal, 2004). The nurse creates a professional identity that places the client at the centre of her nursing identity

(Kirpal, 2004). Despite having a strong sense of a duty to care, a nurse's sense of duty can be affected by changing situational demands on her female identity, which are determined and somewhat predictable by her place on her life's continuum. This study suggests that there are key periods during a nurse's life when her prevailing self-identity changes through reassortment. During these periods, her female identity becomes her primary self-identity due to situational influences; thus her professional identity becomes secondary. This shift in the prevailing self-identity changes the nurse's sense of a professional duty to a focus on a family duty, and thus could affect her actions during a public health disaster. At the central core, however, of these identities is her core identity—her belief in caring and compassion and the importance of being a caring and compassionate person.

For the purpose of this theory, I will discuss the nurse's self-identity as the identity that prevails at a given point in time and as a result of the reassortment of the core, professional and female identities. Identity is "a person's subjective sense of self as a result of social experiences" (Boydell, Goering, & Morell-Bellai, 2000, p. 28). It has subjective meaning for individuals based on their real world experiences and helps them determine who they are and how they should act (Alvesson, Ashcraft & Thomas, 2008). According to McGregor and Little (1998) "identity is a story that is lived by and that incorporates complexity and provides lives with unity and purpose" (p. 496).

Core Identity

Previous life experiences, cultural and religious influences and personal role models contribute to the development of a person's core-identity. Therefore, self, or self-identity, is social in nature as a sense of self emerges throughout interaction in the

social world (Holstein & Gubrium, 2000). Personal values, beliefs, attitudes, traits, relationships, motives, morals, ethics and competencies are all part of developing a core identity (McGregor & Little, 1998). Gubrium and Holstein (2001) refer to the core as the "true self" or an "authentic self" (p. 1). Although the self-identity is constantly reconstructed, the core of a person's identity often remains relatively stable throughout life and provides "a core sense of self" (Yakushko, Davidson & Williams, 2009, p. 182).

Throughout life, a nurse's self-identity is socially constructed through constant interaction with her social world and the contact she has with others. For a nurse, her colleagues, mentors, patients and work environment are very significant parts of her social world. Her self-identity is also shaped by the other roles she has in society and by the expectations society has for those roles. Hall (1994) states, "Identity should not be thought of as an already accomplished fact but as a production that is never complete and always in process" (cited in Burke Odland, 2009, p. 65). Aspects of the core identity remain relatively stable and provide a foundation to the self-identity, which is fluid rather than fixed. In this study, the 'heart' theme included the categories of caring, compassion, passion, courage, commitment and love of the image of nursing, while the 'soul' theme captured the values and ethics of the nurse. These represent values, beliefs and morals of the nurse and make up the essence of her core identity. Öhlén and Segesten (1998) state, "Compassion, competence, confidence, conscience, commitment, courage and assertiveness are personal attributes of the professional identity of the nurse which are connected with the caring legacy of nursing" (p. 726). People bring this foundation forward to their adult lives and chosen profession. The core identity serves as a necessary platform to build a professional identity (Öhlén & Segesten, 1998). Many of

the nurses in this study had chosen nursing as a profession because they had family members or positive role models that were nurses or had personally experienced positive nursing care as a client or patient. They recognized and valued caring as an important part of the nursing profession and as a value that was consistent with their core identity. Caring, the "core of nursing" (Hudacek, 2008, p. 126) has distinguished nursing from other health care professions. Caring, for these participants, was foundational to who they were and their set of values and ethics. It was because caring was central to both their professional identity and their female identity that dilemmas arose in thinking about duty to care during a pandemic. Thus, caring was a central and foundational part of their core identity, and subsequently, their professional and female identity.

Professional Identity

Weinrach, Thomas and Chan (2001) explain professional identity as the basic values and attributes that are associated with a profession and differentiate it from other professions. Shultz (1967) theorized that people engage in a process he called typification where social roles, networks or group identities are assigned based on the defining characteristics of that network and society's previous experience with it (cited in Gubrium & Holstein, 2001). Nursing as a profession is subject to typification. The social role of 'nurse' is recognizable to members of society based on attributes and values that have been assigned to the social role of nurse by society (Byrne, 2003). Society then can predict the actions or behaviours of a nurse in an emergency situation based on how they have conceptualized the nursing role. While caring and compassion are considered part of the core identity as an integral aspect of one's self, caring as a visible form is attributed to the nursing profession and indeed is expected of the

profession (Melchior, 2004; Swanson, 1993). According to Öhlén and Segesten (1998), the "professional identity is the individual nurse's perception of her/himself in the context of nursing practice" (p. 722). Therefore, the professional identity of a nurse relates to the external attributes that are evident in the social sphere, such as the knowledge and skills that enable her to be a nurse but also to the less visible traits and characteristics that are expected by members of the social group and others in general (Hogg, Abrams, Otten, & Hinkle, 2004).

The nurse's professional identity develops continuously over the course of her career and is influenced both by the social interactions that she has in her work environment with her peer group and through the honing of technical knowledge and skills required by the nursing profession (Apeso-Varano, 2007; Kirpal, 2004). Acquiring a professional identity is a career long process that evolves as the nurse moves along the continuum from novice to expert practitioner (Apesoa-Varano, 2007; Benner, 1984). For the individual nurse, the professional identity she has guides "what it means to be and act as a nurse" (Fagerberg & Kihlgren, 2001, p. 137).

It is believed that a person chooses a profession because the values and beliefs supported by that profession are consistent with one's own set of core values and beliefs (DuToit, 1995). Sung-Hyun, So, and Sunyoung (2009) found that women chose nursing as a profession because their mothers were nurses and they had a desire to help and care for others. Their choice was also influenced by what their perception of nursing was and the positive image they had of nurses. These were similar to the reasons given by the participants in my study. Therefore when a female chooses nursing she is influenced by the image of nursing she has and the characteristics of the professional nurse, which are

consistent with her own core values and beliefs. For someone choosing nursing the professional identity is closely connected with her own self-identity (Öhlén & Segesten, 1998).Values associated with nursing in addition to caring include altruism, autonomy, human dignity, integrity and social justice (Shaw & Degazon, 2008). The development of the nurse's professional identity is guided by these nursing values, which are important parts of her formal education and training and are socially reinforced by constant interaction in the work environment with nursing colleagues and mentors (Apesoa-Varano, 2007). Social interaction in the work environment not only strengthens her specialized nursing knowledge and technical skills but also reinforces the professional values and attitudes that are consistent with her internal values and beliefs. (Öhlén & Segesten, 1998; Brott & Kajs, 2001). Du Toit (1995) believes that nursing training and entry to the profession allow professional values and ethical codes to be reinforced and internalized by constant interaction with the peer group and guidance from the professional body. Benner (1984) proposes that a nurse progresses through five stages of professional identity, from novice to expert. The novice nurse is focused on the technical skills associated with 'curing' the patient while the expert nurse places the patient at the centre of nursing care and patient care becomes more holistic (Apesoa-Varano, 2007; Kirpal, 2004). The mix of novice nurses with expert nurses in the work environment blends technical and scientific knowledge with patient centred care and supports caring as an essential nursing competency, which is integral to professional identity (Kirpal, 2004).

It is important to note that the literature on the development of a professional identity for nursing is similar to other disciplines like teaching. Professional identity is

not only dependent on formal education but requires interaction with the peer group in the work environment and progresses through stages from novice to expert (Brott & Kajs, 2001, Benner, 1984).

Over time, work experience further develop a nurse's technical skills, knowledge and abilities and interaction with colleagues and patients, and assist her in strengthening her professional identity (Cook, Gilmer & Bess, 2003). The nurse's professional identity and the strength of that identity are dependent on her feelings of competence, confidence and commitment that she has in her nursing skills and abilities.

Female Identity

The nurse's female identity is primarily derived from her role within a family. Being a mother is viewed as one of women's most important social roles and is central to the construction of the female identity (Gillespie, 2001). The female gender and traditional women's roles have always been associated with nursing and have an important place in the development of the nursing profession (Fealey, 2004; Yam, 2004). The categories of caring, compassion, passion, courage and commitment found in the 'heart' theme of this study, while being important to the core and professional identities they are also paramount to the female identity. Indeed, being a mother, caregiver, partner and spouse are all roles that are taken up or fulfilled based on an individual's caring, compassion, passion, courage and commitment to those roles and the individuals that are a part of those roles (i.e., family). The concept of caring, a foundational concept to nursing, is also a foundational concept to family. Apesoa-Varano (2007) suggests that "the mothering ethos of caring has historically characterized nursing" (p. 249).

The importance of her female identity and specifically her mother role will change over time and is tied to the female care giving roles she has and the current demands her family makes on her. Family life is constantly changing and the importance of the nurse's mother role within the family changes too. Situational influences can affect her roles within the family and affect the importance she attaches to her female identity. When the female identity takes on increased importance to the nurse, it will indirectly affect the importance given to her professional identity. Franke (2000) suggests that there are a number of possible identities contained within the self-identity and there is a hierarchy for those identities. Individuals reassort their identity periodically and once reassorted are committed to the prevailing identity. For the nurses in this study, the female social roles of wife, mother, daughter, grandmother all provide meaning (Hogg, Terry & White, 1993). As she moves along life's continuum, it is likely that situational family demands will create a conflict between her female and professional identities, in particular because the core identity of caring and compassion remain central to both female and professional identities. This study found that nurses experienced conflict between identities when their female social roles had increased family demands and social expectations placed upon them.

This study has highlighted three significant identities a public health nurse has and suggests how these identities reassort over time to accommodate changing female social role demands (Amiott, de la Sablonniere, Terry & Smith, 2007). It also suggests that not only does the nurse develop a professional identity as a nurse, where caring is a core competency and the patient is at the centre of the nursing care (Kirpal, 2004), the nurse identity becomes a fundamental part of her identity or the "authentic" sense of self

or "true self" (Gubrium & Holstein, 200, p.1). A nurse's identity will constantly be reconfigured based on her positions on the life and professional continuums, the female social role(s) assigned and the situational life demands that are placed upon her, but her sense of self will remain a nurse. This was evidenced by the nurses in the study that recognized themselves as 'a nurse grandmother', 'nurse soccer mom', 'nurse neighbour' or as 'retired nurses'. Wendy gave an example of her nurse identity, "my children have always played sports and when there is an injury on the field, they always call me because I'm the nurse". She also mentioned "I have aunts that are retired nurses and they said, "Would you want us to come back and do work" [during a pandemic]? Ellen gives an example of being a nurse beyond the work day and the work environment "people see you in a grocery store and ask you if it's okay to put their kids homo milk because they know that you're the public health nurse". The nurse part of her identity remains important whether she is practicing as a nurse or not, she will identify as a nurse (Melchior, 2004). Öhlén and Segesten (1998) suggest that a professional identity as a nurse is understood as a continuum with opposite poles of weak and strong identity. This present study suggests that the professional identity of a nurse is not necessarily what changes throughout the nurse's life, but that other aspects of the nurse's identity become more dominant due to life circumstances and situations. This does not necessarily imply that the nurse's commitment to the profession or the professional identity of a nurse diminishes in any way, but that other identities become more dominant. As a nurse moves through her life and career, the female and professional identities will alternate as the dominant focus of her self-identity, while her core identity remains relatively constant (Marjomi et al., 2003). It is important to remember that

nurses have all three identities at all times, but different social expectations and social environments can emphasize one or another aspect of a nurse's identity and define the dominant self-identity at a given time.

In this study, the nurse's female identity was predominately influenced by her female care-giving roles, especially as a mother. When significant others are highly dependent on them, as is the case with pregnancy, breastfeeding and young infants, this causes the female identity to be the dominant identity for a nurse. Rawnsley (1990) notes that the biological bonds that exist between family members are not easily dismissed. Therefore, it is important to understand that a nurse's commitment to her professional identity is subject to the influences and demands made on her female identity.

A model for identity construction, reassortment and how it could affect perception of duty during a pandemic is offered in Figure 2.

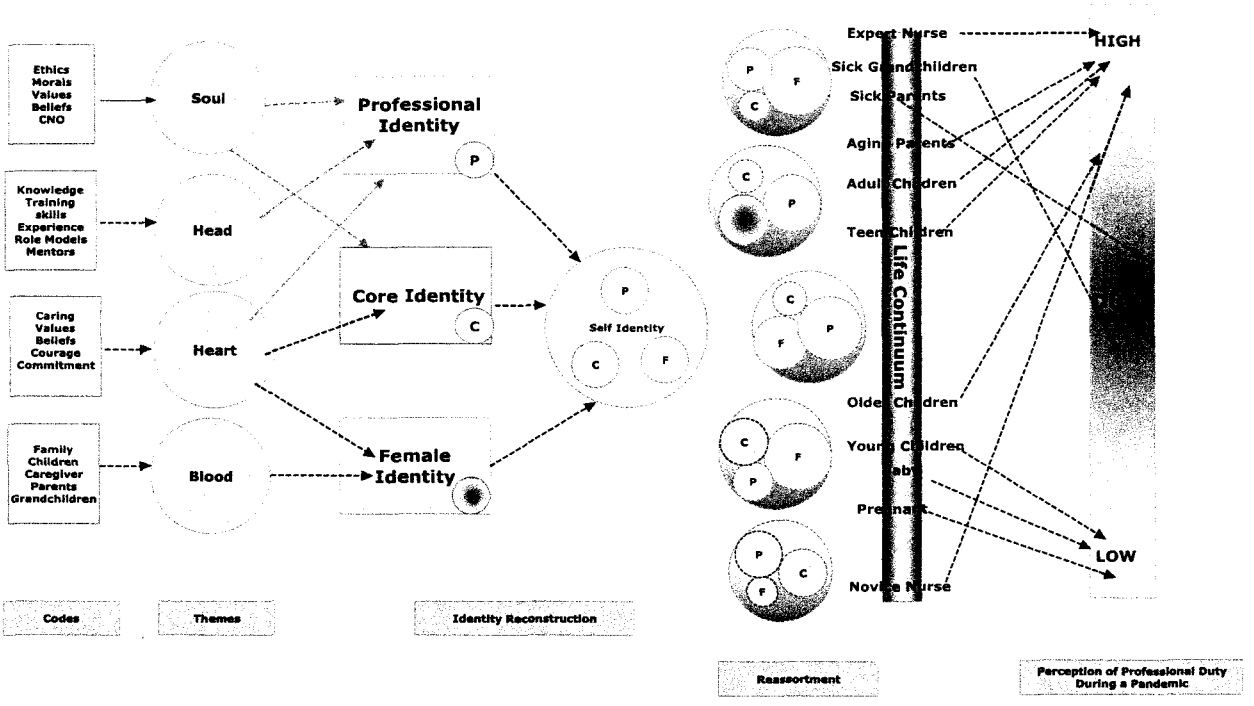

Figure 2: Identity Construction, Reassortment and Influence on Perception of Duty during a Pandemic

Traditionally, the female gender has dominated the nursing profession. In this study, female participants were chosen to look specifically at the potential for conflict that might be experienced by a nurse during a public health disaster and how this conflict would affect her perception of having a 'duty to care'. The findings support that there are points on the nurse's life continuum where competition between the professional and female identities may occur. The theory I offer suggests that the prevailing self-identity of a nurse, at a given point in time, is predictable based on that

nurse's position on her life continuum and the situational female role demands that coincide with that position. It also suggests that once the nurse has developed a professional identity as a nurse the identity of 'nurse' becomes part of her identity or her "authentic sense of self or true self" (Gubrium & Holstein, 2001, p. 1). Although a nurse's identity will constantly be reconfigured based on her positions on the life and professional continuums the female social role(s) assigned and the situational life demands that are placed upon her, her self identity will always remain a nurse. The nursing (core) identity remains ever-present and whether practicing or not a nurse will identify as a nurse (Melchior, 2004). This may explain why nurses came out of retirement and risked their lives to work as nurses during the 1918 pandemic (Gribble, 1997). A nurse honours her 'duty to care' but in an emergency, she will do what she is trained to do and triage her priorities (patients vs. family). There will be times when her duty as a 'nurse mother' (female identity) supersedes her duty as a 'professional nurse' (professional identity). This theory gives organizations the ability to understand which nurses will be affected by demands on their female role during a crisis and thus be a less reliable human resource. Goffman (1959) argued that knowing the "self" allows us to predict what we will do and what others can expect from us (cited in Gubrium & Holstein, 2001). Likewise, the theory generated allows others to assess and understand what an individual nurse's primary duty will be during a disaster and what can be expected from her. How the identity reassorts at the time of a disaster will affect the nurse's commitment to a professional duty and her ability to report to work (Cook et al., 2003).

This research is important as it highlights that the identity of the nurse goes far beyond the professional, but is created through a combination of the core, female and professional identities, and that the prevailing self-identity is constantly reconstructed (Öhlén & Segesten, 1998). It is important to note that even in the conceptualization of different aspects of identities, I still refer to the participants as "nurses" rather than women, and essentially highlight the role of the participants as such. In this conceptualization, there is a tacit understanding that the role of 'nurse' encompasses participants' lives and is one of their primary identities or roles.

This study is important because it offers a theoretical model for the development of a nurse's self-identity, which undergoes periodic reassortment of the core, professional and female identities. There is always a prevailing identity at a specific point in time and the identity that is currently assigned will influence a person's actions and decision-making (Franke, 2000).

This theory was developed from the important themes that emerged from the data and can be used as a resource by employers to understand and predict how a nurse's perception of duty may change during a crisis, especially one that occurs when the nurse's female identity is dominant. Understanding this suggests there is action needed by employers and policy makers to ensure both the female and professional identity needs are supported in disaster plans, in order to provide the most effective public health nursing response possible.

Report of Findings to the Participants

At the time of their interview, participants were advised that summaries of the findings would be available by November 2009. If participants were interested in a copy

of the study's findings, they were invited to contact me at that time. Contact information was provided to the participants in the cover letter (see Appendix C) and again at the end of the interview.

The findings of this study will be made available to the health units that consented to have their nurses participate in the study, as well as the Central West Health Unit Pandemic Planning Group, the Emergency Planning Newsletter and anyone that requests it.

Potential Bias

The interviews (N=22) for this study were completed on April 17, 2009, but the Mexican Health Ministry did not issue its first nationwide alert about a novel-H1N1 strain until April 22, 2009, (WHO, 2009). Analyses done on this new strain found that it was "genetically distinct" from previously circulating H1N1 viruses (Nava, Attene-Ramos, Ang & Escorcia, 2009, p. 1) and that it had reassorted from the genes of different virus origins (Chen & Shih, 2009). This novel strain displayed key traits required for a pandemic strain: 1) it was a novel strain that had originated from swine, human and avian origins; 2) it demonstrated efficient and sustained human-to-human spread; and 3) initial reports from Mexico suggested it had a high mortality rate, although this was later disproved (Chang et al., 2009; Michaelis et al., 2009).

In keeping with pandemic predictions, this new virus spread quickly around the world. On June 11, 2009, the World Health Organization declared the world had reached pandemic level six, a full pandemic, according to the previously determined WHO pandemic phases.

On November 20, 2009, the World Health Organization announced that the Norwegian Institute of Public Health had identified a new mutation in three S-OIV A/H1N1 viruses; two that were identified in fatal cases (WHO, 2009). Mutations have been identified in other countries including Brazil, China, Japan, Mexico, Ukraine and the US (WHO, 2009, November). The significance of the mutation has not been determined, but there is always some degree of risk when a genetic mutation occurs.

Although the second wave of this pandemic has ended, scientists believe that S-OIV A/H1N1 remains a viable threat because it continues to have the ability to mix and reassort with swine and humans (Gallaher, 2009; Michaelis et al., 2009).

The emergence of this novel influenza strain after the completion of all twenty-two research interviews would not have influenced any of the responses given during the data collection. However, it is important that the findings from this study be shared in a timely way so that public health units can prepare for the return of a more severe mutated strain or the emergence of the next virulent disease.

Authenticity and Trustworthiness

Authenticity and trustworthiness are important criteria of qualitative research. Lincoln and Guba (1985) described the qualities of authenticity and trustworthiness as "how an inquirer persuades his or her audiences that the research findings of an inquiry are worth paying attention to" (cited in Golafshani, 2003, p. 601). Trustworthiness is similar to the rigor criteria used to judge quantitative research (Guba & Lincoln, 1989). Criteria that add to the trustworthiness of this research include researcher reflexivity, transferability, dependability and confirmability (Guba & Lincoln, 1989). Trustworthiness is supported by several features of this research:

1) The digital recordings that were made of each interview followed by the production of a verbatim transcript;

2) Participant characteristics were described sufficiently and in enough detail to allow readers to determine that the findings are transferable to other like participants; in this case, other public health nurses working in Ontario (Creswell, 2007). By being transferable, it enhances the reader's understanding of significant factors that will influence a public health nurse's perception of duty and individual decision-making when asked to report to work during a severe influenza pandemic;

3) The findings are grounded in what the participants have said and are authenticated by quotes from the data, making the findings confirmable (Meyrick, 2006). The theory I offer is based on the important themes that were identified from the participant's words and stories, and is supported by multiple quotes that are representative of the twenty-two participants. The quotes I have provided for each theme provide a clear link between the data, conclusions that I have made and the implications for practice that I offer. A process record was maintained to provide an audit trail and support the dependability criteria. The research process is traceable and supports the logic that I used to conceptualize the four main themes and develop the grounded theory. Having the audit trail allows another researcher to follow the coding decisions I made during the analysis and determine that the conclusions I have reached are reasonable (Chiovitti & Piran, 2003; Creswell, 2007; Guba & Lincoln, 1989; Meyrick, 2006). The audit trail also supports the criteria of dependability, confirmability and consistency by allowing the steps of my research to be verified throughout the research

process from the collection of the interview data through the coding, theme identification and the generation of my theory (Golafshani, 2003).

The study was further strengthened by my allowing the participants to guide the interview process using a semi-structured open-ended interview guide (see Appendix A).

Authenticity criteria include fairness, and ontological and catalytic authenticity, which is defined as "moving theory into action" (Guba & Lincoln, 1989, p. 249). The research and development of this theoretical framework allows the participants and other public health nurses to understand their perception of duty in a pandemic or another public health crisis in a more informed way, which establishes ontological authenticity.

This study indicates that there is a need for action from the nursing regulatory body, the College of Nurses of Ontario (CNO), other nursing organizations (Canadian Nurses Association [CNA], the Registered Nurses Association of Ontario,[RNAO] and the Ontario Nurses Association [ONA]), public health organizations, different layers of government, employers and individuals who are involved with pandemic planning, policy development and decision-making. Encouraging action and decision-making in the area of pandemic or disaster planning contributes to the research's catalytic authenticity.

Chapter 6: Implications of Theory for Practice

There are many implications for practice that can be taken from this research. Figure 3 indicates key areas where action is needed for planning and policy development to strengthen the public health nursing response during a public health disaster.

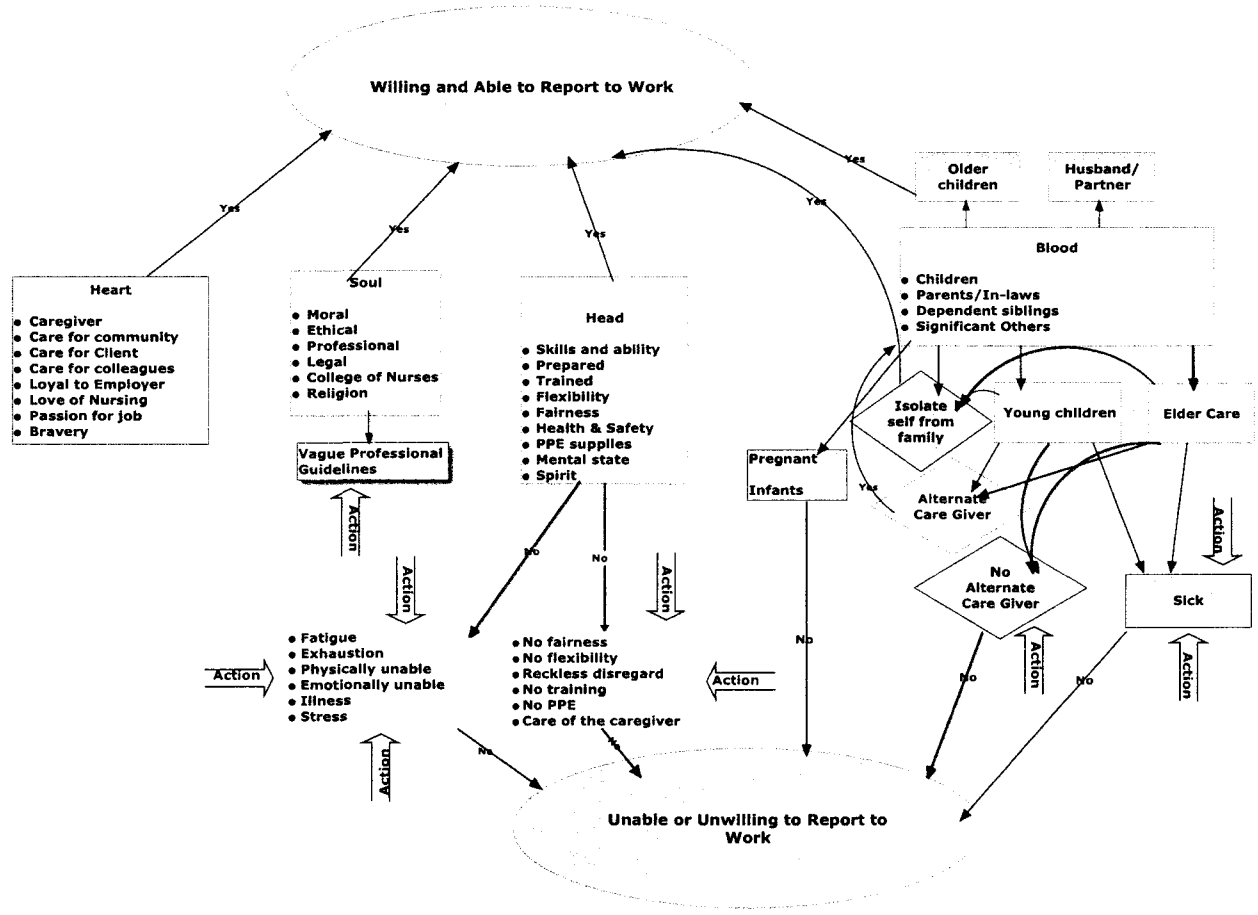

Figure 3: Theme Areas where Planning Action and Policy Development are Required.

First, there is an urgent need for the appropriate and ongoing education, training and skill assessments of public health nurses (Tomczykma et al., 2008). This training must include the appropriate skills training required for their planned-response roles. Public health nurses are a major group of health care professionals that will be needed to respond during a pandemic or any other infectious-disease outbreak. Second, frontline staff in a pandemic must be fit tested for an N95 mask and refitted every two years as recommended by the Ministry of Health and Long Term Care (Retrieved January 22, 2010, from http://www. health.gov.on.ca/en/ccom/flu/h1n1/pro/docs/N95_fit_test_qa_20090512.pdf). Third, public health staff must be regularly trained to don and doff required personal protective equipment and should be regularly audited for technique as part of a health and safety policy. Studies have shown that the correct use of PPE is effective for protecting health care workers from infections that are present in the workplace (Jefferson et al., 2009). However, if health care workers are not trained to use PPE correctly, they continue to be at risk for an occupationally acquired infection (Hinkin, Gammon & Cutter, 2008). Fourth, public health organizations have a legal and ethical responsibility to ensure they stockpile and maintain adequate supplies of personal protective equipment (preparedness capacity) (Tomczykma et al., 2008). Fifth, there is a need for the development of emergency response plans and workplace strategies that will provide public health nurses with flexible and family friendly options. Considerations such as flexible workdays and hours, alternate worksites and adjusted work duties will allow public health nurses to support needs of their families while

fulfilling professional duties. These flexible work options will decrease a nurse's stress and strengthen her resilience. Sixth, response plans must ensure fairness through the equitable distribution of work and risk during an emergency. Seventh, public health nurses must be provided with clear expectations of what is required from them during a public health emergency. It would be important to discuss these expectations at the time of hire and reinforce them again in employment and union contracts. This recommendation is supported by research done by Bensimon et al. (2007) who found that health care workers and administrators held different views on duty and limits to duty. Finally, eighth, there is an important implication for planning to reduce the potential for absence of human resources due to an employee or family member's illness. Options might include making it possible to sequester public health nurses at work after potential exposures or by supplying antivirals and immunizations early to public health staff and their families. The use of antivirals prophylactically for health care workers or their families requires that the current Canadian strategy on the use of prophylaxis be reconsidered.

If future pandemic and disaster planning are influenced by the findings of this research and the theory that has been generated, it essentially contributes to the research's authenticity.

Limitations

Despite the appropriateness of using qualitative research to address this research topic, there were limitations to the study. It is possible that only individuals with limited knowledge or understanding of the implications of a pandemic volunteered to participate in the study. Public health nurses with more knowledge about the potential risk(s) and

who had strong negative feelings about working during a pandemic may not have volunteered because they did not feel safe in expressing their true feelings or intentions for reporting to duty.

Another limitation was that the research study was not anonymous. Although the participants were informed that the interviews and all information collected would be kept confidential, their participation was not anonymous and this lack of anonymity may have affected the recruitment of volunteers for the study and/or their responses to the questions that were asked during the interview. To ensure confidence in the protection of their personal information, the procedure for assigning each participant a pseudonym was explained during the personal communication I had with each participant and again in the cover letter (see Appendix C) and the consent form that they signed (see Appendix D). Participants were assured that a pseudonym would be assigned to all quotes or identifying references that would be used to illustrate themes in the final report.

Participants may have been reluctant to share other thoughts or concerns about working during a pandemic because in order to meet the ethical requirements of this research, I disclosed at the beginning of each interview that I worked for a public health unit as a program manager. This may have contributed as another limitation for this study.

The quality of the interview may have been affected by my inexperience conducting research interviews. This may have influenced how I used probing questions and/or missed opportunities to explore or expand on expressed or implied ideas or thoughts.

Another possible limitation was my own personal beliefs about this research topic. I had chosen the topic because of my own experiences with the subject. As a manager in public health and being involved in pandemic planning, I had participated in many informal discussions with staff regarding their ambivalence about being frontline responders during a pandemic and their angst in respect to having to choose between their job and family responsibilities. I had examined my assumptions about this topic as part of a self-awareness exercise prior to writing the research proposal. This exercise allowed me to become aware of my assumptions and beliefs related to this topic. I found that my assumptions were based on my personal beliefs about what it means to be a nurse, my personal perceptions of duty, my experiences of being a public health manager and my own personal feelings of conflict between my role as a public health professional (professional identity) and as a mother (female identity). Acknowledging my beliefs and assumptions allowed me to "bracket" them (Morrow, 2005) to minimize the influence of my biases through a heightened self-awareness during the interview process and coding of the data (Cutliffe, 2003).

Implications for Future Research

I believe several findings from this study should be used to guide future research. Studies could be done with employers to determine their state of readiness for a pandemic or another infectious disease outbreak (written plans, testing of plans, skills training, stockpiling of supplies, a volunteer plan, and mask-fit testing). It would also be important to determine what planning has been done that incorporates care for the caregivers and family friendly and flexible work options.

The appearance of the novel S-OIV A/H1N1 virus after the conclusion of this study would make it important to study public health nurses now to determine what their experiences were during the response to this "mild" pandemic. What role conflicts or personal challenges did they experience during the 2009 pandemic? Based on their experiences, it would be interesting to explore what their thoughts are now about working during a severe pandemic when the virus could pose a more significant personal threat, work demands could be more intense and the duration could be longer.

Additional research that studies public health nurses who are single, single with children, commute long distances, are new to public health or nursing (young in age) and/or are male would also be beneficial in order to understand if there are any significant differences in their perceptions of duty and their willingness to work during a public health disaster.

Research is also needed to understand what the employer and the public expect of public health nurses during a disaster and what they believe a nurse's duty to care is. It would be important to know whether employers or the public believe there are any acceptable limits to a nurse's duty and if so, what those limits might be.

From a health and safety perspective, there is a need to study nurses' appropriate use of and technique for PPE and determine if their expressed confidence in their ability to protect themselves using PPE is well-founded. Correct PPE technique, especially donning and doffing, is as important as the availability of PPE. Nurses in this study felt they could protect themselves using PPE despite the fact that they had never had training in donning and doffing or been mask-fit tested. It would be important to study technique to determine how safe nurses really are when using PPE.

Chapter 7: Conclusions

Qualitative research was the appropriate methodology to use given the nature of my research problem, which sought to understand what thoughts, feelings, beliefs, values, prior experiences, relationships and life realities would influence a public health nurse's perception of duty and her willingness and ability to report and stay at work during an influenza pandemic (Strauss & Corbin, 1998).

This research has addressed significant gaps in the current literature on public health nurses' thoughts, fears and beliefs related to their anticipated roles in a disaster response (Good, 2007). I believe it adds important information and knowledge on this topic that can be used to strengthen public health disaster planning in this province. Prior to this research, there was a lack of information on how public health nurses perceived their professional duty and how they would respond during a pandemic or an infectious disease outbreak where there was a personal risk (O'Boyle et al., 2006). This research was unique in that it studied public health nurses in Ontario, the single-largest group of health professionals in Ontario's public health system (Naylor, 2003). It has explored what their perceptions of duty to their clients are and how they have arrived at these perceptions. Perceptions of duty and personal limits to duty will be affected by their prevailing self-identity at the time of a disaster.

This research is important because it has generated a theory on how nurses construct their identity and how their identity can reassort over the course of their life in relationship to their professional identity, female identity and their current place on their life continuum.

The themes that emerged from the data identify the significant factors that will affect the construction of the nurse's identity, influence how it will periodically reassort and determine the prevailing identity at a specific point in time. Based on my findings and represented in the theory I have offered, I believe that the nurse's self-identity is constructed from a core identity, female identity and professional identity that reassorts to provide a prevailing self-identity, which will affect her perception of duty at the time of a disaster. Like the influenza virus itself, the nurse's self-identity is susceptible to continuous reassortment.

This research suggests that employers must consider the significance of the female identity in a workforce that is female-dominated and begin building family friendly and flexible options into their emergency planning. Failure to consider the importance of the female identity may affect an important human health care resource at a critical time. These findings are transferable to other public health nurses in this province, if not across Canada, and would apply in similar infectious disease outbreaks where the nurse's perception of duty will be tested and affected by her real-time identity.

I believe this was a well-designed study that has collected rich data and provided a theory constructed from the participants' beliefs, values stories and real-world experiences. This research highlights the important factors that will influence a public health nurse's perception of duty when tested during a public health disaster. I believe this study offers considerable insight into the complex concept of identity construction and how identity continuously reassorts because of the influences of real-world experiences, social roles, environments and situational influences (Hogg, Terry &

White, 1995). Continuous reassortment of the identity will cause shifting between the professional and female identities of a nurse. A public health nurse's perception of duty during a disaster will be determined by her prevailing identity at the time.

The findings also suggest that there is work to be done by the College of Nurses of Ontario. Clear ethical codes are needed to support and strengthen the professional identity of a nurse (Verpeet, Dierckx de Casterle, Van der Arend & Gastmans, 2005). There are also important implications for employers and emergency planners at the different levels of governments and individual health units. They must consider the factors that affect the female identity in a workforce that is female-dominated and build family friendly options into their emergency plans.

Considering these findings, failure to introduce mitigating strategies into emergency planning will threaten one of the most significant public health human resources at a time when resources already will be insufficient.

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Appendix A

Interview Guide

I. Nurses' reflections on their nursing career and public health role

1. Please tell me how you chose to become a nurse and how you came to be a public health nurse.
2. Describe for me your typical activities or roles you have working as a public health nurse.

   What does an average day look like?
3. Describe for me what you understand to be your duty to care for a client or patient is?

II. How knowledgeable public health nurses (PHNs) are and how prepared they feel for an Influenza Pandemic

4. There has been much discussion over the last little while about the anticipated influenza pandemic. Tell me what you know about this?
5. What do you know about the planning at your health unit for the influenza pandemic?
6. Describe the types of things that have been done to prepare for a pandemic at home, at work, provincially. How prepared do you feel?
7. Describe any additional measures you feel should be taken (and by whom) to ensure your safety during a pandemic.

III. Public health nurses' understanding of public health's role and their expected nursing roles during a pandemic

8. What role(s) do you think public health will have during an influenza pandemic?
9. What role do you think that you, as a public health nurse, will have during a pandemic?
10. What types of training or preparation have you had for the roles that might be assigned to you as a public health nurse during a pandemic?

IV. Public health nurses' understanding, beliefs and feelings about their professional duty to care.

11. How would you describe your professional duty to care during a pandemic? What would this means in terms of your response to a pandemic? How will this impact your role and the way that you do your work?
12. What do you believe are possible limits to your duty to care for patients during a pandemic?
13. If you believe there are limits, could you give me some examples of what those limits might be?
14. What do you think the public will expect of you, as a public health nurse, during a pandemic?
15. If you are well yourself, do you believe you will come to work and continue to work during the pandemic? Can you tell me more about this? Why or why not?
16. Describe how your duty to care is the same or differs from other health care professionals?

V. Public health nurses' feelings on having female roles and competing obligations

17. How does your role of being a mother and/or wife affect your feelings or thoughts about working during a pandemic?
18. What are the things that might interfere with your ability to work during a pandemic?

VI. Public health nurses' concerns, fears and thoughts about working during a pandemic

19. Describe what thoughts you have had about showing up to work during a pandemic or any other infectious-disease outbreak where there can be a personal risk to yourself?
20. If you could confidentially voice your concerns about being expected to work during a pandemic, what would you say?
21. What are other thoughts or concerns you have about working during a pandemic?
22. Do you have anything to add?
23. Do you have any questions for me?

Appendix B: Consent for Organization's Participation

Lakehead

Declaration of Informed Consent

I have read the information letter provided by Janice Tigert Walters describing the purpose of the study. Consent for this health unit to participate is made under the following conditions:

1. The health unit has been provided a copy of the cover letter. The information in the cover letter has been read and understood by the individual with signing authority for the health unit.
2. For employees that volunteer their involvement includes participating in an interview that will take approximately 45 to 60 minutes and will be scheduled at a time convenient for the employee during that week.
3. Participation for the employee is completely voluntary and all data collected will be used solely for teaching and research purposes.
4. All information will be kept strictly confidential, accessed only the researcher involved in the project. Pseudonyms for the health unit and all participants involved will be used on all documents pertaining to the study and in all oral and written reports of the project. The organization's name will never be used.
5. Employee volunteers may withdraw from the study at any time by simply notifying the researcher or the research supervisor, Professor Elaine Wiersma. Participants may refuse to answer any questions during the interview. Participants' withdrawal from the research will have no impact on their employment or employer.
6. It is not anticipated that participants will experience any physical or psychological harm.
7. The findings of the research will be prepared for publication at professional conferences and journals.
8. Data will be published in aggregate form, and no individual participants or their employers will be identified in published results without their explicit consent.
9. Following completion of the study all data will be securely stored in a locked filing cabinet at Lakehead University for a minimum of five years.

10. The health unit may request an executive summary of the findings upon completion of the study. This summary will be available through the researcher at jtigertw@lakeheadu.ca after November 2009.

This study has been reviewed by the Research Ethics Board at Lakehead University and has received ethics clearance. The Office of Research Ethics at Lakehead University is available for any concerns and comments pertaining to this study.

Consent for Employee Volunteers of the Organization to Participate in the Study

Name of Organization/Health Unit

_____

Signature of the organization's representative with signing authority

_____

Date

_____

Signature of Researcher

_____

Appendix C: Cover Letter

Lakehead

Re: Research Study

Public Health Nurses' Willingness and Ability to Report to Work during an Influenza Pandemic: A Qualitative Study

Dear [Potential Participant]

I want to invite you to participate in a study that I am doing as my master's thesis in the Masters of Public Health Program at Lakehead University. My research study is intended to gain an understanding of how you, as a public health nurse, feel about your front line role during a pandemic, your beliefs about your duty to care, and what concerns or competing responsibilities you have that might impact your ability to report to work during an influenza pandemic. As an employee of a health unit in Ontario your views are critical as input into my research on this topic. Your participation will provide valuable information that can be used to guide further pandemic planning at the provincial and local levels. I am looking for 8 to 10 public health nurses for this study and will provide you with a $20.00 Tim Hortons' card for your participation. Your participation in this research project would include participating in an interview that will last approximately 45 to 60 minutes. The interview questions will focus on 1) Your current role with public health and what your typical daily activities or assignments are, 2) How your health unit is preparing to respond to an influenza pandemic, 3) What your thoughts are about showing up to work during a pandemic or any other infectious disease outbreak where there may be some personal risk, and 4) What factors might interfere with your ability to work during a pandemic? The interview will be conducted at a time and place to suit your preference and convenience. Ideally, I would like to audiotape our conversations so I can better understand experiences and have an accurate record of our conversation.

All information gathered throughout this study, including the audiotapes of the interviews will be kept strictly confidential and will only be accessed by me and my faculty advisor, Professor Elaine Wiersma. All audiotapes will be destroyed once the study is completed, and transcripts of the interviews and notes will be kept in a locked filing cabinet in the researcher's office during the analysis. Following the completion of this research all research materials will be securely locked up at Lakehead University for a minimum of five years.

If you decide to take part in this study, I will be asking you to sign a letter formally stating your consent to participate and to having the interview audiotaped. Your participation is completely voluntary and you may choose not to participate. It is not anticipated that you will experience any physical or psychological harm from participating in this research due to the nature of the questions and the type of conversation. However, during the interview, you may decline to answer particular questions if you wish. You may also choose to withdraw from this study at any time. Any decision not to participate will have no impact on your employment and experiences at _____ Health Department. Although quotes or themes expressed during the interview may be included in the final report, they will not be attributed to any one participant. Pseudonyms will be used for all participants and any identifying information given in the interviews will be removed from the transcripts.

This study has been approved by the Research Ethics Board at Lakehead University. This office is available for any concerns and comments pertaining to this study and can be reached by contacting (807) 343-8283. Should you have any questions about my study, please feel free to contact me at 1-800-265-7293 x 4669, or my faculty advisor, Professor Elaine Wiersma, at (807) 766-7250. When the research is completed I will be writing a report on my findings that will be of value to public health for the ongoing influenza pandemic planning. Information presented in this report will be compiled from the input of all participants. The final report will be available to the public. You can access the completed report or an executive summary by November 2009 by contacting me at jtigertw@lakeheadu.ca or at the number provided above.

Thank you for your interest and potential involvement in this project. I look forward to working with you.

Sincerely,

Janice Tigert Walters

Master of Public Health Graduate Student

Lakehead University

Appendix D: Informed Consent for the Participants

Lakehead

I have read the information letter provided by Janice Tigert Walters, Master of Public Health program at Lakehead University, describing the purpose of her study. My consent to participate in this research project is made under the following conditions:

1. That I have read and understood the information in the study cover letter.
2. My involvement includes participating in an interview that will take approximately 45 to 60 minutes and will be scheduled at a time and place convenient for me during that week.
3. My participation is completely voluntary and all data collected will be used solely for teaching and research purposes.
4. All information will be kept strictly confidential, accessed only the researcher and research supervisor. Pseudonyms for all participants involved will be used on all documents pertaining to the study and in all oral and written reports of the project. My name will never be used.
5. I may withdraw from the study at any time by simply notifying the researcher or research supervisor, and may refuse to answer any questions during the interview. My withdrawal from the research will have no impact on my employment and experiences at [name of the health unit].
6. It is not anticipated that I will experience physical or psychological harm.
7. The findings of the research will be prepared for publication at professional conferences and journals. The data may be used for additional analysis in the future by the researcher.
8. Data will be published in aggregate form, and no individual participants will be identified in published results without their explicit consent.

9. All data will be securely stored in a locked filing cabinet at Lakehead University for a minimum of five years.
10. I may request an executive summary of the findings upon completion of the study. These will be available through Lakehead University after November 2009.

This study has been approved by the Research Ethics Board at Lakehead University. The Office of Research Ethics at Lakehead University is available for any concerns and comments pertaining to this study.

Name of Participant_____

Signature of Participant_____

I consent to having the interview audiotaped.

Name of Participant_____

Signature of Participant_____

Date

_____

Signature of Researcher

_____

Appendix E: Research Ethics Approval

Lakehead
UNIVERSITY

Office of Research

Tel (807) 343-8283
Fax (807) 346-7749

February 9, 2009

Principal Investigator: Dr. Elaine Wiersma
Student Investigator: Ms. Janice Tigert Walters
Masters of Public Health
Lakehead University
955 Oliver Road
Thunder Bay, Ontario P7B 5E1

Dear Researchers,

Re: REB Project #: 045 08-09
Granting Agency name: N/A
Granting Agency Project #: N/A

On the recommendation of the Research Ethics Board, I am pleased to grant ethical approval to your research project entitled, "Public Health Nurses' Willingness and Ability to Report to Work During an Influenza Pandemic: A Qualitative Study".

Ethics approval is valid until **February 9, 2010**. Please submit a Request for Renewal form to the Office of Research by January 9, 2010 if your research involving human subjects will continue for longer than one year. A Final Report must be submitted promptly upon completion of the project. Research Ethics Board forms are available at:

http://borl.lakeheadu.ca/research/www/reb_forms.htm

During the course of the study, any modifications to the protocol or forms must not be initiated without prior written approval from the REB. You must promptly notify the REB of any adverse events that may occur.

Completed reports and correspondence may be directed to:

Research Ethics Board
c/o Office of Research
Lakehead University
955 Oliver Road
Thunder Bay, ON P7B 5E1
Fax: (807) 346-7749

Best wishes for a successful research project.

Sincerely,

Dr. Richard Maundrell
Chair, Research Ethics Board

/len

cc: Faculty of Graduate Studies
Office of Research

CELEBRATING 40 YEARS

Appendix F: Heart Theme

Table 2:

Heart Theme: Codes and Categories

Code	Category	Theme
Concern for client and their families Concern for team-mates Solidarity Concern for community Emotional connection to clients Empathy Kindness Thoughtfulness Wanting to help Excited about helping	Caring Compassion	Heart
Love of profession (job) Love of the work done	Passion	
Prepared for risk to self Previous experience with unsafe work Instinct to respond first, personal safety second 'Nursing way' Fear Scared Anxiety	Bravery, courage	
Support Loyalty	Committed	
Images and symbols of nursing work Excellent role models Family member mentors	Love of the image	

Appendix G: Soul Theme

Table 3:

Soul Theme: Codes and Categories

Codes	Categories	Theme
Personal values Beliefs Expectations (self/others)	Ethics Work ethic	Soul
Religion For the public good For the greater good	Moral conscience	
Part of self-regulation	Duty	
Licensed with the College of Nursing Nursing Standards Nursing role Professional identity	Professional obligations	
Sense of responsibility Legal responsibility Responsibility to employer Responsibility to client	Responsibility	

Appendix H: Blood Theme

Table 4:

Blood Theme: Codes and Categories

Codes	Category	Theme
Protection of family	Family (mother)	Blood
Fear of infecting family	Caregiver	
Safety	Responsibility	
Emotional care		
Children	Immediate Family	
Older children	Parent Role	
Grandchildren	Grandparent role	
Baby	Mother/family first	
Younger children	Family priority	
Sick/Illness children/grandchildren or partner (any age)		
Pregnancy	Maternal instinct/duty	
Breastfeeding		
Elder care	Family/Extended family	
Sibling care	Familial duties	

Power of attorney	
Dependent friend	Important relationships
Animal care	
Fragile parent	
Emotionally dependent parent	
Family business	Other family
Family farm	responsibilities

Appendix I: Head Theme

Table 5:

Head Theme: Codes and Categories

Codes	Categories	Theme
Personal limitations		
Health	Human Limits	
Stress		
Fatigue		
Overwhelmed		
Headaches		
Exhaustion		
Fairness	Compromise	
Equality		Head
Compromises	Family Friendly	
Flexibility		
Out of the Box approaches		
Work from Home		
Flexed work hours		
Personal safety		
Education		

Training	Safety expectations
Drills	
Preparedness	Relevant training
Mask-fit testing	
Personal Protective	
Equipment (PPE)	
Skills and ability	
Nursing knowledge	Qualifications
PPE training	
Employer responsibility	
Ministry responsibility	Employee
Truthfulness	rights/expectations
Trust	
Employee rights	

Appendix J: Model of the Predominant Themes and Categories

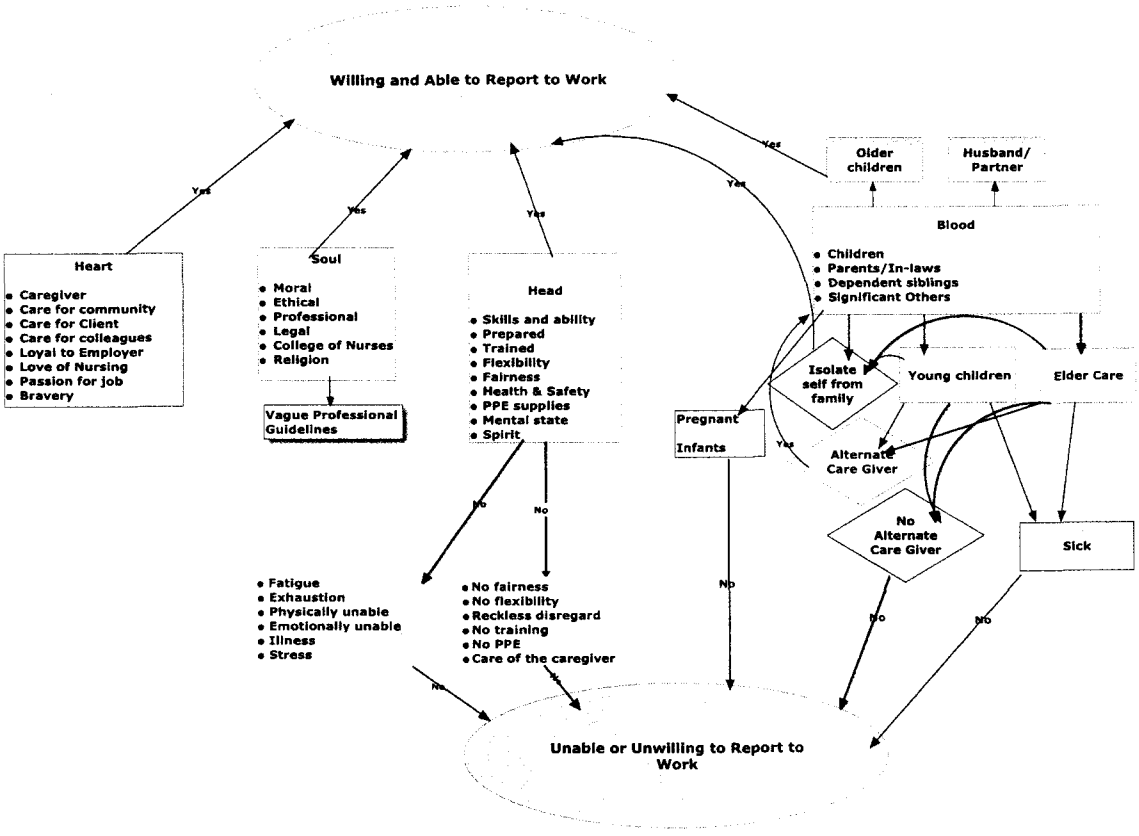

Figure 2: Predominant Themes and Categories

Appendix K: Model of the Grounded Theory

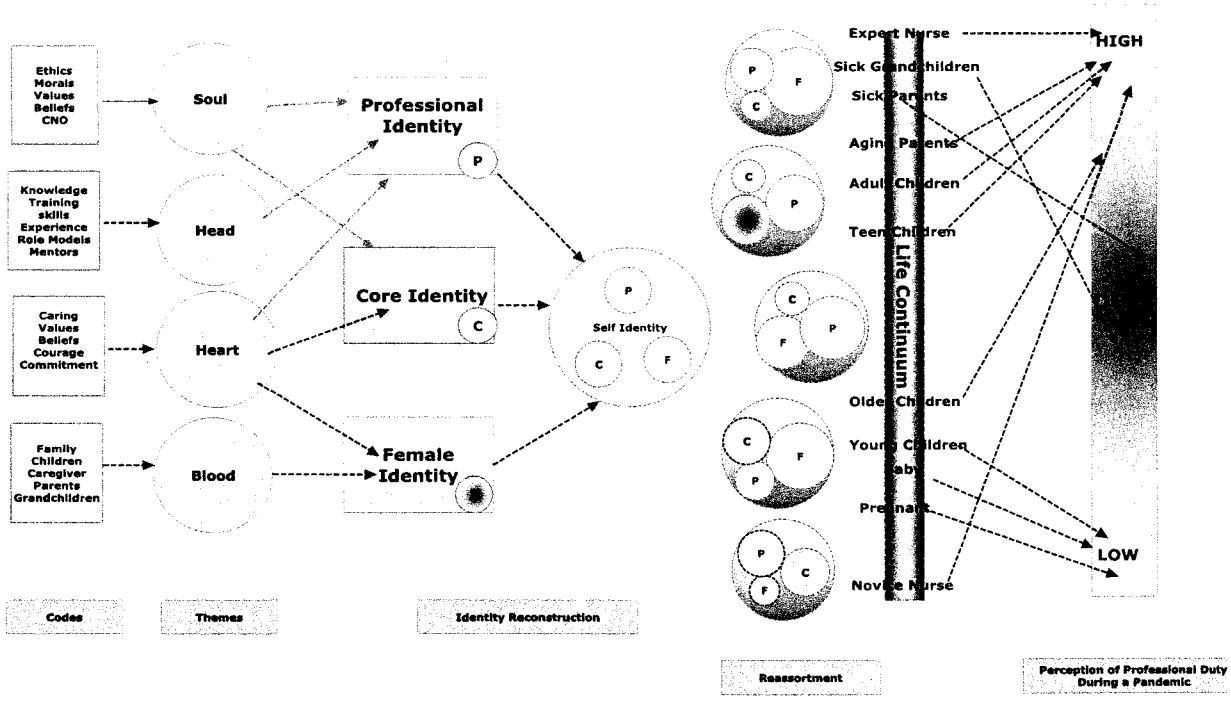

Figure 4: Identity Construction, Reassortment and Influence on Perception of Duty during a Pandemic

Appendix L: Theme Areas Indicated for Pandemic Planning and Policy Action

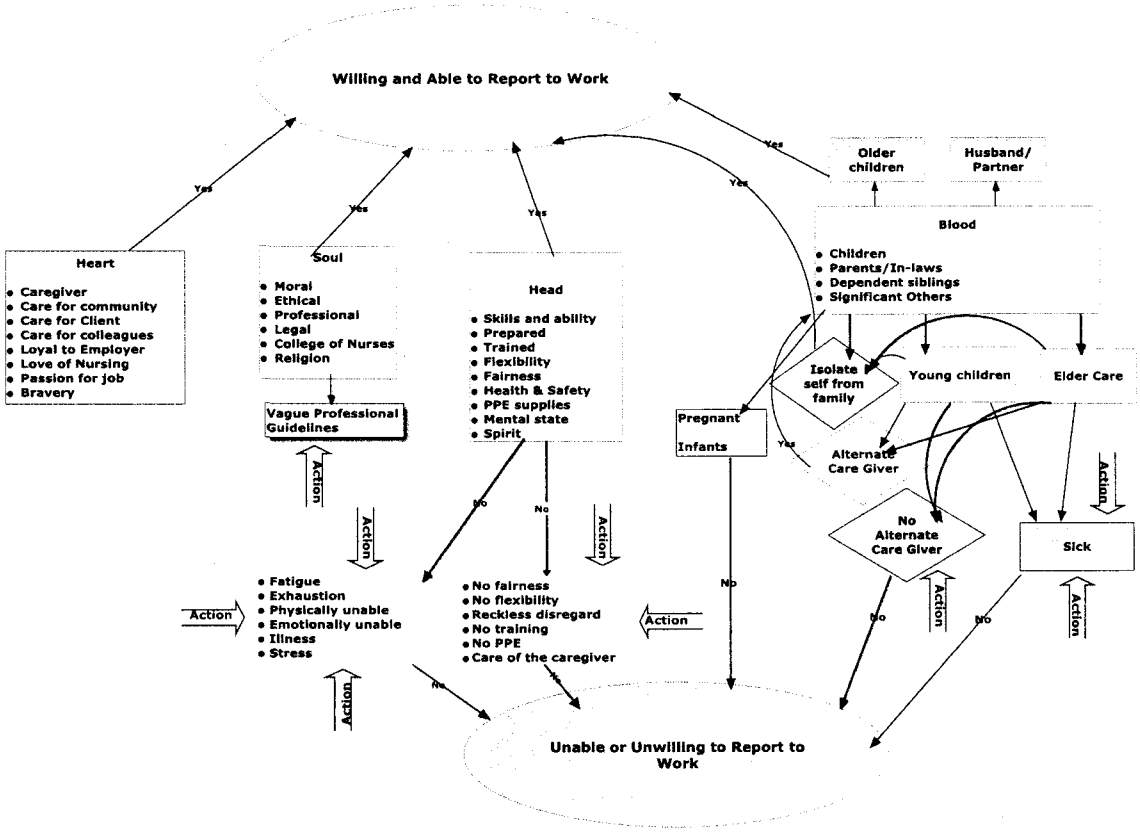

Figure 3: Theme Areas Indicated for Pandemic Planning and Policy Action

Appendix M: Participating Health Units

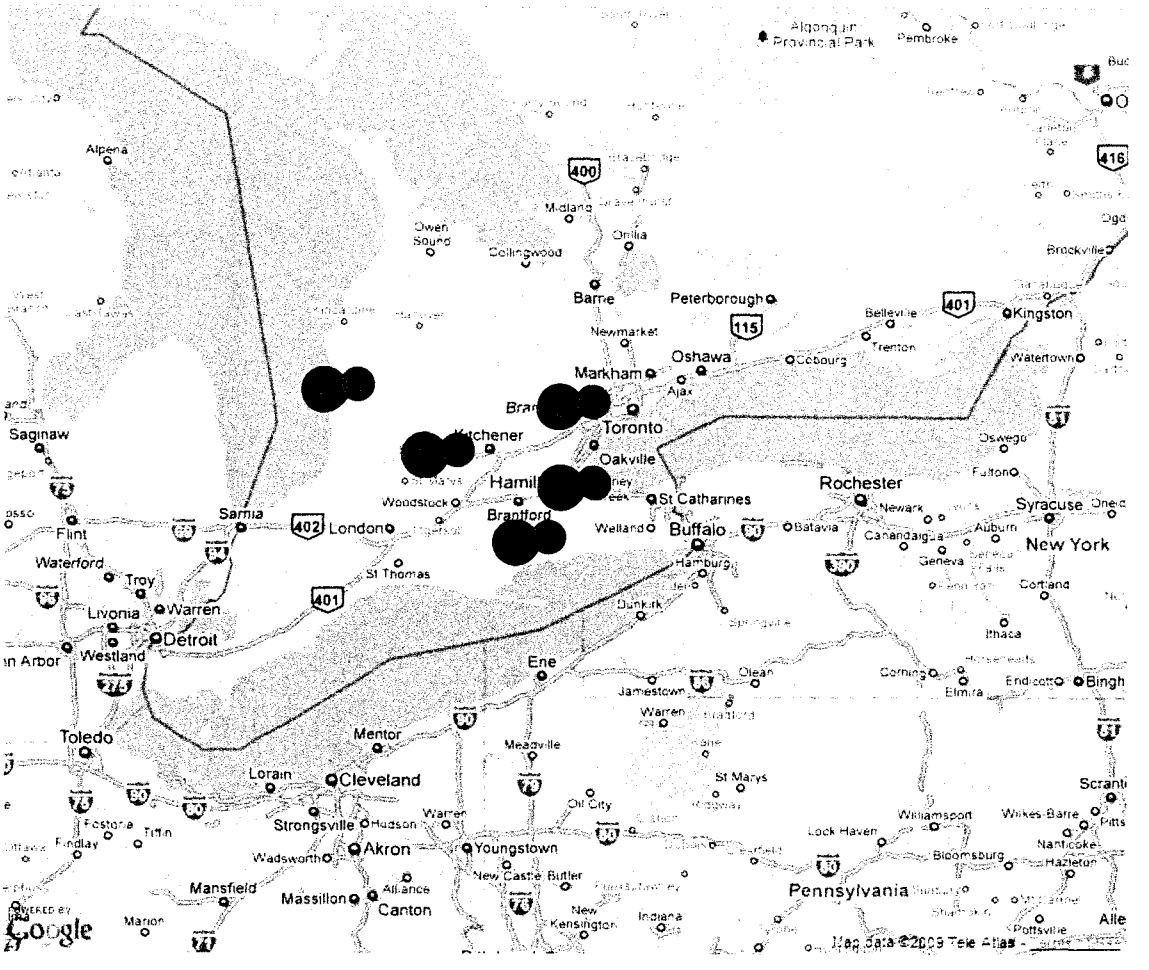

Figure 4: Geographical Representation of Participating Health Units