

**Nursing Emergency Preparedness Education:
Why do Nurses Need it? Do Nurses Have this Knowledge?**

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University of Victoria, 2009

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Abstract

A review of theoretical and research literature that is relevant to nursing and emergency preparedness is the broad focus of this project. This literature review identifies how and to what extent nurses are being educated on emergency preparedness planning and response.

Additionally, this review demonstrates how and why nursing emergency preparedness education is integral to community and hospital response plans. Emergency preparedness education for nurses is examined in light of historical influences, professional responsibilities and collaborations and partnerships. It is anticipated that this project will begin to build a platform that showcases the value and significance of nursing emergency preparedness education.

Keywords: disaster, education, emergency preparedness, nurses

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Project Introduction

Over the last decade, the global proliferation of new infectious diseases and the possible threat of chemical, biological, radiological, nuclear and explosive (CBRNE) terrorism events, have forced countries to seriously examine their capacity to respond in the event of a large scale public health crisis. (Amaratunga et al. 2008, p.1)

Amaratunga et al. (2008) suggested that these various challenges have driven healthcare institutions and professionals to begin thinking about emergency preparedness planning and response. Infectious disease outbreaks such as the Severe Acute Respiratory Syndrome (SARS) outbreak of 2003, pandemic influenza of 2009, and the ongoing H5N1 avian influenza watch in Asia have generated a profound emphasis on preparing for infectious disease outbreaks of catastrophic proportion. Further to this, events such as 9-11 and the anticipation of future terrorist attacks have catalyzed healthcare organizations to prepare plans that would facilitate an effective and efficient response to such incidents.

Knowing that an emergency or disaster situation can occur at anytime has made planning essential; but is being prepared enough? Tomczyk et al. (2008) discussed this very question and suggested that it is not the level of preparedness capacity that should be sought but the level of preparedness capability. They contended:

It is not the preparedness capacity of the organization (the plans, supplies and resources in place) but rather the preparedness capability of the organization (the skills, proficiencies, competencies or the response of staff to the disaster) ...that is the true measure of preparedness. (p. 246)

A crucial component of this capability is ensuring that nurses have the education and requisite knowledge to respond to such events. However, numerous authors have reported that

there is a lack of nursing education related to emergency and disaster response (Amaratunga et al., 2008; Douglas, 2007; Gebbie & Qureshi, 2006; Yonge, Rosychuk, Bailey, Lake, & Marrie, 2007). In Canada, nurses represent the largest sector of the healthcare workforce and will most certainly be on the frontline of any emergency response. All nurses, from novice to advanced practitioner, require the basic knowledge to respond safely to disasters or major incidents (Douglas, 2007). However, do nurses have this knowledge? And, is knowledge related to this vital area of study incorporated into nursing curricula?

Objectives of the Project

The objectives of this project were two-fold. The first objective was to describe how and to what extent nurses are being educated about emergency preparedness planning and response. The second objective was to describe the integration of nursing emergency preparedness education in community and hospital emergency response plans. In the future and as a result of this project I hope to raise awareness of, and catalyze a conversation about, this important topic among government officials, professional associations, regulatory bodies and employers. Accordingly, it is anticipated that this project will begin to build a platform that show-cases the value and significance of nursing emergency preparedness education.

Project Literature Review

Search Strategy and Criteria

The application of Boote and Beile's (2005) literature review framework was used to advance understanding of nursing and emergency preparedness. A targeted literature review provided an opportunity to identify and explore literature within this field of study and "to build on the scholarship and research of those who have come before us" (Shulman, 1999, p. 162-163). Having the capacity to identify what work has already been done in the field and what avenues

of scholarly inquest have not yet been investigated provided an opportunity to move forward with useful and timely research. Additionally, Boote and Beile's (2005) *Literature Review Scoring Rubric* was used to guide the writing of this project ([See Appendix A- Table 1A](#)).

Peer-reviewed published articles that discussed nursing in the context of disasters, emergency response, duty to provide care and emergency preparedness education were searched within CINAHL and Medline-data bases from January 2000 to January 2011. The following search terms were used: emergency preparedness (1,135 results), emergency preparedness and nursing (333 results), emergency preparedness and nursing education (151 results), nursing and disaster education (684 results), disaster nursing (2080 results), nursing students and disaster nursing (110 results), pandemic influenza (8,022 results), influenza (39,447 results), and nursing and outbreak (693 results). Additionally the Google Scholar database was used. The currency of literature was an important consideration; therefore, the search was limited to the past decade to explore how and whether or not various natural and human-made disasters or events have had an impact on nursing emergency preparedness education. Throughout the review, references cited within relevant books, articles and documents were also reviewed and examined for additional sources.

Potential articles underwent title, abstract and full review for eligibility based on the following specific criteria: less than 10 years old, written in English, and containing data on nursing staff and student hospital or community disaster emergency preparedness education; duty to provide care and disaster nursing. Articles were not restricted to a specific geographic population as a global perspective was assumed to provide an opportunity to view this area of study from other vantage points within the international nursing community and secondly, many disasters transcend national boundaries. Such inclusivity served to broaden the scope of the

search in an attempt to capture the breadth of what is known about this topic and to ensure a thorough and purposeful review (Boote, & Beile, 2005). Within these parameters, the literature review resulted in 96 articles that were identified as relevant. Using a focused approach guided by specific criteria, 29 articles were identified as relevant for this project as they examined emergency preparedness education in light of nursing response in emergency and disaster situations. These 29 articles were chosen as they were specific to the objectives of this project, identifying applicable literature that examined or discussed: public health emergencies and nursing practice; professional obligations of nurses during emergency or disaster situations; emergency preparedness education in nursing curricula; and nurse and disaster preparedness. Additionally, five bioethical articles examining professional obligations during public health emergencies were selected. The findings from the literature are integrated throughout this paper within each subsection to engender a deeper understanding on this subject.

In addition to peer-reviewed literature, a comprehensive search was completed within the Canadian Nurses Association (CNA) and Canadian professional nursing college websites across Canada. The intent of including literature from these sources was to locate and consider available research, guidelines and information published or unpublished on this topic. This literature was integrated throughout this paper.

It is important to note that emergency preparedness planning and response is not exclusive to nursing. Although other health related disciplines and communities may be called to respond to emergency situations, the focus of this project will be confined to the discipline of nursing and education therein. It is anticipated however, that the findings of this project may serve to contribute to and highlight the need to address emergency preparedness education in other disciplines.

Theory Guiding Emergency Preparedness Practice and Education

Heidegger (1962) suggested that, what guides us is what is important and meaningful to us at that time; therefore, being in tune with the concerns that guide our actions is critical to the enhancement of our practice (Hartrick Doane & Varcoe, 2005). Theory helps nurses understand phenomena by applying, “inter-related concepts, definitions and propositions into a systemic view of the phenomena for the purpose of explaining and making predictions about the phenomena” (Lobiondo-Wood & Haber, 2009, p. 564). Silva (2009) contended, “all nursing theory and research is derived from or leads to philosophy” (p. 16). Further, she reported that when nurse researchers examine the total “philosophy-science-theory triad, they develop a more holistic and less traditional approach to the possibilities of deriving nursing knowledge” (p. 18). Fawcett (2009) proposed that, “nursing knowledge development is guided by philosophical claims about the nature of human beings and the human-environment relationship” (p. 216).

Parse (1998) posited, “nurses must continue to develop unique nursing knowledge that is dedicated to the betterment of human kind” (p.xi). As well, numerous authors reported that emergency preparedness education encompasses unique knowledge-skills, abilities and competencies required to function in a disaster (Chan et al., 2010; Douglas, 2007; Legg, 2009; Tomczyk et al., 2008; Usher, 2010; Veenema, 2007). Parse asserted that totality paradigm nursing practice is guided by a nursing process, action, observation and evaluation. Practice goals within this paradigm focus on the care and cure of the sick, prevention of illness and health promotion. The totality paradigm is congruent with emergency preparedness in which nurses assume the role of protecting the health and safety of individuals and communities during emergencies. Jakeway, LaRosa, Cary, and Schoenfisch (2008) suggested that nursing expertise can and should be used during all phases of the disaster cycle: mitigation, preparation, response

and recovering. They recommended that mapping the nursing process (assess, plan, implement and evaluate) to the disaster response cycle is critical as nurses are essential within all phases of the disaster cycle. They contended further that nurses working in emergency preparedness “embrace a population-based vision, and have the necessary skills and competencies to develop policies and comprehensive plans” (p. 353). Mapping the nursing process to the disaster response cycle is consistent with the totality view of nursing.

Reflecting on historical events, Nightingale wrote and spoke about health promotion as she continuously emphasized “positive health-determining patterns—the creation of health-promoting environments at the bedside, within the home, in the community, across regions, and nations, and for the world” (Beck, 2005, p.179). Nightingale sought to delve into the deeper causes of disease and as a realist she linked environmental concerns to sustainable health. Consistent with Nightingale’s view, the totality paradigm holds that humans adapt to their environment. This perspective is reflected in an emergency situation in which human beings interact with and respond to environmental hazards or situations. Similarly, emergency preparedness education promotes environmental health, a practice that “incorporates the precautionary principle in decision-making, monitoring and taking direct action to reduce environmental risk, educating regarding risk and exposures, facilitating behavioral change and giving input for organizational and policy formation” (Association of Community Health Nursing Educators [ACHNE], 2009, p. 11).

Moving within the philosophical perspective of the totality paradigm, one can examine emergency preparedness education from various theoretical positions that are consistent with this view. Population-centered nursing theory, one perspective that is congruent with the totality paradigm, can guide emergency preparedness education. This theoretical view is based on an

American graduate educational model for advanced practice public health nursing (APPHN) proposed by ACHNE (2009). ACHNE credits three documents (*Who Will Keep the Public Healthy; Public Health Nursing: Scope and Standards of Practice; Essentials of Doctoral Education for Advanced Nursing Practice*) that informed the educational strategies outlined in this document. Population-centered nursing theory and practice are discussed in the following way:

Population-centered nursing theory and practice explain nursing phenomena and science and their relationship to problem identification, evidenced-based interventions, and evaluations of population outcomes. This theory/practice incorporates the scientific underpinnings for nursing practice, clinical nursing scholarship, information and technology to transform healthcare. This practice is based on partnerships and collaborations with the population and members of the interdisciplinary/interprofessional team. (Levin, Cary, Kulbok, Leffers, Molle, & Polivka, 2008, p.184)

APPHNs require ‘a synergy of knowledge’ that affords them the ability to work in complex and often challenging situations. Similar to APPHNs, all nurses should have the opportunity to acquire the synergy of knowledge that is needed to respond safely to an emergency situation (Chan et al., 2010; Douglas, 2007; Legg, 2009; O’Sullivan et al., 2008; Tomczyk et al., 2008; Usher, 2010; Veenema, 2007). Population-centered nursing theory and practice can assist in the development of evidence based interventions and strategies in emergency preparedness by assessing risks and incorporating policies and procedures that mitigate harm.

Additionally, population-focused practice, based on the work of Issel and Bekemeier (2010), is congruent with the totality paradigm and the principles of emergency preparedness,

focusing on health promotion and risk reduction within the community. Population-focused care, sometimes referred to as population-based practice, “focuses on entire populations, is grounded in community assessment, considers all health determinants, emphasizes prevention, and intervenes at multiple levels” (Issel & Bekemeier, 2010, p. 226). Issel and Bekemeier (2010) suggested that safe practice of population-focused nursing care is instrumental in health outcomes of population-patients. They used the term population-patient to describe the target population or recipients of the intended care. Population-patient safety is defined as “freedom from accidental harm or injury or remaining unharmed or uninjured for all members of the population” (Issel & Bekemeier, 2010, p. 228).

Upon review of the various philosophies and theories that may guide nurses to describe, explain, or predict phenomena in the world of emergency preparedness, one can sense that philosophy and theory constitute a “never ending process” of knowledge development wherein the, “multiplicity of knowledge from many sources...[can be used] to create a kaleidoscope of possibilities” (Rogers, 1986, p. 4). It is this kaleidoscope of possibilities that will help in the development of emergency preparedness education as it relates to communicable diseases, population health and disaster management.

In addition to Boote and Beile’s (2005) literature review framework, the human-environment view coupled with the population-centered and population-focused perspectives were used to develop a better understanding of emergency preparedness education significance and to gain a greater appreciation of the lived experience of the nurse during an emergency situation.

Literature Review Findings

An Overview of Nursing Emergency Preparedness Education in Relation to Emergency Preparedness Planning and Response

Veenema (2009) suggested, “the world in which we practice today has changed dramatically, and nurses are being asked to respond to health care events for which they have little preparation” (p. ix). Several authors reported that nurses should have access to the appropriate education and training that will ensure they have the correct skill sets required to respond to any disaster or large casualty incident while providing for their own safety (Chapman & Arbon, 2008; Duong, 2009; Littleton-Kearney & Slepski, 2008; Stanley & Veenema, 2007).

Upon thoughtful consideration, four themes and numerous sub-themes were identified within the literature reviewed for this project. The first theme was *Historical Influences* in emergency preparedness. The second theme, *Professional Responsibilities*, included three subthemes. These were professional obligations, the social contract and nursing ethics within the context of emergency disaster response and communicable disease outbreak. The third theme, *Collaborations and Partnerships*, included subthemes of community assessment, collaborative partnerships and nursing leadership in emergency preparedness. The fourth and final theme was *Emergency Preparedness Education* for nurses. Each theme and subtheme will be discussed in turn.

Historical Influences. Critical reflection and analysis of historical literature provides an opportunity to learn how various discourses have been shaped and even sustained. Several authors highlighted the importance of understanding the issue historically (Amaratunga et al., 2008; D’Antonio, 2005; Gebbie & Qureshi, 2006). Exploring the historical contexts of emergency preparedness can inform and enhance how the past has shaped our professional

culture along with understanding the discourses that attend to social values and public beliefs (D'Antonio, 2005). History bridges knowledge from the past to present, filling in the gaps and providing greater clarity of how and why we do things.

Historically, nurses have made a vital contribution to emergency response. Numerous illustrations of these contributions can be found throughout the literature. For example, Gebbie and Qureshi (2006) asserted that the provision of emergency response originated with the exploits of Florence Nightingale during the Crimean War. Mansell (2003) described how nurses responded to the needs of Canadians during the First World War. She contended that Canadian nurses not only responded to this military request, but also responded to the Canadian public's needs during the influenza pandemic of 1918, a role considered to be invaluable in maintaining Canadian public health.

Catastrophic or disaster-like events over the past 10 years continue to bring emergency preparedness into the forefront of healthcare institutions, government bodies, professional colleges and associations, and healthcare workers (HCW) (Amaratunga et al., 2008). These events include, but are not exclusive to, the terrorist attacks of 9-11, various anthrax episodes both in Canada and the United States of America (USA), the SARS crisis of 2003, and the many natural disasters we have seen globally, the most visible of which was the 2011 earthquake and tsunami that devastated Japan. Additionally, the *Annual Disaster Statistical Review 2010* reported that for the very first time the Americas headed the list of the worst continents affected by disaster (Guha-Sapir, Vos, Below, & Ponserre, 2011). This was due to the consequences of the January 12, 2010 Haiti earthquake; a single event that resulted in 3.9 million victims with 222,570 confirmed or presumed deaths (Guha-Sapir, Vos, Below, & Ponserre, 2011).

Professional responsibilities. Plagues dating back to 541 BC, placed ethical challenges within communities as they grappled between issues of individual autonomy and protecting the collective community (Austin, 2008; Racher, 2007). Autoimmune Deficiency Syndrome (AIDS) and SARS are reminders that infectious diseases remain a threat. Additionally, old diseases such as tuberculosis and staphylococcus are emerging in new resistant strains that pose communicable disease threats (Austin, 2008; Racher, 2007).

The emergence of new and evolving diseases has raised awareness among HCWs to the “scientific uncertainties and professional anxieties” that accompany new emerging diseases (Tomlinson, 2009, p. 458). Further to this, Yonge, Rosychuk, Bailey, Lake, and Marrie (2007) remind us that, “compared to the general population, nurses are disproportionately exposed to factors threatening their health and well-being...[and] some nurses temporarily or permanently [have] left their jobs as a result of the perceived threat to their well-being” (p.24). Hence, such events beg the question; “do HCWs have an obligation or duty to provide care even if it poses a risk to them?”

Professional obligations. Duty to provide care was a strong theme that was repeated throughout the literature. Several authors discussed the professional and personal tensions reported by many nurses during and after infectious disease outbreaks (Austin, 2008; Clark, 2005; Hsin & Macer, 2004; Olsen, 2006; Racher, 2007; Reid, 2005; Ruderman et al., 2006; Sokol, 2006; Tomlinson, 2009; Tzeng, 2004; Tzeng & Yin, 2006; Upshur et al., 2005; Yonge et al., 2007). In Canada, SARS prompted professional organizations and colleges to clearly articulate standards, competencies and the expectations of their membership in emergency and disaster response (CNA, 2008; College of Nurses of Ontario [CNO], 2008; College of Registered Nurses of British Columbia [CRNBC], 2007; College of Registered

Nurses of Manitoba [CRNM], 2009). These expectations further emphasized the significance of professional obligations.

Sokol (2006) asserted, “By virtue of their profession, doctors and nurses have more stringent obligations of beneficence than most. They have obligations to a specific group of persons (their patients) that nonmedical personnel have no obligation to help” (p. 1238). A critical examination of the historical accounting of ‘duty to provide care’ or special obligations as referred to by Sokol (2006), is a pivotal component of nursing emergency preparedness education. Society grants professional self-regulation and in return expects it will receive the care it needs (Tomlinson, 2007). Clark (2005) suggested that healthcare professionals are legitimated by social contract and should be available at all times. Additionally, the CNA Code of Ethics for Registered Nurses (2008a) and professional colleges and associations have clearly outlined expectations of respective memberships (CNA, 2008a; CNO, 2008; CRNBC, 2007; CRNM, 2009). The CNA Code of Ethics (2008a) states: “During a natural or human-made disaster, including a communicable disease outbreak, nurses have a duty to provide care using appropriate safety precautions” (p. 46).

Several authors argued that ethical obligations during emergency and disaster situations are complex and must be clearly understood (Balicer, Omer, Barnett, & Everly, 2006; Ehrenstein, Hanses, & Slalzberger, 2006; Hsin & Macer, 2004; Reid, 2005; Ruderman et al., 2006; Sokol, 2006; Tomczyk et al., 2008; Tomlinson, 2009; Tzeng, 2004; Upshur et al., 2005; Upshur & Nelson, 2008; Zoloth & Zoloth, 2006). The CNA (2008c) contended, “current legal frameworks, collective agreements, standards of practice and ethical codes provide a foundation for nurses in their ethical deliberations concerning their work during a pandemic or disaster” (p. 10). Ruderman et al. (2006) asserted, “it is not acceptable for codes of ethics to be vague and

ambiguous (p. 5). Upshur et al. (2005) maintained that codes of ethics should provide clear guidance to members regarding expectations and obligations during emergency or disaster situations. Clear and transparent expectations are required to afford nurses the opportunity to “reflect upon and think through their ethical responsibilities, including their competing duties and personal and professional values, before and when an emergency occurs” (CNA, 2008c, p.10). Additionally, government and healthcare sector employers must ensure that the safety of HCWs is protected at all times. As the CNA Code of Ethics (2008a) points out, “under provincial and territorial occupational health and safety legislation employers have a responsibility to provide a safe work environment” (p. 6). Clearly, the literature strongly suggests that a safe workplace includes the education required to support safe practice in emergency response situations. The requirement for a safe workplace environment supported by safe practice became highly evident to nurses during SARS.

The SARS outbreak and pandemic influenza of 2009, prompted many health care professionals across Canada to engage in discussions regarding competing personal and professional obligations during an emergency or disaster situation. While nursing ethics suggest a responsibility to the patient [public] during these extraordinary events, nurses and other healthcare professionals also identified compelling obligations to family (Qureshi et. al., 2005; Ruderman et al., 2006; Stangeland, 2010). Olsen (2006) reminded us of the importance of education and supporting policies when grappling with this ethical dilemma. He asserted, “Deciding whether to report to work in a disaster is not always easy. But being prepared, individually and through institutional policy, is the primary ethical demand disasters make of healthcare professionals” (as cited in CNA, 2008c, p. 8).

Reviewing the plethora of literature for this paper it was evident that historical and potential consequences of infectious diseases, in particular SARS, were the catalysts that prompted discussion regarding professional obligations and duty to provide care. Additionally, SARS and the impending pandemic influenza of 2009 prompted professional nursing colleges and associations to review and revise practice guidelines and standards and develop position statements in the wake of infectious disease outbreaks (CNA, 2007; CNA, 2008a; CNA, 2008c; CNO, 2008; CRNBC, 2007; CRNM, 2009). The literature revealed that in response to SARS, healthcare professionals began to discuss the conflict between professional duties and the fear of communicable disease transmission (Austin, 2008; Balicer et al., 2006; Ehrenstein et al., 2006; Masur, Emmanuel, & Lane, 2003; O'Sullivan et al., 2008; Qureshi et al., 2005; Reid, 2005; Ruderman et al., 2006; Selgelid, 2005; Sokol, 2006; Tausig, Selgelid, Subedi, & Subedi, 2006; Tomczyk et al., 2008; Tomlinson, 2009; Tzeng, 2003; Tzeng & Yin, 2006; Upshur et al., 2005; Upshur & Nelson, 2008). SARS took healthcare workers to an increased level of risk that previously had never been experienced. According to the data compiled by the WHO, 20% of all persons affected globally were healthcare providers with the highest percentage (43%) seen among Canadian healthcare workers (Hsin & Macer, 2004). Research studies reviewed for this paper suggested that despite potential risks, healthcare providers do recognize their professional obligations. Further to this, these studies reported that healthcare providers may be more receptive to responding to infectious disease outbreaks if they were provided with better education (Balicic et al., 2006; Ehrenstein et al., 2006; Hsin & Macer, 2004; O'Sullivan et al., 2008; Tzeng, 2003).

Social contract. Some authors reported that the duty to provide care for high risk patients is one side of the social contract between healthcare professions and society at large

(Clark, 2005; Reid, 2005; Rudderman, 2006; Tomlinson, 2009; Wynia & Gostin, 2004). The public expects that HCWs will care for them when they become ill with an infectious disease or during any emergency situation; this is seen as no different from any other illness or injury. This expectation is linked to the fact that healthcare in Canada is generally publicly funded and that only HCWs have the requisite competencies to provide effective care (Clark, 2005; Reid, 2005; Rudderman et al., 2006).

As mentioned previously, society grants exclusive scope of practice for the provision of an essential human service to professional groups in exchange for the privilege of self-regulation. This social contract leaves no one but licensed HCWs to whom one can turn in a healthcare emergency (Rudderman et al., 2006; Tomlinson, 2007). Society assumes that by freely choosing professions devoted to practice with the ill, HCWs assume the risks their practice entails (Clark, 2005; Hsin & Macer, 2004; Reid, 2005; Sokol, 2006; Tomlinson, 2007).

The social contract should also consider reciprocity between society and healthcare providers. Clark (2005) emphasized:

The [healthcare] profession has made implicit and explicit promises as part of a general strategy of social negotiation aimed at establishing a just arrangement of shared benefits. The relationship developed between society and the medical [healthcare] profession thus constitutes an instance of a justly designed agreement that satisfies what is one of the clearest instances of an actual and vital contract. (p. 75)

Upshur et al. (2005) contended, “Reciprocity requires that society supports [sic] those who face a disproportionate burden in protecting the public good and take steps to minimize burdens as much as possible” (p. 7). An example of this took place during the pandemic influenza of 2009 when HCWs were the first to receive the influenza vaccine as soon as it was available. This

principle of reciprocity between the public and HCWs was executed in exchange for healthcare human resources. Literature suggested that the HCWs' duty to provide care only applies if they are given the means to minimize the burdens and risks they incur (Austin, 2008; Hsin & Macer, 2004; Reid, 2005; Tzeng, 2004). Reciprocity demands that HCWs are provided with education about the etiology of contagious pathogens including infection prevention and control measures that are required to ensure their personal safety. To reinforce professional obligations that are implied in the social contract, Wynia and Gostin (2004) stressed, "special efforts should be made to ensure that all healthcare professionals receive all reasonable preventive and treatment measures in the event of an outbreak, such as vaccines, prophylactic therapies, and safety training" (p. 1100). Tzeng (2004) also asserted that education would reduce fears and potential consequences of caring for infectious patients.

Wynia and Gostin (2004) reported that language that supports duty to provide care during epidemics was removed from the American Medical Association (AMA) Code of Ethics in 1970 as epidemics appeared to be diminishing. Post 9-11, the AMA adopted a *Social Contract with Humanity* that contained a *Declaration of Professional Responsibility* (Clark, 2005).

Additionally, the literature revealed that post SARS, Canadian professional nursing colleges and associations revised their standards of practice and developed position statements that clearly articulated professional obligations and a legal duty to provide safe ethical and competent care (CNA, 2007; CNA, 2008a; CNA, 2008c; CRNBC, 2007; CRNM, 2009; CNO, 2008; CNO, 2009a; CNO, 2009b; College of Registered Nurses of Nova Scotia [CRNNS], 2007; International Council of Nurses [ICN], 2006).

Ethics. During an emergency or communicable disease outbreak, nurses and other HCWs may find themselves in various situations or circumstances in which ethical

decisions must be made. In the context of ‘duty’, Kant’s deontology (duty-based ethics) can be applied (Rodney, Burges, McPherson, & Brown, 2004). Deontology requires doing right, regardless of consequences (Tschudin, 2003). The principles of bioethics may offer solutions to moral conflicts that may arise in duty-based ethics. Ethical principles of autonomy, beneficence, nonmaleficence and justice based on the work of Beauchamp and Childress (1994) can be applied to address moral or ethical issues arising from practice and used to pursue moral reasoning (Rodney, Burges, McPherson, & Brown, 2004). The principle of beneficence is acknowledged in nursing ethical codes.

Storch (2000) suggested, “The principle of beneficence requires nurses to carry out their duties in ways that bring good to the client and minimize harm and the potential of harm” (p. 35). Vollman (2004) asserted, “beneficence requires potential benefits to individuals and society [be] maximized and potential harms [be] minimized while promotion of the common good and protection of individuals are considered” (p. 107).

The SARS crisis was an ethically challenging time as public health nurses played a vital role in protecting the health within the community, while nurses within institutions were challenged to protect and promote the health of the individual. Nurses encountered personal risk during this outbreak when providing care for those with an infectious disease of unknown etiology. The CNA (2006) reported, “Ethicists have acknowledged the tensions between the collective perspective and individual rights and have recently revised public health ethical principles and frameworks to guide decision-making” (p. 4). It is the complexity of these ethical tensions—community, individual, and self—that make emergency preparedness education a challenge. In particular, post SARS and 9-11 several authors reported a renewed public attention

to the role of public health in protecting the health of the population from communicable diseases (CNA, 2006).

Does freely choosing a profession devoted to practice with the ill suggest that nurses assume and accept the personal risk associated with this choice? Several authors raised the question of personal risk and professional obligation (Chaffee, 2006; Olsen, 2006, Sokol, 2006; Tomlinson, 2009). CNA (2008c) stated, “If we agree with the statement that nurses accept some occupational risk by their choice of career, then what is the limit of the additional occupational risk to health and safety during an emergency situation?” (p. 4). There appears to be many theories related to the topic of risk. Tomlinson (2009) claimed that HCWs who have chosen a specialty with inherent risks, such as infectious diseases, have a duty to provide care when risk escalates. Sokol (2006) also suggested that defining acceptable levels of risk should be assessed within a specialty or area of work (emergency department or infectious diseases). Further, he suggested that accepting employment in high-risk areas or specialties implies consent to exposure of a variety of said risks (p. 1239). These examples are placed in the context of ‘knowing’ and recognizing risk. However, situations of uncertainty and unknown risk continue to pose challenges.

The SARS outbreak of 2003 demonstrated how nurses had to make decisions for which they were grossly unprepared. Not only was the etiology of the SARS pathogen unknown, but nurses were left to face an unknown deadly communicable virus for which treatment as well as appropriate infection control precautions to ensure nurse safety were unknown (CNA, 2008c; Upshur et al., 2005). Situations such as SARS suggested that when the level of risk is unknown and appropriate equipment and protocols cannot be applied, HCWs were faced with the ethical dilemma of caring for self over other. As Reid (2005) reported, “one’s obligation to oneself is

no less moral in character than one's obligation to others" (p. 357). In addressing ethical dilemmas related to self risk, CRNBC (2007) reported that it may be acceptable for nurses to withdraw from or refuse to practice under certain circumstances. The CRNBC (2007) Practice Standard *Duty to Provide Care* states, "there may be some instances where nurses are not obligated to place [themselves] in situations where care delivery would entail unreasonable danger to [their] personal safety" (as cited in CNA, 2008c, p. 6).

Additionally, government and healthcare sector employers must assume responsibility to ensure that HCW safety is protected at all times. As the CNA Code of Ethics (2008a) points out, "under provincial and territorial occupational health and safety legislation, employers have a responsibility to provide a safe work environment" (p. 6). Further, the code highlights the reciprocal duty of employers to ensure education regarding risks, provision of equipment and supplies, clear and timely information, and to be supportive of employee health needs (e.g., prophylactic medication or vaccination if available). Since SARS there is ample evidence in the literature of the importance of both transparency and reciprocity to gain trust and a more positive attitude towards risky situations and duty to care (Austin, 2008; Hsin & Macer, 2004; Sokol, 2006; Tomlinson, 2009; Tzeng, 2004; Upshur et al., 2005).

It is historical events such as SARS that remind us of the significance of nurses gaining clarity about ethical dilemmas and choices. Storch (2000) contended that nurses need to reflect on why this is an ethical dilemma. She asserted, "ethics is about relationships, [and] a first action could be to consult the Code of Ethics for Registered Nurses, which serves as a guide to ethical responsibilities in nurse-client relationships" (p. 35). The use and application of an ethical framework can assist with problem solving and help nurses consider relevant information that can result in the best solution in the context of an emergency at a specific time. Storch

(2000) also suggested that other options beyond ethical frameworks and models are the development of comprehensive protocols and education that provide nurses with the appropriate resources to guide them during ethical dilemmas.

The International Council of Nurses (ICN) (2006) maintains that nurses should be systematically trained and educated in order to be effective in a crisis or emergency situation. The ICN (2006) contends further, that emergency preparedness education should provide, “a sound knowledge base, skill development, and an ethical framework for practice” (p. 3). Additionally, inclusion of an ethical framework to guide ethical decision-making would assist nurses “to resolve ethical dilemmas and conflicting obligations while meeting their responsibility to provide safe care” (CNO, 2009b, p.3). The CNA (2008c) also supports the importance of providing an ethical framework that can assist nurses in considering a role in an emergency or infectious disease outbreak. This support is evidenced in the CNA (2008c) *Ethics Practice* paper: *Nurses' Ethical Considerations in a Pandemic or Other Emergency*. The *Ethics Practice* paper reports that, current legal frameworks, collective agreements, standards of practice and ethical codes provide a foundation for nurses when faced with ethical decisions during an infectious disease outbreak or disaster. The CNA and professional colleges offer a number of resources that nurses can use to support nurses in their ethical reflection during a disaster or infectious disease outbreak (CNA, 2007; CNA, 2008a; CNA, 2008c; CRNBC, 2007; CRNM, 2009; CNO, 2008; CNO, 2009a; CNO, 2009b; CRNNS, 2007; ICN, 2006). These resources should be considered when developing emergency preparedness education for nurses. As reported earlier in this section, the ethical tensions between self, patient/client, and community can be daunting for nurses. Diverse philosophical perspectives that guide each individual during an infectious disease outbreak or disaster may create ethical tension between personal choices

versus professional obligation. Various ethical frameworks can help nurses navigate their way through ethical tensions during a communicable disease outbreak or emergency.

Collaborations and partnerships. Many authors identified the need to establish partnerships and foster collaborations that would ensure mutual planning and enhance learning in disaster nursing response. It was their contention that a collaborative approach to emergency preparedness education with government and professional organizations, schools of nursing, and accreditation and licensing bodies is critical for the successful attainment and sustainment of emergency preparedness education (Armatunga et al., 2008; CNA, 2007; Douglas, 2007; ICN, 2006; Jennings-Sander, 2004; Rogers & Lawhorn, 2007; Ruderman et al., 2006; Stanley & Veenema, 2007; Tomczyk et al., 2008; Upshur et al., 2005; Upshur & Nelson, 2008).

Community assessment. Nurses have a valuable contribution to make in the development of nursing emergency preparedness education. While a historical analysis provides an opportunity to reveal the evolution of a nursing role in emergency preparedness, it is of equal importance to place emergency preparedness into the context of the community. As Vollman (2008) suggested, community assessment is “the act of becoming acquainted with your community” (p. 238). Becoming familiar with one’s community provides nurses with opportunities to identify gaps and strengths within a given population and to begin “to analyze the complex interactions of sociological, psychological and physiological processes, determinants of health and the client’s lived experience” (CNA, 2008b, p. 22). By revealing the core of the community, nurses can uncover the “history, characteristics, values, and beliefs of...and gain insight into the [community’s] life experience” (Vollman, 2008, p. 254). For the purpose of this paper, community encompasses the various communities of practice, for example

communities within a hospital or healthcare facility (e.g., nursing unit, outpatient setting), a city, town or hamlet.

Several authors supported the importance of assessing the community in which the nurse practices to identify possible risks and threats and the impact of these risks on individuals or the community at large (ICN, 2006; Jennings-Sanders, 2004; Legg, 2009; Rodgers & Lawhorn; World Health Organization [WHO], 2008). Chapman and Arbon (2008) also reported that given the unpredictable nature of disasters, it is critical that nurses comprehend the possible scenarios that might occur within their practice settings. From an institutional perspective, hospitals may find themselves susceptible to hazardous events. Hospitals are a key part of the response to any emergency in a community that has health implications, so the unique climate, geographic transportation, and industrial vulnerabilities of the community where the hospital resides, can result in emergencies that have an impact on operations and the required response of healthcare professionals. Beaton et al. (2008) reported, “Certain individuals, facilities or communities may be more vulnerable to a particular hazard and this also needs to be assessed and considered as part of the planning process” (p. 474). Legg (2009) also reported the significance of recognizing the unique needs of special populations that may reside within the community. She stressed the importance of identifying pre-disaster special needs and equipment that would be required during a disaster response. Identifying vulnerable populations and recognizing the impact of a communicable disease outbreak or disaster is crucial in guiding the nurse on how to respond to the event.

Ushur (2010) reminded her readers, “nurses are the ones with intimate knowledge of the community and the populations’ health needs” (p. 1483). And it is this knowledge that will support the healthcare needs and requisite education required. She described that many nurses

have a background in epidemiology, which strengthens the capacity to predict certain health consequences and health care delivery issues depending on the type of infectious disease outbreak or disaster.

Taking a population focus approach to understand the environment in which a community or institution resides, provides the nurse with the opportunity to work with the community in the development of strategies to mitigate risks. According to Schepen and Yiu (2011), “Nurses must play pivotal advocacy and leadership roles to facilitate agency-specific and community-wide preparations for health-related emergencies and disasters” (p. 469). This consultative and collaborative approach is vital to the development of the appropriate emergency preparedness education that will support nurses practicing within these settings. Community assessment fosters a collaborative partnership that can promote community capacity and guide policy development based on current needs, issues and priorities. Further, Edwards, Etowa, and Kennedy (2008) contended, it will “reflect the dynamic realities and strengths of the community” (p. 213).

Collaborative partnerships. The Community Health Nurses of Canada [CHNC] (2011) describe collaboration as “actively involving and collaborating with individuals, groups, organizations, populations...to build upon strengths and increase skills, knowledge and willingness to take action in the present and in the future” (p. 18). The nursing profession plays an integral role in all aspects of emergencies, including mitigation, preparedness, response and recovery (CNA, 2007). Collaborative partnerships encourage nurses and others in positions of leadership to develop emergency response practice guidelines, using available resources and guidelines from governments, professional associations and regulatory bodies. Chapman and Arbon (2008) asserted that a multi-disciplinary collaborative approach was required in disaster

planning and preparedness. This position was echoed by numerous authors (Armatunga et al., 2008; CNA, 2007; Douglas, 2007; ICN, 2006; Jennings-Sander, 2004; Rogers & Lawhorn, 2007; Ruderman et al., 2006; Stanley & Veenema, 2007; Tomczyk et al., 2008; Upshur et al., 2005; Upshur & Nelson, 2008). Hanson and Spross (2009) spoke of the complexity of collaboration in this way:

Collaboration...implies partnership, shared values, commitment, and goals and yet allows for differences of opinions and approaches...collaboration requires individuals to interact holistically (strengths, weaknesses, emotions) and authentically, to share power, and to remain open to the possibilities for personal and professional transformation that exist within a collaborative partnership. (p. 285)

Nurses require effective collaboration and communication skills to consult successfully with individuals, groups, policy-makers and organizations at local, provincial, national and international levels (CNA, 2008b). A collaborative approach to emergency preparedness education can serve to build a robust education plan, one that is strengthened by the unique and diverse knowledge and expertise of each individual participating in the collaborative partnership (Gottlieb & Feeley, 2006). Broome (2007) refers to this as the “magic that happens” as each person brings a unique perspective and expertise to address the situation (p. 1-2). The complexity of the healthcare system in its response to disaster or mass casualty incidents requires many skills that cannot be dominated by any one discipline (Jakeway et. al, 2008). Therefore, interdisciplinary teams and cross-agency collaboration are critical to the establishment of emergency preparedness education (CNA, 2007). Additionally, Stanley and Veenema (2007) suggested, “Collaboration among education and professional organizations, schools of nursing, accreditation and licensing bodies is vital to the success of such an endeavor” (p. 543).

According to the CNA (2008b), collaborative practice builds an effective coalition that can exert enormous influence on policy process and the development and sustainability of emergency preparedness education. Collaborative partnerships are integral in capacity building and serve to promote social responsibility for health, expand partnerships for health, increase community capacity and empowerment, and secure an infrastructure for health promotion (CHNC, 2011).

Leadership. Emergency preparedness is broader than the development of policies, procedures, plans and education. It demands a leadership that is supportive and is accountable to the development and sustainability of the emergency preparedness education program. Several authors discussed the importance of strong leadership in disaster planning and response (Jakeway et al., 2008; Legg, 2009; Littleton-Kearney & Slepski, 2008; Tomczyk et al., 2008). These authors described the requisite skills required to lead in chaotic changing conditions and highlighted how a well-prepared nurse can bring leadership and management expertise to each phase of emergency preparedness.

According to Veenema (2007), leadership means, “giving reflective consideration of the realities of the clinical demands placed on nurses during catastrophic events and the need for altered standards for clinical care during disasters and public health emergencies” (p. vi). Nurses working in emergency situations must demonstrate leadership skills to successfully forge partnerships and connections across communities. As Wylie (2006) suggested, “Leadership is not a one man show—teamwork and the development of a critical mass of followers are essential to initiate and sustain change” (as cited in Hibberd & Smith, 2006, p. 371). Strong leadership and collaborative partnerships are integral to one another, in order to build effective coalitions.

This joint responsibility is particularly evident in the context of emergency preparedness where ethical considerations, trust and transparency are central to planning, response and recovery.

Numerous authors reported that nurses have the capacity to bring strong leadership and management expertise to each stage of the disaster cycle: mitigation, preparedness, response and recovery (Jakeway et al., 2008; Legg, 2009; Littleton-Kearney & Slepski, 2008; Tomczyk et al., 2008). Littleton-Kearney and Slepski (2008) contended that an effective response to an emergency situation requires a strong leader who demonstrates a strategic approach and interprofessional collaborative skills. Jakeway et al. (2008) also reported that a well prepared nurse brings leadership expertise to each phase in emergency preparedness. As discussed earlier, Legg (2009) suggested that nurse leaders responding to a disaster or infectious disease outbreak should, “possess the requisite skills, which include emotional intelligence, strong communication skills, the ability to embrace change and chaos as well as the ability to analyze and strategize for maximum impact and effect” (p. 5).

Transformational leadership is one approach that may be considered in the development of emergency preparedness education for nurses. This leadership style “appeals to higher ideals and moral values, such as humanitarianism, liberty, equality, solidarity, and justice” (Storch, 2006, p. 396). Transformational leadership fosters a commitment to a vision; a vision to provide the education needed to prepare nurses for the unexpected world of emergency preparedness. This leadership challenges the status quo and illustrates “nursing visionaries who see the future in terms of its possibilities” (Hibberd & Rodger, 1999). As Cameron (2002) pointed out, this leadership strategy creates a learning environment that encourages synergy among its membership who then can reflect on their practice, understand their practice, and identify what changes should be made to their practice. This synergy builds a community that is respectful and

values the diversity and equality within its membership. Transformational leaders use a ‘power with’ strategy to ensure a reasonable, open, transparent, inclusive, responsive and accountable collaboration within a community.

Mitchell (1996) asserted that an ethical leader is a person of moral character, engages in and models moral behavior and establishes a moral community. Rodney and Street (2004) described this moral community as “a workplace where ethical values are made explicit and shared, where ethical values direct action, and where individuals feel safe to be heard” (p. 217). In keeping with the ethical considerations that influence emergency preparedness education, transformational leadership is congruent with the CNA (2008) Code of Ethics as evidenced by the following statement:

In anticipation of the need for nursing care in a disaster or disease outbreak, nurses: work together with nurses and others in positions of leadership to develop emergency response practice guidelines, using available resources and guidelines from governments, professional associations and regulatory bodies. (p. 48-49)

For nurses to become effective leaders in nursing emergency preparedness education they must possess “personal integrity, strength, creativity and use collaborative approaches” (Lavin, Slepiski, & Veenema, 2007, p. 42). Just as nursing has a history of being creative and visionary in ensuring safe, competent and ethical care for patients, nursing leadership during turbulent times must draw upon creativity and vision to meet the challenges of developing and sustaining emergency preparedness education for nurses.

An Overview of Emergency Preparedness Education in Relation to Community and Hospital Response Plans

Emergency preparedness education. Currently, literature suggests that nursing emergency preparedness education in Canada is neither mandated nor recommended within nursing school curricula. Historically, emergency preparedness education has been embedded in community health or public health nursing courses (Kuntz, Frable, Qureshi, & Strong, 2008). According to a study by O'Sullivan et al. (2008), there is a lack of access to continuing education in emergency preparedness. Furthermore, there is a need to conduct additional research in order to conceptualize preparedness in the context of nursing and to ensure effective education in this field.

Following 9-11, it was reported that many nursing schools in the USA evaluated and augmented curricula to include emergency preparedness and mass casualty response (Stanley & Veenema). Additionally, the Nursing Emergency Preparedness Education Coalition (NEPEC), formally known as the International Nursing Coalition for Mass Casualty Education (INCMCE) developed competencies for American entry-level registered nurses related to mass casualty incidents. The *Essentials of Baccalaureate Education for Professional Nursing Practice* (American Association of Colleges of Nursing [AACN], 1998) provided the framework for these competencies (Kuntz et al., 2008; Weiner, 2006). In July 2003, the NEPEC reported that 56 USA nursing organizations and institutions had joined the Nursing Emergency Preparedness Coalition including the University of Ulster (Ireland) Nursing School of Health Sciences.

In Canada, registered nursing is a self-regulated profession, and nursing regulatory bodies are responsible for public protection by ensuring that registered nurses engage in safe, ethical and competent practice. This mandate is met through various activities, one of which is the

identification of competencies required for entry-level registered nurse practice (CNO, 2008a). Such entry-level competencies provide the foundation upon which nursing education program approval rests. These competencies serve as guide for nursing curricula development and advance public and employer awareness of the expectations of entry-level registered nurses. According to the National Competencies in the context of entry-level registered nurses, the competencies related to the *Specialized Knowledge* state that the entry-level registered nurse must be able to:

Demonstrate awareness about emerging community disasters and global health issues; demonstrate knowledge of population health and population health issues (this includes emergency/disaster planning); know how and where to find evidence to ensure personal safety or safety of other health care workers. (CNO, 2008a, p. 9)

Various Nursing Colleges across Canada have identified expectations related to emergency preparedness education within nursing standards and competencies. Nevertheless, it is not well documented how and to what extent nursing faculties are incorporating this content in nursing curricula. However, the College of Registered Nurses of Nova Scotia (CRNNS, 2007), published a position statement related to the *Core Competencies for Registered Nurses and Nurse Practitioners in an Emergency or Disaster*. The College suggested that while the core competencies for emergency and disaster events are broad in nature, they can be applied to all nursing practice across a diverse continuum. Emergency preparedness education is not specific to public health or emergency nursing; emergency preparedness is a shared responsibility for all members within a community.

The WHO (2008) contended that in light of historical emergency or disaster events such as those described in this paper, it is critical to “find the right people with the right competencies

at the right time and the right place to strengthen preparedness for, response to, and recovery from an emergency or disaster” (p. vii). Further to this in November 2006, the WHO along with other partners reviewed the role and contribution of nursing and midwifery in emergency preparedness. Following this review, recommendations for integrating emergency preparedness and response into undergraduate nursing curricula were developed.

Some authors reported that disasters take a physical and psychological toll on individuals involved in an incident (Neria, Nandi, & Galea, 2008; Usher, 2010). Usher (2010) contended, “the physical and psychological needs of those affected by the disaster, as well as the health care workers, are now a well recognized post disaster need” (p. 1483). A wide range of healthcare services are used during a disaster or emergency incident, demanding that nursing emergency preparedness education not be focused exclusively on public health and emergency nursing; rather, it must include nurses in all areas of practice. Usher (2010) recommended that both general and specialty disaster content should be developed within the context of nursing practice. For example, faculty who teach mental health could incorporate post-traumatic distress into courses while faculty who teach pediatrics might consider discussing the special needs of children both during and following an event. For teaching faculty who might not already include emergency preparedness content in their courses, the inclusion of such content would advance the preparation of entry-level nurses in the field of emergency preparedness education. Similarly, including key emergency preparedness content into existing courses was suggested by the National Organization of Nurse Practitioner Faculties (Littleton-Kearney & Slepski, 2008). The CRNNS (2007) stated its commitment to working with registered nurses, employers and all other stakeholders to assist nurses in Nova Scotia to meet these additionally required core competencies of the College’s Emergency Preparedness Plan.

Several authors voiced the need to educate nurses in emergency preparedness by incorporating this education and training into undergraduate curricula or by offering it through continuing education (ACHNE, 2009; Buyum, Dubruiel, Torghele, Alperin, & Miner, 2009; Carter & Gaskins, 2010; Chan et al., 2010; Daily, Padjen, & Birnbaum, 2010; Hilton & Allison, 2004; Ireland, Ea, Kontzamanis, & Michel, 2006; Jennings-Sanders, Frisch, & Wing, 2005; Kuntz et al., 2008; Rebmann & Mohr, 2010; Littleton-Kearney & Slepski, 2008; Veenema, 2006; Weiner, Irwin, Trangenstein, & Gordon, 2005; WHO, 2008). Levin et al. (2008) described the complex nature of community health nursing in light of vulnerable populations, environmental hazards and global health threats and proposed graduate education for advanced practice public health nursing that would incorporate prevention and population health practices congruent with emergency preparedness. Jorgensen, Mendoza, and Henderson (2010) advocated building emergency preparedness competencies within professional nursing colleges and association standards. Numerous authors advocated emergency preparedness education through healthcare providers' workplace settings (Balicer et al., 2006; Chapman & Arbon, 2008; Doung, 2008; Hsin & Macer, 2004; Jennings-Sanders, 2003; McHugh, 2010; O'Sullivan et al., 2008; Tomczyk et al., 2008; Tzeng, 2004). However, it is important to note that while the literature did not conclusively support one venue of education over another, it did provide overwhelming support for the need to educate nurses to safely respond to and practice in a disaster or infectious disease outbreak. Several authors contended that emergency preparedness education would contribute to positive attitudes regarding risk perceptions and instill the confidence required to respond to the occasion. In addition, a number of authors argued that when nurses believed that they were adequately prepared to respond to unanticipated events, their sense of empowerment and

confidence increased (Balicer, et al., 2008; Chapman & Arbon, 2008; Doung, 2009; Tzeng, 2004).

The complexity of emergency preparedness education was evident within the literature reviewed. As reported in this project, there were various tensions reported within the various themes and sub-themes discussed, complicated by the multiplicity of knowledge required for nurses within each practice context. The literature uncovered that emergency preparedness education requirements would be dictated by various practice settings resulting in “a broad range of knowledge, skills, and abilities required of the professional nurse” (Legg, 2009, p.4). Daily, Padjen, and Birnbaum (2010) reported that there are many challenges to the development of emergency preparedness competencies citing: infrequency of disaster events, multi-disciplinary response without defined roles and responsibilities, the diversity of roles and tasks as dictated by the uniqueness of each event, and variant levels of competency requirements to each specific response. Additionally, they reported that inconsistent terminology and lack of a standardized language may inadvertently sabotage educational endeavors. Chapman and Arbon (2008) also described the lack of standardization and asserted that while research had identified major gaps in emergency preparedness education, it was difficult to make recommendations without further research that was, “coordinated and aimed at establishing standards in delivery and content of disaster preparedness education and training” (p. 143). O’Sullivan et al. (2008) also supported further research, “to define preparedness in the context of nursing to delineate the most effective and efficient methods for training of healthcare workers” (p. 17).

Jennings-Sanders et al. (2005) not only reported the importance of emergency preparedness education but they also recommended enhancing the specialty practice of disaster nursing. They emphasized that “Nursing faculty must realize that disaster preparedness is

mandatory content for all professional nurses. Thus, the content needs to be addressed in basic, required coursework” (p.83). The basic core competencies that they recommended are based on mass casualty incidents and include: critical thinking, an ethical framework to support decision-making and prioritizing needs in disaster response, assessment, addressing the safety issues for self and others, technical skills, ability to demonstrate safe administration of immunizations, and finally, communication, ability to describe the chain of command and management system utilized during a mass casualty incident. A point of confusion in the Jennings-Sanders et al. (2005) study was their reference to building the ‘discipline’ of disaster nursing. However, their findings and recommendations clarified that they were recommending the development of disaster nursing as a specialty practice within the discipline of nursing. Inappropriate and inconsistent use of the terminology *discipline* versus *specialty* can be misleading to the reader.

While many American authors supported and recommended emergency preparedness education for nurses, this was due to a paradigm shift that has occurred in response to the 9-11 terrorist attacks. Mondy, Cardenas, and Avila (2003) reported, “Preparedness efforts for bioterrorism have undergone a paradigm shift in recent years, moving beyond military, policy and emergency medical services into the arena of public health”(p. 423). There are reports that advanced practice public health nurses in America are being educated in bioterrorism surveillance and epidemiology in response to CBRN events. Additionally, this education includes recognizing the broader implications of bioterrorism on, “public health nursing practice, research and academia, and policy development” (Mondy, Cardenas, & Avila, 2003, p. 430).

A gap noted in the literature pertained to the extent that emergency preparedness education, regardless of the venue, is being offered globally. Reducing the impact that disasters and communicable disease outbreaks have on communities and individuals requires further

research that informs how and to what extent emergency preparedness education for nurses is occurring, illuminates curricular content, and sheds light on the lived experience of nurses who respond to the call of duty. O'Sullivan et al. (2008) also suggested that research should further examine, "potential, gender-based differences in perceptions of preparedness for such disasters, and the implications of such differences on training needs. Tracking of perception preparedness over time will facilitate evaluation of the effectiveness of modern emergency response training programs" (p. 17).

Project Limitations

Littleton-Kearney and Slepiski (2008) reported, "Because disasters are intrinsically unpredictable, complete preparedness for disasters, particularly in the case of a bioterrorism event, is likely not fully attainable" (p.106). This unpredictable characteristic of disasters and public health emergencies adds to the complexity of response and recovery. While the focus of this project was on emergency preparedness education for nursing, it is important to note the complexity of emergency response goes well beyond emergency preparedness education. The culture, beliefs and values of the community cannot be ignored during a disaster experience (Legg, 2009). Public health emergencies or disasters have the capacity to seriously impact self, identity and culture. Deeny and McFeridge (2005) asserted, "The natural or human-initiated disaster has potential to seriously disrupt the life and social networks of individuals, groups, and communities. It is reasonable, therefore, to suggest that a disaster may result in changes related to self, identity, and culture" (p. 433). Fothergill and Peek (2004) contended, "Poor people around the world suffer the greatest disaster losses and have the most limited access to public and private recovery assets. Being poor or disadvantaged affects one's experiences in a disaster, from risk perceptions, to the post reconstruction of lives and communities" (p. 90).

Environmental health consequences can place enormous pressures on disaster response. Adverse consequences of various types of emergency situations may require environmental monitoring, sheltering of displaced people, and water and sanitation issues (WHO, 2008). Disasters are traumatic events that may result in a wide range of mental and physical health consequences. Post-traumatic stress disorder can impact individuals and communities for days, months or years (Neria et al., 2008; Usher, 2010). These are only a few of the complex and challenging issues that nurses may face in emergency response and recovery. And while these issues go beyond the scope of this project, they are worth noting as they further enhance the complexity of content development in emergency preparedness education.

Conclusion

The first objective of this paper was to describe how and to what extent nurses are being educated in emergency planning and response. The CNA (2008c) reported there is a call to invest in developing and sustaining the education and skills required by nurses to safely, ethically, and competently respond to disastrous or mass casualty incidents. In an emergency or disaster situation, nurses are often the first responders or direct care providers. Recognizing that nurses constitute the largest group of healthcare providers, “their readiness to respond...will be significant in making a community more resilient against disasters” (Chan et. al., 2010, p. 406). NEPEC (2003) suggested that all nurses from novice to advanced practitioner have the basic knowledge to respond to mass casualty incidents. It is recommended that nursing emergency preparedness education assume a large measure of responsibility for preparing nurses to play an integral part in emergency response plans. In order to facilitate this, numerous authors asserted that nurses should receive this foundation within a basic baccalaureate education that prepares them to respond appropriately to the health needs of the public while protecting themselves and

others (ACHNE, 2009; Buyum, Dubruiel, Torghele, Alperin, & Miner, 2009; Carter & Gaskins, 2010; Chan et al., 2010; Daily, Padjen, & Birnbaum, 2010; Hilton & Allison, 2004; Ireland et al., 2006; Jennings-Sanders, Frisch, & Wing, 2005; Kuntz et al., 2008; Rebmann & Mohr, 2010; Littleton-Kearney & Slepksi, 2008; Veenema, 2006; Weiner, Irwin, Trangenstein, & Gordon, 2005; WHO, 2008) .

As the content of this paper suggests, it is vital to appreciate that emergency preparedness education must be shared and endorsed by many (Balicer et al., 2006; Chapman & Arbon, 2008; Doung, 2008; Hsin & Macer, 2004; Jennings-Sanders, 2004; Jorgensen et al., 2010; McHugh, 2010; O'Sullivan et al., 2008; Tomczyk et al., 2008; Tzeng, 2004). Although daunting, Buyum et al. (2009) asserted that integrating the complexity of emergency preparedness education into nursing curricula is a necessary endeavor. However, as previously reported, further research is required to assist in developing a framework and standardized terminology for the articulation of competency sets for emergency preparedness education. Educating nurses to meet the challenges and tensions associated with public health emergencies and disasters will be a difficult endeavor. Littleton-Kearney and Slepksi (2008) asserted, "Consequently, the dynamic nature of preparedness makes precise identification of basic educational priorities specific for nurses difficult at best" (p. 106). While it is impossible to educate every nurse on every type of incident, several authors discussed the need to identify basic emergency preparedness principles that could provide a framework for emergency preparedness education in various venues (Chan et al., 2010; Jakeway et al., 2008; Jennings-Sanders et al., 2005; Kuntz et al., 2008; Littleton-Kearney & Slepksi, 2008; WHO, 2006a). The need for global standards and guidelines is also supported by the WHO (2006a). This report is based on the work of expert global consultants in disaster response who recommended that,

“without global standards and guidelines, there is no firm foundation upon which to base the educational and training initiatives” (p.11). Further, this report recommended that the WHO develop international standards and guidelines that will assist countries in health preparedness, capacities and capabilities. In addition and given the diverse and changing challenges inherent in disaster situations, the healthcare sector must bear some responsibility for ensuring that ongoing emergency preparedness education is provided to all employees.

The second objective of this paper was to describe the integration of nursing emergency preparedness education in community and hospital emergency response plans. The multiple global and national disasters and health emergencies that occurred over the past 10 years, affected thousands of people at a single point in time, overwhelming and in some cases paralyzing communities for days, weeks and months. And even in times of unknown, such as SARS, nurses continued to respond to the healthcare needs of those who require emergency care. Nursing emergency preparedness education can play a critical role in preparing nurses to serve as an integral part in emergency response plans. Emergency preparedness education is an opportunity for all nurses to acquire the skills, knowledge and competencies required to respond to unplanned emergency or disaster events. However, as previously reported, the unpredictable nature of public health emergencies and disasters coupled with new and evolving infectious diseases, pose a challenge in developing content driven curricula.

The WHO report (2008) highlights the need to develop emergency preparedness education and to designate training institutions and programs where these skills can be acquired and updated. This report advocated preparation training for all healthcare professionals who work in different healthcare settings, highlighting the critical services of physicians, nurses, midwives, and public health practitioners. The WHO (2008) contends:

Nurses and midwives constitute the largest group and are front line workers who provide a wide range of health services....Nurses and midwives are routinely involved in emergency care. However, they need to be adequately prepared to operate under a validated framework in order for them to be fully engaged in a comprehensive and systemic response to health crises. Most of the pre-service curricula in nursing and midwifery reviewed have indentified deficiencies in the education of learners in emergency preparedness and response. (p. 1)

The WHO (2008) recommended that individual countries should develop their own programs based on the context of their country's profile by reviewing local, regional, and national hazardous identification risk assessments (HIRA) at each level. The key strategies the WHO (2008) suggested within the document were congruent with the various concepts discussed in this paper such as, intersectoral collaboration and collaborative partnerships. It is their intent that countries will, "adopt a competency-based approach to curriculum development; integrate emergency preparedness response into existing topics, or introduce as a separate course; and develop mechanisms for the monitoring of implementation and the sustainability of the educational program" (p. 2). It is important to note that the WHO consultant membership was composed of researchers, educators, curriculum specialists, practitioners, WHO representatives and invited stakeholders from around the world.

As evidenced in this project, emergency preparedness education cannot be neatly boxed up and tied up into one package. The diversity of knowledge required by nurses to safely and ethically respond to communicable disease outbreaks and disaster scenarios requires a complex of capacities, abilities, and skills. Further, knowledge is complicated by the different philosophical perspectives that may result in various perceptions of preparedness and response.

Ethical considerations are also complex, as nurses need to consider their professional role, their duty to provide care, and competing obligations to self and family. Despite these complex challenges, the literature has revealed that historically and currently, nurses continue to practice with those in need, even if it poses personal risk. Nurses may be willing to respond to disasters or major public health events, however, “their actual response may be determined by their sense of clinical competence, their perception of personal safety, and the confidence and safety of their family members and significant others” (Ireland et al., 2006, p.72).

As an advanced practice nurse working in the world of emergency preparedness it is my intent to continue to research, analyze and develop strategies that support nurses to respond safely and ethically to communicable disease outbreaks and emergency situations. As reported by O’Sullivan et al., (2008), “Further research to define preparedness in the context of nursing and to delineate the most effective and efficient methods for training healthcare workers is required” (p. 17). This project has awakened my senses to the complexity of where and how to incorporate emergency preparedness education. When I began my quest of inquiry, I initially felt this education should be integrated into undergraduate nursing curricula. However, after completing this journey, I now have an appreciation for the highly complex nature of this topic. Utilizing my education, clinical expertise, leadership skills and understanding of health care organizations, I plan to continue on this journey to gain a richer understanding of emergency preparedness education for nurses. The application of Boote and Beile’s (2005) scoring rubric will also be instrumental in my research as I continue to build upon the scholarship of others before me (Shulman, 1999). It is anticipated that this paper will catalyze a conversation related to this most important topic among decision-makers. The CNA (2008c) emphasizes:

Employers, public health officials, professional associations, regulatory bodies and government must collaborate and make decisions both in anticipation of and during an emergency in a reasonable, open, transparent, inclusive, responsive and accountable manner so that the public is protected as much as possible from harm and so nurses may practice in the best interest of the public. (p.10)

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Appendix A

Table 1A

Boote & Beile's Literature Review Scoring Rubric (Based on Hart 1999)

Category	Criterion	1 point	2 points	3 points
1. Coverage	A. Justified criteria for inclusion and exclusion from review.	Did not discuss the criteria inclusion or exclusion.	Discussed the literature included and excluded.	Justified inclusion and exclusion of literature.
2. Synthesis	B. Distinguished has been done in the field from what needs to be done.	Did not distinguish what has not been done.	Discussed what has and has not been done.	Critically examined the state of the field.
	C. Placed the topic of problem in the broader scholarly literature.	Topic not placed in broad scholarly literature.	Some discussion of broader scholarly literature.	Topic clearly situated in broader scholarly literature.
	D. Placed the research in the historical context of the field.	History of topic not discussed.	Some mention of history of topic.	Critically examined history or topic.
	E. Acquired and enhanced the subject vocabulary.	Key vocabulary not discussed.	Key vocabulary defined.	Discussed and resolved ambiguities in definitions.
	F. Articulated important variables and phenomena relevant to the topic.	Key variables and phenomena not discussed.	Reviewed relationships among key variables and phenomena.	Noted ambiguities in literature and proposed new relationships.

Category	Criterion	1 point	2 points	3 points
Synthesis (cont)	G. Synthesized and gained a new perspective on the literature.	Accepted literature at face value.	Some critique of the literature.	Offered new perspective.
3. Methodology	H. Identified the main methodologies and research techniques.	Research methods not discussed.	Some discussion of research methods used to produce claims.	Critiqued research methods.
	I. Related ideas and theories in the field to research methodologies.	Research methods not discussed.	Some discussion of appropriateness of research methods to warrant claims.	Critiqued appropriateness of research methods to warrant claims.
4. Significance	J. Rationalized the practical significance of the research problem.	Practical significance of research not discussed.	Practical significance discussed.	Critiqued practical significance of research.
	K. Rationalized the scholarly significance of the research problem.	Scholarly significance of research not discussed.	Scholarly significance discussed.	Critiqued scholarly significance of research.
5. Rhetoric	L. Was written with a coherent, clear structure that supported the review.	Poorly conceptualized, haphazard.	Some coherent structure.	Well developed, coherent.

Boote, D., N., & Beile, P. (2005). Scholars before researchers: On the centrality of the dissertation literature review in research preparation. *Educational Researcher*, (34) 6, 3-15.