Chapter 6: The Need for Healthcare Worker Sex and Gender-Sensitive Supports During Infectious Disease Outbreaks

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"There was a perception that management might listen more to men than to females."

Focus group participant (Amaragtunga et al., 2006a)

Gendered History of Nursing

Differential health impacts for men and women are influenced by the interrelations among gender, sex and power at societal and institutional levels (Wingwood and DiClemente, 2002; World Health Organization, 2002). Nursing is a profession marked by these gendered gaps in power. Historically, the profession has been shaped on deeply-rooted gendered notions of females' perceived natural abilities to provide caregiving, nurturing, support and assistance (Dodd and Gorham, 1994). During the colonial period in Canada, Catholic orders like the Grey Nuns (soeurs gris), and those from Anglican and Mennonite denominations provided essential care for frontier settlers (Strong-Boag, 1991). In the 18th and early 19th centuries, the work of nursing was delegated to female family members, as it was believed that caring for others was a natural extension of women's perceived 'maternal' and 'feminine' nature and was not

necessarily a 'skilled' labour or one that required compensation(McPherson and Stuart, 1994). By the late nineteenth century, hospital care and medical services rapidly expanded, and a system was developed to train middle-class women in nursing based on a hospital apprenticeship model (Bates et al., 2005). In the early to mid twentieth century, nursing was professionalized by lobbying for licensing legislation, establishing professional organizations, journals, and university training including science-based courses for nurses (McPherson, 1996). Yet, the gendered origins of creating a helping profession of trained women carried implications that resonate in current issues around defining and compensating 'skilled' labour, the ambiguous power differential in the triad (doctor, nurse, patient) regarding adequate voice, power, control and responsibility in their work environments, and the lack of recognition of the double work day women grapple to perform as nurses and also as mothers and spouses at home.

According to the 2005 National Survey of the Work and Health of Nurses, close to 95 % of the estimated 316,000 nurses employed in Canada are women (Canadian Institute for Health Information, 2006) so women clearly have a vested interest in health planning. However, recent studies show gender and sex-specific issues have been largely overlooked or ignored in healthcare planning and service delivery (Grant, 2002; Lagro-Janssen, 2007). This is a surprise given the embedded gender-based power hierarchy which exists in healthcare organizations that presents important considerations for occupational health planning, worker safety, and patient care (Ceci, 2004). The impacts of healthcare planning extend far beyond individual healthcare workers to their patients, families, communities and broader society. As Donner (2003) described, "by highlighting gender differences, planners can identify and give priority to those areas where gender-sensitive interventions will make a difference". Decision-makers can

improve disaster response capacity by taking these gaps into account to more effectively support healthcare workers and improve capacity.

While sex is a biological distinction between men and women, gender is socially constructed and refers to cultural norms, behaviours and perceptions assigned to men or women, which are unique to a specific culture or society (Lagro-Janssen, 2007). Sex and gender-based analysis recognizes the different societal and institutional contexts that exist to influence women and men's lives and, by extension, their health. Gender is recognized as an important determinant of health and it is a fundamental aspect of a population health perspective (Donner, 2003).

Given that most healthcare workers are women, workplace health, safety and emergency preparedness plans should develop and carry out sex and gender-specific supports. Considerations must also distinguish sex and gender-based issues necessary for effective delivery of health services on a daily basis as well as issues that emerge during infectious disease outbreaks that need to be mitigated to better support healthcare workers in their roles as first responders. Healthcare workers include a broad range of occupations essential to the delivery of health services and include nurses, doctors, allied health professionals, technicians, technologists and ancillary care workers. It is important that sex and gender be included among the factors that influence the health, availability, preparedness, and willingness to work among this group of healthcare workers.

Here we discuss the gendered context of the healthcare work environment by examining selected Canadian research studies and reports. Selected studies include: The Caring About Healthcare Workers (CAHCW) project (Amaratunga et al., 2006a,b) conducted three years after SARS which documented the opinions, thoughts and reflections of Canadian Emergency

Department and Intensive Care Unit nurses who worked during the outbreak. This study included focus groups, a national web-based survey of emergency and critical care nurses and an analysis of multi-jurisdictional emergency plans using an interdisciplinary, population health-based approach. The findings from this study include how the roles of sex and gender act as determinants influencing nurses' health and how these determinants should be integrated into preparedness planning. Quotes that appear herein were taken from one focus group interview question where respondents were asked whether women and men experienced the SARS crisis differently. Other reports include the SARS Commission Final Report (Campbell, 2006) and the Annual General Report from the Ontario Nurses Association in 2003.

Generalizations across sex and gender cannot be made without considering the biological, psychological and social context that impact men and women in different ways (Jackson et al., 2006). Incorporating sex and gender-based analysis into research involves asking new questions, to produce new knowledge about health issues related to the workers most affected. The ability to incorporate gender issues into infectious disease outbreak management programs improves the continuum of care throughout all phases (prevention, preparedness, response and recovery). For pandemic preparedness using a sex and gender lens will allow for a more refined and informed set of planning tools.

Gender mainstreaming is a strategy to ensure that these different impacts of sex and gender are considered at all levels of policy development and implementation. An important step forward is to apply gender mainstreaming in medical curriculums to ensure clinicians are aware of sex and gender-specific needs of patients (Lagro-Janssen, 2007). Another important step is its inclusion in assessing health service delivery and quality (Jackson et al., 2006; Wilson and Jackson, 2006). A sex and gender-based lens of analysis that incorporates gender mainstreaming

for responding to infectious disease outbreaks, such as pandemic influenza, serves to highlight gaps in preparedness.

While representative quotes from the Campbell Commission report and the CAHCW surveys have been included, more qualitative analysis is required to determine overall impacts to healthcare workers. Disaggregation of data by sex is a first step toward sex and gender-based analysis but it is not enough to interpret research findings accurately. Questions about sex and gender-specific context must be asked at each stage of research design to determine if methods for data collection and analysis are suitable to capture differential impacts adequately (Jackson et al., 2006). Recognizing the value of sex and gender in healthcare research and planning is now reflected in Health Canada's Women's Health Strategy, "to ensure that Health Canada's policies and programs are responsive to sex and gender differences and to women's health needs" (Health Canada, 2000; 2003).

SARS and Gender-Based Supports

The 2003 global outbreak of SARS showed the vulnerability of Canada and other countries public health preparedness plans. Sex and gender are now recognized as important considerations in emergency preparedness following Canada's experience with SARS (Health Canada, 2003). Among the Suspect and Probable cases in Canada three deaths occurred to healthcare workers, two were female nurses (National Advisory Committee on SARS and Public Health, 2003). During the SARS outbreak, many healthcare workers were quarantined, placed on continual work-quarantine and worked long hours. Further more many nurses faced ethical difficulties including work-family conflicts, grief, stress, anxiety, personal loss and trauma (Amaratunga et al., 2007).

Risk is an inherent part of the healthcare profession and even more so during infectious disease outbreaks where transmission of infection to healthcare workers is increased. During outbreak crises excessive mental or physical strain from occupational conditions and uncertainty occur. The impacts manifest as chronic stress affecting long-term health of those on the frontlines. There are, in the context of gender mainstreaming and gender-based analysis, factors of the healthcare work environment that increase (or decrease) the risk differentially. Analysis of these factors can help to determine the types of gendered instruments, informational and emotional supports that are needed to reduce the risk to healthcare workers. Several sex and gender-based factors that affect gender-based supports include:

1. Power,
2. Attitudes and Values,
3. Roles,
4. Relationships.

Social, occupational, instrumental, communication (information sharing) and emotional supports affected by the gender-based factors as described previously by Heaney and Israel (2002) can be re-framed with sex and gender in mind. In general, instrumental supports for healthcare workplaces refer to organizational programs, protocols and interventions that assist healthcare workers in performing their occupational roles (eg. human resource mobilization and provisions for protective equipment). Informational supports pertain to all forms of communication provided to frontline healthcare workers, as well as reception of feedback originating from the frontlines (eg. all forms of communication used to impart knowledge, notices and directives). Emotional supports refer to any intervention intended to relieve the

negative emotional impacts of the work environment on healthcare workers (eg. provision of space to allow employees to grieve after the death of a patient and on staff counselors). In each category of support, sex and gender play significant roles in the type of support designed, used, and its efficacy.

1. Power

During the SARS outbreak in Canada lack of communication support occurred with some nurses' concerns over personal safety and relaxing of personal protective equipment (PPE) that were ignored.[1] The lack of power and voice of the nurses revealed the incongruence between gender and power. The Campbell Commission report (2006) details this power differential when nurses were asked about wearing protective equipment. One nurse responded, "Many nurses raised concerns about PPE," and another stated "... in the beginning and after first outbreak we were told to remove our PPE – even masks. Nurses were very confused. Those who kept our masks on were told by our medical director to take them off, they were no longer needed even though we had many patients in ER at the time with respiratory problems"[2] (Campbell, 2006).

The lack of power and voice resulted in hundreds of nurses staging a demonstration in Toronto outside of the Scarborough General Hospital to make their voices heard. The Annual General Report from the Ontario Nurses Association in 2003 highlighted the 4 June gathering, "SARS was a major focus of ONA activity from March through June. A rally at the Scarborough General Hospital, site of the first outbreak, was one of the ways ONA called attention to the plight of frontline nurses affected by the outbreak" (Ontario Nurses Association, 2003). The nurses wanted better protection for healthcare workers treating SARS patients (lack of occupational and instrumental support), increased pay for full-time nurses to match agency

nurses (lack of occupational support) and a public inquiry into the handling of the outbreak (lack of instrumental, communication and social supports) (Habib, 2003).

The extension of this problem led to another outcome, the increased distrust of leadership and hierarchy when voiced concerns of nurses on the frontlines of SARS were dismissed. Nurses from Toronto expressed a sense of losing all control of their work environment, particularly when their advice and recommendations were not listened to by senior managers or for that matter, by physicians; this highlights the lack of communication supports (Amaratunga et al., 2006a,b).

A second type of power differential lacking instrumental and communications supports was noted during the SARS crisis. Canadian nurses who participated in focus groups conducted as part of the CAHCW project expressed resentment at their lack of professional authority to directly challenge physicians who were not following infection control protocols during SARS. Instrumental supports to assist with this type of situation could include cultural changes which address hierarchical boundaries between professions and the mechanisms for reporting concerns (Amaratunga et al., 2006a,b).

A third example that displays the lack communication and instrumental supports related to power was reported by O'Sullivan et al. (2007a,b). A national survey of Canadian emergency room and intensive care unit nurses indicated that many healthcare workers did not know about their institutional emergency plans. In healthcare organizations timely and adequate information flow is relevant in this circumstance. Information about different aspects of an outbreak, for example the newest policy updates, changes to infection control and patient care is an essential support for frontline staff. Healthcare workers at all levels need to know the protocols, risks, and

current status of the outbreak so they can inform their families, the public and take suitable actions themselves.

These examples depict the extant and impact of power differentials which have been perpetuated from a long-standing institutional hierarchy and occupational culture. Physicians, a profession comprised mostly of men (67.5%) have more power, prestige, and are regarded as having more credibility than nurses, 95% of whom are women (Canadian Institute for Health Information, 2005; Canadian Institute for Health Information, 2006). Nursing is a good example where sexual divisions of labour and power have been maintained for decades. The result has been undervaluing of nursing activities and the profession as a whole, which is regarded as 'women's work' (Evans and Frank, 2003).

Women are not alone as a marginalized group in nursing. Male nurses report feeling the power differential, and experiencing a lack of respect from their association with a 'feminine profession'. As described by Evans and Frank (2003), "men nurses often emphasize the type of nursing specialty work they do as a means of minimizing the feminine and stigmatized image of nursing... introducing oneself as an emergency room nurse focuses attention on the higher status of the emergency work, not on the lower status of nursing itself".

Power is also linked to allocation of resources. The provision of PPE is an important instrumental support for healthcare workers, for occupational health and safety, and also to prevent widespread transmission. Nurses from the focus groups were concerned about the lack of fiscal resources in the healthcare system for adequate supplies. Healthcare workers also expressed concern about the power of financial managers to supersede spending on protective equipment and supplies for infection control (Amaratunga et al., 2006a).

Difficulties surrounding PPE were shared by both men and women during the SARS

outbreak. One CAHCW focus group respondent highlighted the problems with masks, "One of the things that men had to deal with the masks was that they had to shave their beards - something that some people have personal identity with their beards, and other who for religious reasons have beards, so that is an issue."

Other problems related to lack of gender-based institutional support was revealed by focus group participants who indicated poor planning for gender-specific personal equipment, "We realized the masks were so large as they were designed for men. Most of the PPE equipment was designed for males." Another respondent indicated that the sizing of latex gloves ordered to fit the majority of workers, who are women, was sometimes a problem for men because they were not large enough. The issue of equipment and fitting is directly linked to the ability of healthcare workers to protect themselves. It was a real issue that contributed to stress and anxiety of many nurses (Amaratunga et al., 2006a; Campbell, 2006).

Access to information is an important communication support for frontline healthcare workers putting their health and in some cases their lives on the line as responders during infectious disease outbreaks. Withholding or limiting access to information is an act of power and reinforces the notion of power differentials within labour forces.

A strong literature base highlights the importance of recognizing the interrelationship between gender and power (Kickbusch, 2006; Wingwood and DiClemente, 2002). Differential health impacts for men and women are influenced by the interrelations between gender and power at societal and institutional levels. This gendered context is based on long-standing beliefs and assumptions which form the foundation of social structures characterizing the climate and culture of healthcare, and impact nurses and other professionals in their everyday work. Specifically, the major social structures which create gendered gaps in power include: 1) sexual

division of labour; 2) sexual division of power; 3) social norms and affective attachments; and 4) anatomical and biomedical properties (Wingwood and DiClemente, 2002). As with all social inequities, the impact is magnified during disaster situations (Enarson and Morrow, 1998), emphasizing the need to ensure that appropriate supports are in place before the next large-scale outbreak or other disaster. Particular consideration must be given to gendered ethics of care, gendered history of nursing, and gender-sensitive supports for emergency planning of healthcare.

For occupational supports the structural arrangement of healthcare organizations, including professional hierarchies, distinctly gendered occupations and high effort demands make 'power' a central theme in the healthcare work environment (Ceci, 2004; Evans and Frank, 2003). The structure also extends to the role of healthcare workers during disaster management (Amaratunga and O'Sullivan, 2006). The power differentials result from imbalances in control of resources, work assignments, scope of practice, access to information and attributed authority (Bolman and Deal, 1991). All of these influence the provision and impacts of instrumental, communication and emotional supports.

2. Attitudes and Values

One of the main findings of the Ontario Nurses Survey was that more than half of the nurses felt their SARS work was not adequately respected (54.5%), specifically 42% did not feel their work was respected, while 12.5% were unsure. The nurses' feelings of disrespect and perceived attitudes towards them were summed up by a respondent who stated, "We were treated so poorly considering what we had to go through. We were not treated with respect" and a second participant who stated that nurses were, "...poorly protected. It was like we were disposable" (Campbell, 2006).

Lack of respect is a common theme in the literature and is often expressed by nurses on the frontlines of healthcare (Ontario Nurses Association, 2004). In healthcare settings, authority and recognition are attributed to masculine characteristics, such as exerting control, rational thinking and speaking, and direct communication styles. In interviews with 36 head nurses in Sweden, Nilsson and Satterlund Larsson (2005) found that female head nurses reported feeling an expectation and need to demonstrate masculine-style leadership. In the same study, one male head nurse admitted to experiencing a naturally attributed authority in this type of organizational culture, based on him being a man. As Nilsson and Satterlund Larsson explained that being male automatically confers greater authority. This finding supports the trends in nursing which show women do not progress vertically into leadership positions as quickly as men (Nilsson and Satterlund Larsson, 2005; Brown and Jones, 2004). Evans and Frank (2003) in their qualitative study with male nurses reported that men in this profession feel pushed toward leadership and administration, and away from bedside care. This same finding was discussed by Nilsson and Satterlund Larsson (2005). Brown and Jones (2004) cited flexible work schedules as an important family-centered organizational support which assists women in coping with dual-role conflict; however, it jeopardizes career paths for women, because frequent breaks, or part-time status does not facilitate progression through the ranks.

An additional element of organizational climate and culture within healthcare institutions pertains to attitudes which project positive appreciation of the roles of healthcare workers on the frontlines, compared with negative perceptions which depreciate the contributions of healthcare workers. In Canada, government fiscal policies throughout the 1990s resulted in less money being directed toward Ontario healthcare forcing the system to reorganize. Many of the re-organizing efforts were directed to the acute care sector of the healthcare system. Nurses, as the

largest occupational group within the healthcare system were disproportionately affected by these efforts (Spence Laschinger et al., 2001). Burke and Greenglass (2000) examined the effects of hospital restructuring and downsizing on full-time and part-time nursing staff. Data collected from nursing staff included measures for personal and situational characteristics, hospital restructuring and downsizing variables, work outcomes and psychological well-being indicators, and work-family experiences. Both full and part-time workers described hospital restructuring and downsizing as having similar impacts. Nurses reported greater emotional exhaustion and poorer health and indicated greater absenteeism.

Due to budget constraints many healthcare institutions adopted a "just-in-time" staffing policy. Hospitals employed a smaller number of full-time workers, increased the number of part-time workers to take over regular shifts, hired more casual staff, and became increasingly dependent on agency nurses and overtime to cover shifts. The change in policies resulted in reduced surge capacity. Baumann et al., (2006) concluded that the consequence of fewer staff was increased overtime that placed the health of nurses in jeopardy. Casualization resulted in some nurses working for multiple employers.

During the SARS outbreak in Toronto, Code Orange that prevented nurses from working in more than one hospital stretched nursing resources to their limits. Nurses confirmed the lack of capacity in the healthcare system increased the amount of vulnerability of the entire system (Baumann et al., 2006). Moreover, casualization has undermined nurses' level of power, roles, responsibilities and entrenched historically held gender values and attitudes.

The lack of recognition, the view of nurses as a fiscal liability in the healthcare system and casualization of nursing labour (Burke and Greenglass, 2000) does not demonstrate appreciation of the contribution of the employee to the overall effort of response. Instead it is a

perspective which views the healthcare worker as a liable economic commodity, where work conditions must be controlled to reduce the fiscal impact on the organization, due to the imposed labour restrictions from union agreements. Again, in terms of divisions of labour and power, nurses are vulnerable to job instability given the piecemeal positions offered to many nurses across the system. Many nurses do not work full-time and must work two or three jobs to make up full-time nursing hours. For nurses who bear the role of lone parent in their household, or sole breadwinner, this pressure creates added stress, which is exacerbated during disaster conditions, particularly biological events which pose personal occupational health risks (Burke and Greenglass; Baumann et al., 2006).

Organizational, instrumental and emotional supports which dismantle negative or ambiguous attitudes toward frontline healthcare workers are needed to ensure work policies and conditions reflect genuine value of employee contributions to the provision of essential and quality healthcare services. Instrumental supports include investment in proactive health human resource mobilization and retention strategies. Emotional supports include strategic actions to mitigate hierarchical negative attitudes toward frontline staff, most of whom are women.

When examining the work climate and culture for frontline nurses, it is important to acknowledge projected values of healthcare institutions. The health of the healthcare workforce is of paramount concern but there are continual critical health human resource shortages, high fatigue, employee burnout, and significant levels of work stress, particularly among nurses (Canadian Institute for Health Information, 2006). By prioritizing the health of healthcare workers, institutions will enhance feelings of perceived organizational support among staff, enhance commitment, and protect overall response capacity for disasters by investing in the most important assets of their organizations. As described by Rhoades and Eisenberger (2002),

workers who perceive high support from their organizations, "generally find their job(s) more pleasurable, are in a better mood at work, and suffer fewer strain symptoms such as fatigue, burnout, anxiety and headaches".

3. Roles

A role is defined as, "a set of activities or behaviors that others expect an individual to perform" (Bellavia and Frone, 2005). During SARS, many healthcare workers faced intense dual-role conflict between their need to care for the health and welfare of their families, and the increased requirements of their commitment at work. Child and eldercare difficulties were rampant, as many staff and family members at daycare programs were afraid of contracting SARS, and assumed all healthcare workers who worked in hospitals were contagious. Nurses in the focus groups for the CAHCW study explained that the provision of child and eldercare services and resources as instrumental and emotional supports is essential to ensure staff can come to work during biological outbreaks and pandemics (Amaratunga et al. 2007).

Nurses who participated in the focus groups for the CAHCW study revealed a second perceived difference in the way male nurses were given recognition compared with female nurses. Many believed male nurses would be listened to by managers and physicians more readily. In these same focus groups, it was believed that male nurses would be allocated certain tasks based on the fact they were male. For example, they would be asked to do more heavy lifting. Men also faced dual-role conflicts being trained as caregivers but expected to perform other roles based on their gender (Amaratunga et al., 2006a).

Nilsson and Satterlund (2005) found that male nurses were directed toward specific tasks. In their study, the male nurses reported being asked to do 'technical' tasks, such as fixing

malfunctioning equipment, whereas female nurses would be assumed to be better at relational activities with patients, based on the gendered assumptions of care and emotionally-oriented communication. The vertical division of labour and gender-based assignment of tasks within frontline nursing presents differential risks for women during outbreaks if they have closer contact with patients. Nurses who worked on SARS teams or at the frontline in Emergency Departments were at greater risk and recognition of this fact should be incorporated to improve gender-based supports.

When multiple roles become overwhelming for both men and women nurses, negative stress can result and have detrimental effects on health. In the case of nurses on the frontlines during a biological outbreak, role conflict is exacerbated by perceptions of risk and difficult circumstances related to working extended hours, problems finding child care, the need to provide care for ill family members, or activity restrictions resulting from quarantine. In a predominantly female profession, the need to consider caregiving roles (social and emotional supports) and their potential conflict with professional obligations is essential (Amaratunga et al. 2007).

4. Relationships

Within any organization, vertical and horizontal relationships are critical determinants of organizational climate and culture (Bolman and Deal, 1991). Supervisor management has a tremendous impact on employee's feelings of work satisfaction, organizational commitment, as well as overall stress levels (Rhoades and Eisenberger, 2002). Within the gendered hierarchy of healthcare organizations, inter-professional relations tend to vary according to the demographic composition of the persons involved. In a study by Zelek and Phillips (2003), power differentials

in relationships were due to professional hierarchies, gender, and nurses' behaviour toward physicians that was dependent on the sex/gender of the physician, "... female nurses appear more comfortable approaching and communicating with female doctors, but are also more hostile toward female physicians' use of medical authority". Zelek and Phillips (2003) suggest that the gender hierarchy which predisposes male physicians to have more power over nurses is diminishing as a result of the feminization of medicine. The increase in the number of female physicians is influencing the organizational culture of healthcare professions.

Conclusions

Our healthcare services are based on fundamental assumptions that women care and women nurture while men manage resources and do other types of tasks. The very historical conceptualization of the profession is based on the gendered assumption of caring, caregiving, nurturing, and assisting someone else more qualified.

Consideration of the gendered context of the healthcare work environment can help increase capacity and improve preparedness planning, response and recovery. As a gendered profession some nurses felt ill-prepared and under-supported during their frontline response to SARS (Campbell, 2006). Widespread mistrust, structural hierarchies, pre-existing cultural attitudes, poor communication, lack of disaster training, scarce resources and significant dual-role conflicts plagued the frontline SARS nurses. These negative characteristics are important symptoms of a troubled healthcare system based on long-standing gendered divisions of labour and power, and professional stereotypes and hierarchies.

Gaps in the instrumental, occupational, communication, and social supports for healthcare workers were evident during the SARS outbreak in Canada. These supports would

have helped nurses to ameliorate the family and work-life balance issues pertaining to family caregiving. These are important considerations for emergency planning and policy planners within the healthcare system. Longstanding cultural assumptions within the healthcare system contribute to perpetual gendered hierarchies with respect to communications, access to training. and the provision of social supports. The present gaps not only influence the daily healthcare work environment, but also have implications for institutional and community response capacity. Gender-sensitive and family-friendly organizational supports are required if Canada's response capacity for pandemics and biological disaster events is to be improved.

The challenge facing policy and decision-makers is how best to redress these shortcomings and help frontline healthcare workers do their jobs. A thorough sex and gender-based analysis of conditions and prerequisites on the frontline will contribute to a culture of confident preparation. The challenges outlined in this chapter are not insurmountable. The adoption of gender-sensitive planning will go a long way to advance emergency preparedness in Canada. Decision-makers and policy makers would be well advised to listen reiteratively to the voices from the frontlines and to incorporate the risk perceptions into their planning processes to reduce power, attitudinal, value, role and relationship differentials. Doing so will provide a diverse suite of essential supports for healthcare workers and increase system capacity for pandemic response.

Based on the analysis that shows the lack of supports for various factors when viewed with a gender lens recommendations for policy changes can improve healthcare woker supports during biological outbreaks. Recommendations for gender-sensitive organizational supports to enhance response capacity include providing adequate, paid disaster training. This will give nurses the knowledge and help develop skills needed during outbreak events. Such training should be

provided at regular intervals for all front-line healthcare professionals, including part-time and casual staff. One of the main problems pointed out by Justice Campbell in his report was the difficulties encountered with human resources mobilization during the SARS outbreak. There needs to be adequate human resource mobilization and surge capacity planning to protect baseline health of front line staff that are vulnerable to chronic fatigue, isolation effects and burnout which in turn can lead to illness and withdrawal from the profession. Acknowledgement and recognition of the important role nurses play and their collective expertise, experience, and courage at the front-lines during biological event disasters is also necessary. This attitude and recognition of the value of nurses is important for nurse retention and job satisfaction. New policies should seek to create opportunities for nurse participation and inclusion in decision-making and planning throughout all phases of disaster management from prevention, preparedness, event, and recovery. Access to appropriate personal protective equipment (PPE) to fit people of different sizes, including adequate fitting sessions, drills and protocols to minimize exposure and occupational risk of infection during biological outbreaks should be addressed for both men and women. Policy should incorporate the awareness of occupational stress, emotional and psychosocial impacts healthcare workers face from conflicting roles between work and home responsibilities. Finally, provision of adequate support services to help healthcare providers balance work and family responsibilities such as child care, elder care, pet care, as well as adequate laundry services within healthcare centres (to enable nurses and personal care workers to leave work in clean clothing and foot wear) (Armstrong, 2006; Amaratunga et al., 2006a,b; Amaratunga et al., 2007).

In conclusion, it is evident that several consistent structural weaknesses exist at the frontlines in the Canadian healthcare system. During infectious disease outbreaks and quarantine

conditions, these weaknesses have the potential to undermine the confidence and performance of healthcare workers. Furthermore, the deficiency of instrumental, occupational, communication and social supports contributed directly to healthcare worker need for emotional supports, burnout, increased stress and high levels of fatigue during the 2003 SARS outbreak. New policies can be implemented to minimize the lack of supports. During the next pandemic it is imperative to have a ready, willing and prepared healthcare work force and surge capacity with the appropriate gender-based supports.

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[1] News media reports detailed the nurses' perceptions that their concerns over safety and personal protective equipment were not being considered. See: CTV News. 2003. T.O. nurses said they warned of new SARS cases, Tue. 27 May 2003. online: http://www.ctv.ca/servlet/ArticleNews/story/CTVNews/1054032451568_17/?hub=CTVNewsAt11.

[2] The responses were taken from, The SARS Commission Final Report. 2006. Spring of Fear. SARS and public health in Ontario. Chapter six: The Nurses' Survey. Question Q3.13 and Q3.8 online: http://www.sarscommission.ca/report/v3-pdf/Vol3Chp6.pdf. See pp. 993 and 991.