Understanding the Willingness of Australian Emergency Nurses to Respond to a Disaster

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Executive summary

Background

Disasters have always been part of the human experience and can cause impaired quality of life, altered health status and premature death (Iserson et al., 2008). A disaster is defined by Emergency Management Australia as ‘A serious disruption to community life which threatens or causes death or injury in that community and/or damage to property which is beyond the day-to-day capacity of the prescribed statutory authorities and which requires special mobilisation and organisation of resources other than those normally available to those authorities’ (1998, pp.32-3). Disasters challenge the ability of healthcare systems to respond to the needs of the communities they serve. Damage to infrastructure, lack of staff and increased demand caused by the disaster may affect the ability of the healthcare system to function effectively. Demands placed on the healthcare system will increase if these events are protracted.

As frontline responders to a disaster, absenteeism among emergency nurses will have a significant impact on the ability of the health system to effectively function at such a critical time. The factors that influence emergency nurses’ willingness to respond to a disaster are poorly understood. The literature does, however, describe various factors that affect health care workers’ willingness to respond to disasters. These include: family responsibility; personal safety; working conditions; professional duty; type of event; gender and knowledge and ability. However, the research approaches used to date for investigating ‘willingness’ to respond have relied mainly on survey methods that may not have provided an in-depth understanding of the enablers but also the barriers to disaster preparedness and therefore facilitate a disaster response in the workplace environment.

An understanding of emergency nurses’ willingness to go to work during disasters is essential for workforce planning and will augment future disaster policy and planning for Australian and international health care organisations.

Aim

The aim of this study is to answer the following questions:

1. To what extent are Australian emergency nurses prepared and willing to respond to a disaster?

2. How prepared are Australian emergency nurses to respond in a disaster in terms of the amount of education received, their knowledge of disaster responses and professional and home responsibilities?

3. How willing are Australian emergency nurses to respond to a disaster in terms of their professional and personal responsibilities?
4. What do Australian emergency nurses believe would improve their preparedness and willingness to respond to a disaster?

5. What effect does willingness have on the nursing workforce’s capacity to respond to disasters?

Ethics

This research was approved by the Flinders University Social and Behavioural Research Ethics Committee and by the human research ethics committees of all of the partner organisations and universities. The project was conducted at the following organisations:

- Royal Adelaide Hospital, South Australia
- Northern Health, Victoria
- Princess Alexandra Hospital, Queensland
- Calvary Health Care, Australian Capital Territory

Methods

Quantitative: Descriptive statistics were initially undertaken on the data set using PASW software. Data was analysed using STATA version 11.0. The characteristics of the study population were described using basic descriptive statistics. Means (± SD) were used for normally-distributed continuous data and median (range) for non-normally distributed data. Categorical data were described using percentages. Associations between willingness to participate in a disaster and the characteristics of the study population were assessed using chi-squared statistics when willingness to participate was assessed as a single variable; i.e. as either total willingness, or willingness for a particular type of event. When willingness to respond to one or more of the 5 different types of events was assessed simultaneously, a mixed effects logistic regression with a random intercept for the subject was used.

Qualitative: The transcripts were analysed to identify key themes (Burnard, 1991; Braun & Clarke, 2006). Initial themes were identified by a group of the project team by coding the focus group and interview transcripts, then comparing analysis and finalising thematic categories.

Another group of the project team analysed the transcripts with Leximancer 3 (2010) software, which identifies themes through a language content analysis. The coding was used as a validity check for the thematic analysis. Finally, the research team met in person for a day-long workshop to review the thematic coding, identifying issues that were not considered previously. Throughout these processes credibility was strengthened through triangulation techniques (Teddlie & Tashakkori, 2009).

Findings

This study of emergency nurses has confirmed previous findings that willingness of health care workers to work during a disaster is multidimensional; that is, affected by many competing
factors. Previous literature has identified that there are a number of factors that impact on willingness to respond to disasters. The factors that this research supports are: personal safety, family and pet safety, professional duty, previous experience, trust in the employer ability, psychological supports, and knowledge. Other factors explored in this study to provide an additional view included age, gender, and family responsibilities. This study also examined a number of less known factors such as volunteering, leadership in the workplace and collegiality.

Generally, there is a great willingness to work by emergency nurses during conventional events (natural disasters, building collapses, mass casualty events)—if they are able to get to work then they will. However a disaster that involves toxic waste, bio-hazards or an infectious disease would require further consideration of a number of risks at a personal and professional level.

Willingness to go to work or not during a disaster is not a straightforward linear process of decision-making. The decision-making is composed of a number of complex personal, work-related and professional factors that can change, depending on the context of the disaster and the emergency nurse’s responsibilities at that time. Willingness of an emergency nurse to go to work is influenced to a great extent by the type of disaster. The type of disaster will determine the degree of risk to self, family and community. Willingness can be influenced by increasing the feeling of preparedness to respond to a disaster and manage the risks at home, work and professionally. By increasing preparedness, the emergency nurses will then feel more confident in their own and their families’ safety, their work environment and their professional ability to respond, and will therefore be more willing to go to work, if they are able to get there.

There was not a consistent level of preparedness for a disaster event across Australian emergency nurses. The more experienced the emergency nurse the more likely that they had, to some degree considered their preparedness should a disaster event occur. The emergency nurse new to this practice environment was less likely to be prepared either at home, at work, or professionally. The preparedness of families to manage on their own during a period of environmental uncertainty is important, because the emergency nurse may be required to be at work or even be unable to get home.

**Recommendations**

This study has shown that there are a number of things that management can do to influence and increase the willingness of nurses to attend work. These are outlined in the recommendations below:

- Include disaster response information and discussion in the induction period for new emergency nursing staff to ensure that they know where the unit’s disaster plan is, what safety equipment is available and how to use it, and what is expected of them in their role. This should include their understanding of emergency management concepts of ‘command and control’, changes to triage and altered standards of care.

- The development of a training package that can be used by emergency nurses to explore, discuss and consider the ethical and legal issues related to altered standards of care at times of reduced human and material resources.
• A disaster plan which should include the following: consideration of effective communication strategies to staff, as well as the communication options available for staff to keep in contact with their families on a regular basis; options available for child, other dependents and pet care if staff are required to work longer hours or are not able to get home; as well as articulating the clear expectations of the senior clinical and administrative staff to ensure a presence in the health service during the peak periods of extra stress.

• Promote and support emergency nurses to undertake postgraduate education in disaster management.

• The development of a preparedness tool that emergency nurses can use to assess their own and their families’ preparedness at home should an event occur. Issues for consideration could include: carer needs for children, family members and pets; access to money and medication the emergency nurse may need to manage their own chronic medical conditions; consideration of obligations to the community for emergency nurses who also volunteer in emergency services; planning for emergency nurses when their spouse also has workplace and/or volunteer emergency responsibilities.

• It is also important to recognise the need for leadership of senior staff ‘on the floor’, as well as promoting a positive team culture to enhance the willingness of nurses to attend work and maintain their confidence under disaster conditions.

• More research is required in order to understand the subtleties of the factors in the workplace environment that can influence willingness to go to work during a disaster. This will help inform managers of the aspects that they can influence to increase the likelihood of staff attending work at a time of crisis.
Introduction

Background

Disaster response is a core emergency nursing responsibility. The disasters that emergency nurses may be called upon to respond to are hazardous. Terrorism, pandemics, and natural disasters threaten the safety of nurses and their families. Disasters that are bio-hazardous, such as those with infectious or radioactive contaminants, are particularly troublesome for nurses who may elect to not participate in the disaster response out of fear of contaminating their family and friends. International experience has shown that nurses can become victims of disasters, and that a fear of contaminating family and friends may prevent nurses from attending work or returning home during a disaster response (Cone & Cummings, 2006). Reports from real incidents, such as the experience of Canadian nurses in responding to the Severe Acute Respiratory Syndrome (SARS) outbreak (Ruderman et al., 2006) have raised concern about our understanding of nurses’ willingness to respond to disasters and the factors that may influence their response. An understanding of the enablers and barriers to disaster preparedness will not only aid in disaster response but will augment future disaster policy and planning for Australian and international health care organisations.

Significance

This proposed research is significant because the factors influencing emergency nurses’ willingness to respond to disasters are poorly understood. Research approaches used to date to investigate ‘willingness’ to respond have relied on survey methods that may not have provided valid and reliable findings. Many emergency care workers, including nurses, feel a strong obligation to respond, and survey research findings may be influenced by the ‘Hawthorne Effect’, whereby respondents overestimate their willingness to respond to a disaster (Grbich, 1999).

To date, little has been published in the international literature examining nurses’ willingness to respond to disasters, but more significantly, very little has been evident in the Australasian literature either. This study fills an important research gap because nurses provide much of the capability and capacity of our health services to respond to a disaster.

Many disaster plans rely on untested and poorly understood human resource planning. The response of emergency nurses is one of the most important elements of disaster response and it is important that we have an accurate assessment of the availability of emergency nurses to report for duty during a disaster and understand the strategies that could be adopted to bolster their willingness to respond.

This research contributes to disaster planning by providing insight into the factors that affect the willingness of Australian emergency nurses to respond to disasters. This research will facilitate disaster planning and policy development at national and health agency levels that will better support the personal needs of emergency nurses during a disaster response.
Literature review

Introduction

Disasters have always been part of the human experience and cause impaired quality of life, altered health status and premature death (Iserson et al., 2008). A disaster is defined by Emergency Management Australia as ‘A serious disruption to community life which threatens or causes death or injury in that community and/or damage to property which is beyond the day-to-day capacity of the prescribed statutory authorities and which requires special mobilisation and organisation of resources other than those normally available to those authorities’ (1998, pp.32-3). Disasters challenge the ability of healthcare systems to respond to the needs of the communities they serve. Damage to infrastructure, lack of staff and increased demand caused by the disaster may affect the ability of the healthcare system to function effectively. Demands placed on the healthcare system will increase if these events are protracted.

In Australia, natural disasters such as bushfires, floods and cyclones, occur regularly (Nicopolous & Hansen, 2009). Despite their frequency, very few of the natural disasters that have occurred in Australia have managed to overwhelm the disaster response and health care systems. The 2011 floods in Queensland and Victoria, as well as the cyclones in North Queensland that saw the evacuation of hospital and health services, provide a recent example of the effect disasters can have on health care service delivery. Catastrophic events that have occurred internationally, such as floods in Pakistan and earthquakes in Japan, New Zealand and Haiti, also serve to remind us of the challenges created by natural disasters. However, the experiences of healthcare systems in these countries present us with valuable learning opportunities.

The term healthcare worker (HCW) is used in the international literature to describe multiple health professions; including nurses, doctors and paramedics. The ability of a health system to respond effectively to a disaster is dependent on the people that work within that system. However, it is not realistic to expect that all staff will work during a disaster. There are many reasons why HCWs will not or cannot go to work during a disaster. These reasons can be broadly defined by two categories; willingness and ability. Willingness has been defined as ‘whether an individual would report for duty or respond positively to a request to report for duty’, while ability has been defined as ‘whether an individual would be available and have the necessary means to report for duty’ (Dimaggio, Markenson, Loo, & Redlener, 2005, p.332). Although an HCW may be able to work during a disaster, they may not be willing to work. The potential factors that decrease HCW willingness to work during a disaster may relate to the type of event, as well as fear and concern for family and self, whereas barriers to ability to report to work may include transportation issues, personal health and responsibilities relating to childcare, elder care and pet care (Qureshi et al., 2005). Therefore, while HCWs may be willing to go to work, they may not be able to. It is important to understand the distinction between these two terms. However, one of the purposes of this study was to explore the meaning of ‘willingness’ as it applies to the context of Australian emergency nurses reporting for work in disasters, rather than resorting to the use of a prescriptive definition.
The literature search

A comprehensive literature search was conducted for information published on the willingness of health care workers to work in disasters, focusing in particular on nurses, emergency departments and Australia. The search strategy involved searching a number of electronic databases of journals, including MEDLINE, CINAHL, ScienceDirect and BioMed Central. Search terms included ‘disaster’ and ‘nurses’ and ‘willingness’, with wildcards for similar terms. The search was regularly updated throughout the project period.

The literature describes various factors that affect HCWs’ willingness to respond to disasters. A review of the literature has identified seven broad themes. These include: family responsibility; personal safety; working conditions; professional duty; type of event; gender and knowledge and ability. Common factors of each of these themes are discussed in more detail below, with the most common themes presented first.

Family responsibility

Family responsibility is the leading theme to emerge from the literature. Family responsibility was expressed as having dependant family members (such as children and parents); pets, fear for health and safety of family and colleagues, and inability to communicate with loved ones while at work. In some cases family simply comes first (Ives et al., 2009).

The care of children, pets, and elders is of paramount importance to HCWs and creates a significant barrier to their willingness to work during a disaster (Cowden, Crane, Lezotte, Glover, & Nyquist, 2010; Damery et al., 2009; Garrett, Park, & Redlener, 2009; Gershon et al., 2010; Grimes & Mendias, 2010; Ives et al., 2009; Martin, 2011; Masterson, Steffen, Brin, Kordick, & Christos, 2009; O’Sullivan et al., 2009; Qureshi et al., 2005; Smith, Morgans, Qureshi, Burkle, & Archer, 2009). School closures may have a profound impact on HCW absenteeism creating difficulties for parents with young children (Dalton, Durrheim, & Conroy, 2008). Reduced willingness to work during a disaster has been identified among HCWs who have children, are married or are single parents (Balicer et al., 2010; Grimes & Mendias, 2010; Hope et al., 2010). In response to this, Dalton et al. (2008) discourages authorities organising alternative child care facilities as they may be resisted by parents and relatives due to concerns about the transmission of influenza if children are grouped in informal child care arrangements.

HCWs may also be reluctant to work during a disaster if they perceive that doing so may threaten the health and safety of their family (Basta, Edwards, & Schulte, 2009; Damery et al., 2009; Ehrenstein, Hanses, & Salzberger, 2006; Martin, 2011; Seale, Leask, Po, & MacIntyre, 2009) and includes concern for pets (Gershon et al., 2010). As a result, HCWs experience feelings of guilt and are torn between a duty of care and worry about inadvertently endangering family members (Koh et al., 2005; O’Sullivan et al., 2009). This fear also extends to partners, family and friends who may be concerned that the Hcw may infect them (Koh et al., 2005; Tippett et al., 2010; Watt et al., 2010). These findings raise suggestions that organisations should consider providing prophylaxis and vaccination to the family members of HCWs responding to pandemic or infectious disease (Gershon et al., 2010; Imai et al., 2010; Martin,
2011; Martinese, Keijzers, Grant, & Lind, 2009; O’Sullivan, et al., 2009). In some cases, this intervention may result in a higher level of willingness to work (Martin, 2011).

Another barrier to the willingness of HCWs to work during disasters is their perceived inability to communicate with family members while responding to the disaster (Gershon et al., 2010; O’Sullivan et al., 2009; Smith et al., 2009). Communication was raised as a particular concern during periods of quarantine or extended shifts (O’Sullivan et al., 2009; Smith et al., 2009). Communication with family members was a strong theme expressed by Australian paramedics in a study by Smith et al. (2009). They suggested that ways of combating this would be to create pre-determined communication channels and strategies for contacting loved ones.

HCWs not only hold fears of infecting co-workers (Smith et al., 2009) but also worry about the effect their absence from work will have on their colleagues (O’Sullivan et al., 2009; Smith et al., 2009).

**Personal safety**

Personal safety was a common theme that may influence HCWs’ response to a disaster and was often discussed concurrently with family safety (Garrett et al., 2009; Qureshi, et al., 2005). Fear and concern for family, colleagues and personal safety rated among the most frequently cited barriers to willingness among HCWs in many studies (Garrett et al., 2009; Imai et al., 2010; Qureshi et al., 2005; Seale et al., 2009; Smith et al., 2009). However, in many cases concern for family health and safety rated higher then personal safety when making decisions about responding to the disaster threat (Ives et al., 2009).

HCWs who fear for their own safety in terms of illness, injury or death may be reluctant to work during a disaster (Cowden et al., 2010; Damery et al., 2009; Irvin, Cindrich, Patterson, & Southall, 2008; Martin, 2011). In the case of a pandemic, many HCWs fear exposure to an illness will result in subsequently becoming ill themselves (Cone & Cummings, 2006; Cowden et al., 2010; Damery et al., 2009; Ehrenstein et al., 2006; Koh et al., 2005; Masterson et al., 2009; Seale et al., 2009). Willingness appears to be higher if the pathogen is known, preventable and treatable (Considine & Mitchell, 2008; Grimes & Mendias, 2010). The availability of appropriate treatment, prophylaxis and appropriate infection control measures may increase HCW likelihood to respond (Garrett et al., 2009; Grimes & Mendias, 2010; Irvin et al., 2008; Masterson, et al., 2009). In addition, exposure to unknown chemical agents also decreased emergency nurses’ willingness to respond to a chemical event (Considine & Mitchell, 2008).

**Working conditions**

*Working conditions* relates to the supports that are provided by the employer during and after the disaster: the trust that the HCW has in an employer, as well as job classification and role. This theme is closely linked to themes of *personal safety, support, information* and *knowledge*.

Incentives and interventions that employers could consider incorporating to increase HCW willingness to work include: preferential access to full preventative measures for staff and their families, alternative accommodation for staff to reduce the risk of transmission to their families, reimbursement for childcare, financial compensation, psychological support, extra leave, and
death and disability insurance (Cone & Cummings, 2006; Cowden et al., 2010; Garrett et al., 2009; Imai, et al., 2010; Irvin, et al., 2008; Martinese et al., 2009; Masterson et al., 2009). The provision of prophylaxis and treatment for self and family is a strong motivator in HCW willingness, as discussed earlier. A study by Garrett et al. (2009) reports that monetary or time-off compensation was less appreciated by HCWs than antiviral treatment or prophylaxis for staff and family. Furthermore, it states that ‘interventions that included employee’s immediate family in the strategy had a significantly greater impact than those that were intended for the employee alone’ (Garrett et al., 2009, p.S145). Similarly, in a study by Damery et al. (2009) vaccines for self and family was the most influential intervention to promote willingness.

Mistrust or a lack of confidence in the employer to maintain employee safety during a disaster correlates with a decreased willingness to respond (Seale et al., 2009; Smith et al., 2009; Tippett et al., 2010). Imai et al. (2010) further suggest that HCWs fear that the protection of HCW safety is not of paramount importance to national and local governments. Seale et al. (2009) suggest that lack of confidence in hospital preparedness may either be because the hospital has not made adequate plans or because staff is not aware of plans that have been made. HCWs fear that their efforts would not be rewarded in a relationship with their employer that is not reciprocated (Ives et al., 2009). These fears were expressed by HCWs in terms of them not receiving recognition for their work, the employer buying a cheaper alternative to personal protective equipment (PPE), and limitations in guidance and decision-making support (Ives et al., 2009). A lack of information, or conflicting information provided to HCWs, as was seen in the H1N1 pandemic (FitzGerald et al., 2010) also resulted in a level of mistrust in their employers (Ives, et al., 2009).

Also of note is the observation that clinical staff is more willing to work during a disaster than their non-clinical counterparts (Balicer et al., 2010; Cone & Cummings, 2006; Cowden et al., 2010). Decreased willingness to respond to a disaster also relates to the perceived importance of one’s role: perception that their role in the organisation is of low importance is associated with decreased willingness to respond (Balicer et al., 2010; Cowden et al., 2010; Hope et al., 2010). The conditions of work also play a factor in willingness; for example, nurses who work part-time were less likely to work during a disaster than their full-time colleagues (Dameray et al., 2009; Martinese et al., 2009). Damery et al. (2009) also found that nurses were reluctant to work in areas they were not familiar with, or in roles they had not received training for. Considine and Mitchell (2008) found that willingness to participate in chemical, biological, radiological (CBR) incidents was associated positively with postgraduate qualifications in emergency nursing. This implies that education may increase the nurses’ confidence as well as the perceived importance of their role.

**Professional duty**

The literature also contains evidence of a strong sense of professional duty among HCWs worldwide (Cowden, et al., 2010; Ehrenstein, et al., 2006; D. E. Grimes & E. P. Mendias, 2010; Ives, et al., 2009; Masterson, et al., 2009; Seale, et al., 2009). A sense of professionalism is one of the most important factors associated with HCW willingness to respond to a disaster (Cowden, et al., 2010). HCWs reported that concerns for personal and family safety may be
negated by a desire to fulfill professional responsibilities (Ehrenstein, et al., 2006; Seale, et al., 2009; Smith, et al., 2009). Masterson et al. (2009) found that sense of duty to their occupation was one of the most influential factors in the willingness of ED workers to respond. A strong sense of duty appears to be a significant motivating factor for HCWs to work during a disaster (Ives, et al., 2009). In their study, Ives et al. reported that participants felt they had a duty to work, and in not doing so they would be doing something morally wrong (2009). This feeling of obligation to respond to a disaster also extends to nursing students, who reported a moral/ethical/professional obligation to volunteer during a pandemic influenza (Yonge, Rosychuk, Bailey, Lake, & Marrie, 2010).

Some HCWs feel obligated to work during disasters, stating that they have no choice in the matter (Cowden, et al., 2010; Imai, et al., 2010). This raises questions related to the legal, ethical and moral issues that HCWs have to face when they consider working during a disaster. As yet the Australian federal government and the Australian nursing standardising organisation have not released any specific guidelines regarding nurses’ legal obligations during a disaster. The Australian Nursing and Midwifery Accreditation Council (ANMAC) however, has developed a set of guidelines outlining the responsibilities of nurses and midwives in the event of a declared national emergency including reference to legal parameters of practice (2008). There is however, no specific mention of what happens if a nurse chooses not to respond or leaves duty during a disaster. These are issues that need to be determined, especially after considering events in Toronto during the SARS pandemic (Ruderman, et al., 2006).

**Type of event**

The majority of the literature related to nurses’ response to disasters was focused on pandemic events (Balicer, Omer, Barnett, & Everly, 2006; Barnett et al., 2009; Butsashvili, Triner, Kamkamidze, Kajaia, & McNutt, 2007; Cowden, et al., 2010; Damery, et al., 2009; Draper et al., 2008; Ehrenstein, et al., 2006; Garrett, et al., 2009; Imai, et al., 2010; Irvin, et al., 2008; Koh, et al., 2005; Martinese, et al., 2009; O’Sullivan, et al., 2009; Seale, et al., 2009; Tippett, et al., 2010; Watt, et al., 2010; Yonge, et al., 2010). Other literature was specific to mass casualty events (Masterson, et al., 2009), CBR incidents (Considine & Mitchell, 2008), hurricane, catastrophic disasters and earthquakes.

HCW willingness to work during disasters may be dependent on the type of disaster. There is evidence in the literature that HCWs will not respond equally to all events (Cone & Cummings, 2006; Considine & Mitchell, 2008; Grimes & Mendias, 2010; Hope, et al., 2010; Masterson, et al., 2009; Qureshi, et al., 2005; Smith, et al., 2009). There appears to be a higher willingness among HCWs to work during ‘conventional events’ (natural disaster, building collapse, mass casualty event) than ‘non-conventional events’ (pandemic, chemical, biological or radiological) (Cone & Cummings, 2006; Masterson, et al., 2009; Qureshi, et al., 2005; Smith, et al., 2009). Smith et al. (2009) suggest that this may be because conventional disasters are more localised and visible, whereas non-conventional disasters are not, making it difficult to accurately assess risks. In the case of non conventional events, such as pandemics, HCWs were more likely to respond if the agent or illness was known, treatable, and preventable or if PPE was available (Considine & Mitchell, 2008; Grimes & Mendias, 2010; Smith, et al., 2009). Similarly in a study
by Qureshi et al. (2005), HCWs reported lower levels of willingness and ability to report to work for events that they perceived to be of a higher degree of risk to themselves or their families.

An Australian study by Considine and Mitchell (2008) explored the preparedness and perceptions of emergency nurses to respond to CBR events, and found that the majority of nurses are willing to participate in a CBR event and that this decision was not affected by the incident type. Considine and Mitchell (2008) suggest this may be due to the confidence that emergency nurses have in their CBR knowledge and skills. However, nurses were slightly less willing to participate in a radiological event than in a chemical or biological event (Considine & Mitchell, 2008). Conversely, another study conducted among emergency department (ED) personnel in the US finds that their HCWs will not respond equally to bioterrorist events, but with the HCWs more willing to work in a radiological event than in a biological one (Masterson, et al., 2009).

Recent pandemics such as H5N1 (Avian Influenza), H1N1 (Swine Influenza) and SARS, have created significant challenges for healthcare systems globally. Scenarios such as these may see patient attendance to typical urban EDs increase up to four times the usual patient presentations (Challen, 2009), exposing frontline responders to significant risk of infection and morbidity (Watt, et al., 2010). During the SARS epidemic (2002) HCWs accounted for nearly one third of all cases worldwide (Koh, et al., 2005; Watt, et al., 2010). HCWs who had experienced working in events where HCWs became ill, report an increase in stress levels related to the risk of exposure (Koh, et al., 2005). These stress levels may have some impact on HCWs’ decisions to work during a pandemic (Grimes & Mendias, 2010). Another barrier to willingness that is predominately a feature of pandemic events is the duration of the disaster, with the perception of risk increasing in proportion to the duration of the event, thereby decreasing HCW willingness to work (Basta, et al., 2009; Smith, et al., 2009).

Gender

Some studies found that men were more willing to respond during a disaster than women (Butsashvili, et al., 2007; Cowden, et al., 2010; Damery, et al., 2009; Grimes & Mendias, 2010; Imai, et al., 2010; Masterson, et al., 2009; Qureshi, et al., 2005). This is possibly due to the care-giving responsibilities of children and elders that often falls to the women (Butsashvili, et al., 2007) and links this theme to family responsibilities. It is important to note however that many males also have carer responsibilities. In their study, Grimes and Mendias (2010) found that gender was not a factor once they had included emergency experience into the equation, as a larger number of males had this type of experience, and this may have been the reason for their increased willingness. The effect of gender on willingness is important in the context of nursing, as 90.6% of Australian nurses are female (AIHW, 2010a, Table 5).
Knowledge

An HCW’s knowledge regarding their role in a disaster, as well as the availability or the ability to increase knowledge through education and training in disaster response also influences their willingness. HCWs require appropriate knowledge so that they can make informed decisions about working during disasters. Much of the literature examines the type of information HCWs need to function effectively during a disaster response. In response to a pandemic event, knowledge about disease pathogens, risk of infection, prevention and treatment may increase HCWs’ willingness to work (Grimes & Mendias, 2010; Irvin, et al., 2008) since a lack of confidence in one’s skills and knowledge has been cited as a reason for HCWs not to work during a disaster (Balicer, et al., 2006; Hope, et al., 2010). Considine and Mitchell (2008) found a positive association between willingness to participate in CBR incidents and postgraduate qualifications in emergency nursing. This association may be related to higher levels of knowledge related to disaster response attained during postgraduate studies.

HCWs consistently report inadequate and infrequent disaster education and training (Smith, et al., 2009) with a perceived adequate level of knowledge correlating to a higher willingness to respond (Watt, et al., 2010). Grimes and Mendias (2010) found nurses’ knowledge scores related to bioterrorism were not exemplary, and consequently highlighted the need for extensive education programs for healthcare personnel. Considine and Mitchell (2008) showed that the last disaster training in a cohort of Victorian emergency nurses was 19.2 months prior to the study. Similarly, Duong (2009) and Hammad, Arbon, & Gebbie (2011) raise issues concerning the frequency of disaster training among South Australian emergency nurses.

Ability

Although HCWs may be willing to respond to a disaster, they might not be able. Just as an HCW may be able to work during a disaster but may not be willing. Qureshi et al. (2005) proposes that there is a distinct difference between the concepts of ‘willingness’ and ‘ability’: ‘Ability refers to the capability of an individual to report to work, whereas willingness refers to a personal decision to report to work’ (p.379). An example of this was highlighted in a study by O’Sullivan et al. (2009) who reported on Canadian nurses that were unable to get to work or return home due to deteriorating road conditions. This suggests that although they may be willing to respond, their ability was hampered. The concepts of ability and willingness are raised in other studies, which suggest that the lines between the two are blurred (Damery, et al., 2009; Ives, et al., 2009). Ives et al. (2009) provide the example of some parents viewing childcare as a choice and others viewing it as a necessity.

Ability to work may be affected by lack of transportation or disruption to public transport, ill health of the HCW, or having to care for a family member who is ill, and even conflicting emergency response obligations (Cone & Cummings, 2006; FitzGerald, et al., 2010; Garrett, et al., 2009; Ives, et al., 2009; Martin, 2011). During the H1N1 pandemic in Australia, FitzGerald et al. (2010) report that more than one third of the participants in their study became ill with an influenza-like illness. According to this study, the mean number of days absent from work among the participants was 3.7 days (FitzGerald, et al., 2010).
The Australian context

Much of the literature about HCW willingness to work during disasters has been written from an international perspective. The experiences of international healthcare systems and the examples provided by this literature provide valuable knowledge that may help us to guide healthcare systems in our own policy and workforce management. However, these studies may be of limited use to Australian healthcare systems, which may be guided by differences related to workforce demographics, culture, policy and practice.

There are few studies that have addressed the willingness of HCWs to work during disasters in the Australian context. The majority of these studies focus on the willingness of HCWs to work during pandemic and CBR events (Considine & Mitchell, 2008; Hope, et al., 2010 ; Martinese, et al., 2009; Smith, Burkle, Woodd, Jensen, & Archer, 2010; Smith, et al., 2009). Hope et al. (2010 ) found that the willingness of frontline HCWs (which included nurses, community health staff, mental health staff and pathology staff working in a regional health service) to work during a public health emergency was affected by the type of event, confidence in skills, a lack of family preparedness and a belief that their role may not be important to the health response. Martinese et al. (2009) discuss four predictors for HCW absenteeism in a pandemic: employment status (part-time versus full-time); pregnancy in the family; being required to work in the emergency department (ED); working with acute medical patients. Smith et al.’s (2009) study exploring the willingness of paramedics to work during a public health emergency, found that willingness was affected by two main factors; perceived risk and primary concerns. Perceived risk was associated with the type of disaster and perceived threat to safety of self, colleagues and family; while primary concerns included; health and safety, communication issues, accurate information and training and education.

Emergency nurses

Although the willingness of HCWs to work during disasters has been extensively researched, there is very little research that specifically explores emergency nurses’ willingness to work in disasters. Emergency nurses are frontline responders and they play an essential role in the hospital response to a disaster (Hammad, et al., 2011). The practice of this nursing specialty during disasters includes triage, patient care and treatment, as well as liaising with other departments and providers. High rates of absenteeism among this group will have a significant impact on the ability of the healthcare system to effectively respond to a disaster. Therefore, an understanding of barriers to emergency nurses’ willingness to work in disasters is essential to prevent high levels of absenteeism.

The ED is the frontline of the hospital response to a disaster (FitzGerald, et al., 2010). The ED is the first point of contact for all patients requiring hospital care under normal conditions, and it is a key interface between the community and acute care during a disaster. The ED has primary responsibility for patient assessment, triage, treatment and whether treatment indicates patients be transferred to operating theatres or intensive care, or referral to primary care or other health services. It is often the first point of contact in the hospital for relatives and friends of disaster victims and it plays a major role in liaison with other service providers such as the ambulance service. Staff within EDs characteristically work with the pressures of overcrowding, access
block and ambulance ramping amid growing demand for emergency health services (FitzGerald, et al., 2010). The effect of a disaster on the functioning of EDs will be significant in terms of increased patient numbers and/or severity of illness and injury.

In the only published study on disaster preparedness of Australian emergency nurses specifically, Considine and Mitchell (2008) explored issues related to the disaster preparedness of Australian emergency nurses. The major finding to emerge from the study was that the majority of emergency nurses were willing to work during a CBR event and that their willingness to participate was not affected by the type of incident, the physical limitations of PPE, or their perceptions of training adequacy, demographic, employment or social characteristics (Considine & Mitchell, 2008). Despite a prediction of a 38% absentee rate among their cohort (which included emergency nurses) this was echoed by Martinese et al. (2009) who found that willingness was not affected by age, presence of dependants or gender.

Even with the willingness to work during chemical, biological and radiological incidents, the capacity to work in PPE significantly affected the ability of participants to work in a disaster (Considine & Mitchell, 2008). One third of participants reported a physical limitation to donning level C PPE. Specific limitations included poor suit fit (n=7), poor mask fit (n=7), claustrophobia (n=5), pregnancy (n=1), glasses or beard that prevents adequate mask seal (n=3), and respiratory or cardiovascular illness (n=3). Interestingly, 68% of participants who were unable to don PPE still reported being willing to participate in CBR incidents (Considine & Mitchell, 2008).

**Conclusion**

The literature reveals that all HCWs, including nurses, were most commonly affected by family responsibility. This is most closely linked to child, elder and pet care arrangements and fear for family safety. Concern for personal safety was also a big factor affecting HCW willingness to work during disasters. The study becomes significant in light of the fact that there are few Australian studies that explore the willingness of HCWs to work during disasters. Our research aims to explore factors that affect emergency nurses’ working during disasters. Whereas much of the literature to date has focused on pandemic response, this study aims to explore the willingness of emergency nurses in Australia to respond to a range of disasters. This research will assist with workforce planning for managers in identifying the staffing risks they may face and help to prepare contingencies.
Methodology

Aims and objectives

To answer the following questions:

1. **To what extent are Australian emergency nurses prepared and willing to respond to a disaster?**

2. **How prepared are Australian emergency nurses to respond in a disaster in terms of the amount of education received, their knowledge of disaster responses and their professional and home responsibilities?**

3. **How willing are Australian emergency nurses to respond to a disaster in terms of their professional and personal responsibilities?**

4. **What do Australian emergency nurses believe would improve their preparedness and willingness to respond to a disaster?**

5. **What effect does willingness have on the nursing workforce's capacity to respond to disasters?**

Design

This study used a mixed-method, multi-phased exploratory, descriptive approach. Data was collected in three interconnected phases using a combination of survey, focus group and interview methods. Preliminary findings from each phase were used to inform questions in the following phases, using an explanatory sequential design, in which the second, qualitative phase explains the initial results in more depth (Creswell & Plano Clark, 2011).

Population and sample

The participating organisations played a significant role in facilitating access to participants, advertising the project and in supporting data collection in all phases. In 2009, the College of Emergency Nursing Australasia had approximately 1160 members (College of Emergency Nursing Australasia Ltd, 2010), with current email addresses for 70-75%, approximately 800 (A. Lewis, personal communication, 1 April 2010). The Australian College of Emergency Nursing had 520 members (E. Cloughessy, personal communication, 28 January 2010).

‘Nurse’ is defined as all persons who are either registered or enrolled with a state or territory nursing and midwifery board, and therefore includes both ‘registered’ and ‘enrolled’ nurses (AIHW, 2009, p.1). The number of nurses in Australia in 2007 was estimated at 352,583 (AIHW, 2010a, Figure 1). Under the Australian Institute of Health and Welfare (AIHW) categories, emergency nurses come under the area, ‘critical care/ emergency’ (AIHW, 2009, p.54). As this is the major national survey of the nursing workforce, there is no aggregated data on the
number of emergency nurses alone. The total number of employed nurses in 2008 was 272,741, with 50,251 being critical care/emergency nurses (18.4%) (AIHW, 2010a, Table 32).

**Research ethics approvals**

The research process protected the privacy of participants and maintained the confidential status of data acquired. All data was de-identified and stored in a password-protected computer accessible only to members of the research team according to NHMRC guidelines. Hardcopy of data is stored in a locked filing cabinet accessible only by the researchers.

Researchers monitored for any signs of anxiety or distress among the participants during the interview or focus groups, and referred these participants to their health services employee assistance program for counselling.

The project was approved by the following ethics committees:

- Flinders University Social and Behavioural Research Ethics Committee
- Griffith University Human Research Ethics Committee
- Royal Adelaide Hospital Research Ethics Committee, SA Health, Government of South Australia
- The Northern Health Human Research Ethics Committee
- Princess Alexandra Hospital Human Research Ethics Committee, Queensland Health, Queensland Government
- Calvary Health Care ACT Human Research Ethics Committee.

**Data collection**

Data was collected in two interconnected phases using a combination of survey, interview and focus group methods.

**Pilot survey (Feb – Mar 2010)**

The survey used in this study was purpose-developed by the research team, as no pre-existing validated tool was found. Based on findings from a literature review, the draft survey was reviewed by a panel of emergency care key stakeholders to establish content and face validity. The survey was then piloted with 21 emergency nurses with these nurses subsequently excluded from the final study. Contact and recruitment for the pilot survey occurred through 2 of the participating sites, Northern Health in Victoria and Calvary Health Care in the ACT. Pilot participants were asked to comment on the ease of completion, format, content and time taken to complete the survey. Results were summarised, discussed by the research team and adapted accordingly.
Phase 1: Online survey (March – May 2010)

A survey is a suitable data collection tool for this study, as surveys are easily distributed, require minimal assistance from others to complete, and obviate researcher bias. As self-administered surveys have the associated disadvantages of high rejection rates and poor response rates, the questionnaire was brief, taking less than 10 minutes to complete and was offered in an online format.

The final version of the survey was distributed at a population level to emergency nurses across Australia via the College of Emergency Nursing Australasia (CENA) and Australian College of Emergency Nurses (ACEN) membership. An introduction announcing this research project was made available through the use of CENA and ACEN websites, emails to their members and through the CENA newsletter. The survey was available online using Remark Web Survey Version 4 (2008) software.

Researchers at the participating sites also publicised the online survey through local email, intranet and staff noticeboards. A paper version of the survey was produced and distributed to staff at two sites. Surveys were anonymous and consent assumed when the survey was returned—either online or in sealed collection boxes within the hospital departments. The final survey numbers were N=451. Demographic data related to participant characteristics (e.g. age, gender, years of experience, and nursing classification level) were collected as a component of the survey.

Phase 2: Focus groups (July – Aug 2010)

The results of the survey were used to inform the qualitative phase of the project. Data was analysed with PASW Version 18.0 (2009) software. Stem questions developed from the survey data were used to initiate and prompt discussion for the focus groups. A standard format was developed for focus groups and for the interviews using schedules to ensure consistency across the venues.

Participants were recruited directly by the researchers located at the participating sites at each individual emergency service. Information about the research and focus groups was distributed through internal mail, intranet and staff notice boards. Consent was written and informed in accordance with research ethics requirements.

The aim was for a focus group of 10 nurses in each participating organisation (40 overall). The focus groups were held at times convenient to staff in the emergency departments, which meant that two sites held two smaller groups, while two sites held one large group. The final numbers consisted of 41 participants: Royal Adelaide Hospital (SA)—9; Northern Health (Vic)—11; Princess Alexandra Hospital (Qld)—13; Calvary Health Care (ACT)—8.

The focus groups were facilitated by members of the research team at three sites. At Northern Health and the Princess Alexandra Hospital, three of the researchers are located in the source organisations, but did not hold direct line management responsibility to participants. The two researchers who conducted the focus group at the Royal Adelaide Hospital had no association with the organisation. Therefore, there was no conflict of interest. In the one participating
organisation where the researcher did have a line manager role, an independent researcher undertook the focus groups and interviews, to prevent any potential of conflict of interest or perceptions of coercion.


The results of the survey were used to inform in-depth interviews and focus groups with key informants at participating industry settings. Stem questions were used to initiate and prompt discussion. Each interview and focus group was digitally recorded and transcribed verbatim, and the accuracy and consistency of transcription was reviewed.

In-depth interviews were conducted after the focus groups were completed and analysis of focus group data was finished. Participants were recruited for interviews from the focus groups. After the focus group session, participants in the focus groups who were willing to be interviewed by the researchers were asked to complete a consent form indicating their consent to be contacted by the researcher for an interview. In-depth interviews of approximately one hour were conducted with 13 nurses in each of the participating organisations, until it was agreed that thematic saturation had been reached.

**Data analysis – Quantitative data**

Descriptive statistics were initially undertaken on the data set using PASW software. Data were analysed using STATA version 11.1 (2009) software. The characteristics of the study population were described using basic descriptive statistics. Means (± SD) were used for normally distributed continuous data and median (range) for non-normally distributed data. Categorical data were described using percentages. Associations between willingness to participate in a disaster and characteristics of the study population were assessed using chi-squared statistics, when willingness to participate was assessed as a single variable i.e. as either total willingness, or willingness for a particular type of event. When willingness to respond to one or more of the five different types of events was assessed simultaneously, a mixed effects logistic regression with a random intercept for the subject was used. This allows for the non-independent nature of the data i.e. repeated measures of willingness on the same individual, to be accounted for. For each of these models, the effect of each variable on willingness was expressed as an odds ratio.

**Data analysis – Qualitative data**

The transcripts were analysed to identify key themes. A thematic analysis, a widely used method in qualitative research (Braun & Clarke, 2006), provides a systematic recording of themes and issues found in interview data (Burnard, 1991). Initial themes were identified by a group of the project team by coding focus group and interview transcripts, comparing analysis and finalising thematic categories.

Another group of the project team analysed the transcripts with Leximancer 3 (2010) software, which identifies themes through a language content analysis. Computer programs are aids to manage qualitative data, with the final interpretative analysis resting with the researchers.
(Grbirch, 1999). With this in mind, the *Leximancer* 3 coding was used as a validity check for the more traditional thematic analysis. Finally, the research team met in person for a day-long workshop and reviewed the thematic coding, identifying any issues that had not been considered previously. Throughout these processes, credibility was strengthened through triangulation techniques (Teddlie & Tashakkori, 2009).
Results

Description of participants

There were 451 participants in this study, which is a response rate of approximately 34.2% of nurses from both professional colleges.

As described earlier, it was not possible to estimate the population of emergency nurses in Australia with great accuracy. The number of nurses (including registered and enrolled nurses) in Australia in 2007 was estimated at 352,583 (AIHW, 2010a, Figure 1). Within the Australian Institute of Health and Welfare (AIHW) categories, emergency nurses come under the area ‘critical care/ emergency’ (AIHW, 2009, p.54). As this is the major national survey of the nursing workforce, there is no aggregated data on the number of emergency nurses alone. Out of the total number (272,741) of employed nurses in 2008, 50,251 were critical care/emergency nurses (i.e.18.4%) (AIHW, 2010a, Table 32).

Age

The age of nurses in this study ranged from 21 to 64 years. The mean age of participants was 39.75 years. The largest age group, with 33.5% was 40-49 years (n=148), followed by 30.8% at 30-39 years (n=136) and the smallest age group of 2% was 60-69 years (n=9). This is comparable with AIHW data, where the average age of critical care/ emergency nurses was 40.4 years, compared to 44.1 years for employed nurses overall (AIHW, 2010a, Table 32).

Gender

Of the total number, 16% (n=71) of participants were male and 84% (n=373) were female. This is slightly higher than AIHW figures that show 12.9% of employed critical care/emergency nurses are male (AIHW, 2010a, Table 32). Australia-wide, the number of males employed in nursing is 9.4% (AIHW, 2010a, Table 5).

Ethnic identity

The majority of participants 92.2% (n=416) participants spoke English at home and identified themselves as Australian only (74.4%, n=328). Less than one-fifth (14.1%, n=62) identified as both Australian and other ethnic background and 11.6% as other (n=51). The highest other ethnic identities were British (9%), European (6%) and New Zealander (4%). This is consistent with national data reporting the country where employed nurses first qualified, which lists 85.1% in Australia, then UK/Ireland (6.4%), New Zealand (2.3%) and other countries (6.2%) (AIHW, 2010a, Table 7). Three nurses identified as Aboriginal and/or Torres Strait Islander in the survey, a total of 0.7%, which is comparable with the 1598 or 0.6% of Indigenous employed nurses in Australia (AIHW, 2010a, Table 6).
Domestic living arrangements

When we asked nurses ‘who do you live with?’ 34% (n=152) reported that they lived with a partner/spouse, 35.8% (n=160) partner/spouse and children, and 3.5% (n=16) were sole parents with children. For other types of families, nurses respectively 3.8% (n=17) reported living with older family members (65 and over or ATSI 45 and over) and 2.5% (n=11) with younger family members (under 65 and over or ATSI under 45). Thus, a total of 79.6% (n=356) of the emergency nurses in the survey lived with family members. In 2006-07, 87% of the Australian population living in private dwellings were in family households, with two or more people aged at least 15, related by blood, marriage (including de facto), adoption, step or fostering (ABS, 2008a, pp.1-2).

The second major group was ‘live alone’ with 15% (n=67). This is comparable to the general Australian population (in private dwellings) of which 10% of reported living alone in 2006-07 (ABS, 2008a, p.2). The remainder, 5.4% (n=24), lived with housemates/ friends, slightly higher than the 3% in group households in national figures (ABS, 2008a, p.2).

Children

For the number of dependent children, 61.6% (n=277) had none, 16% (n=72) participants had 1 child and 15.3% (n=69) had 2 children, while 6.4% (n=29) had 3 children and 0.7% (n=3) had 4. It is not possible to make an accurate comparison with overall labour force participation, as these rates also apply to emergency nurses who are fathers. However, it is interesting to note that the work participation of mothers varies according to the age of their youngest child. In 2006 the rate for mothers with children aged 0-4 years was lower (52%) than those whose youngest child was aged 5-9 years (71%) and 10-14 years (77%) (ABS, 2008c). This represents a slightly different trend to the participants in this survey (Figure 1).

![Figure 1: The ages of participants’ children](image-url)
Person they live with has a disaster responsibility

The majority of nurses at 73.4% (n=267) answered ‘no’ to the question whether the person/s they live with were required to respond to a disaster. A total of 26.7% (n=97) of participants answered ‘yes’, with 22.3% (n=81) the person worked as a paid worker, 3% (n=11) as a volunteer and 1.4% (n=5) as a paid worker and volunteer.

When we asked to describe this person’s paid work/ volunteer emergency activities, there were 94 responses. The type of disaster response is classified below (Figure 2).

Figure 2: Person’s disaster response

Volunteer emergency activities

There were 9.8% (n=43) of participants involved in volunteer emergency activities in their community. This compares to 1.1% of the overall Australian population aged 18 years and over, who volunteered for emergency service organisations, while 3.1% volunteered for health organisations, which includes first aid and other emergency health services (ABS, 2007, p.7, 40). The relevance of this sector to the nursing field is likely to account for this over-representation.

The volunteer activities include civilian defence organisations such as ambulance officers, CFS, SES etc. Disaster teams include AUSMAT, VMAT, State Disaster Response Team members etc. (responses at state and local level).
Caregiver responsibilities

For this question, 18.4% (n=18) of responders reported that they are the primary caregiver for any other persons with special care needs such as illness, infirmity and disabilities.¹. In 2003, only 2.4% (474 600) of people living in households were identified as primary carers who provided the majority of informal help to persons who needed help because of disability or age (ABS, 2004, p.3).

Emergency plans

Within all participants, 72.9% (n=317) reported that they didn’t have an emergency plan for themselves and their families; while 27.1% (n=118) had a plan. This compares to an average of 42.7% of households who had an emergency plan in areas studied with a perceived risk of bushfire (ABS, 2008b), which would be expected to be higher.

Length of employment as an emergency nurse

Approximately one-third (30.1%, n=135) of the participants reported working as an emergency nurse between 1 and 5 years. This was followed by 27.7% (n=124) who worked between 5 and 10 years. The mean length of employment was 11.18 years (Figure 3).

![Figure 3: Length of employment](image)

¹ This question was not analysed further, due to the low number of results.
Current classification

More than half the participants identified themselves as Registered Nurses (RNs) as illustrated below (Figure 4). There were 32.2% (n=145) RN Division 1, 18% (n=81) RN Level 2/ Clinical Nurses and 19.8% (n=89) Clinical Nurse Specialists/ Clinical Nurse Consultants.

![Current classification level](image)

Figure 4: Current classification level

Highest level of qualification

The largest group of 33.3% (n=148) had postgraduate certificates or diplomas as the highest level of qualification, with 23.6% (n=105) with a bachelor degree and 20.2% (n=90) with masters degree. The smallest group was a PhD (0.9%, n=4), followed by 4.3% (n=19) with a diploma.

Other relevant qualifications

Of the emergency nurses in this survey, 48.2% (n=217) had obtained disaster-related qualifications, while 85.3% (n=384) attended courses on preparing for a disaster. Out of a total number of 332 qualifications, the highest number was Major Incident Medical Management and Support Course (MIMMS) at 36% (n=120), then Disaster Management at 20% (n=67) as illustrated (Figure 5).
Figure 5: Disaster-related qualifications

Course attendance

Out of a total of 779 qualifications, the highest numbers were ‘hospital based’ – 31% (n=242), MIMMS – 19% (n=151) and Emergo Train – 14% (n=109), as seen below (Figure 6). Hospital-based training was also the most common form of disaster related education found in a South Australian study of emergency nurses (Duong, 2009).

Figure 6: Disaster related courses
Working hours

The ABS classifies people employed full-time as those who usually work 35 hours or more during a week and part-time at less than 35 hours (Australian Bureau of Statistics, 2010a, p.1). In the survey, 56.8% (n=195) of participants worked part-time (1-69 hrs/ fortnight) (n=256) and 43.2% worked full-time (70hrs+). For critical care/emergency nurses in 2008, 41% worked part-time (less than 70 hours/fortnight) (AIHW, 2010a, Table 32), compared to 49.8% of employed nurses overall (AIHW, 2010a, Table 8).

As a large proportion of the nursing workforce is part-time, in our analysis this was divided further into groupings of low part-time, working 1-34 hours/fortnight – 12.9% (n=58), part-time, working 35-69 hours/fortnight – 43.9% (n=198) and full-time, working ≥70 hours/fortnight – 43.2% (n=195). The mean was 29.9 hours per week, ranging from 2-100 hrs/ fortnight. The average hours worked by critical care/emergency nurses in 2008 was 34.9 hours/week, compared to an average of 33.4 for employed clinical nurses (AIHW, 2010a, Table 32).

Hospital size and type

Hospital sizes were classified according to categories from the AIHW (2010c). The 3 most common classifications of hospital sizes were 42.6% (n=192) with 201-500 beds; 18.4% (n=83) with more than 500 beds; 16.4% (n=74) with 101-200 beds. Smaller hospitals were less represented in this survey, with 7.5% (n=34) nurses from hospitals with 51-100 beds, 4.9% (n=22) from hospitals with 11-50 beds and 0.2% (n=1) with less than 11 beds.

For this survey, 96.1% (n=424) of emergency nurses worked in public hospitals, compared to 3.9% (n=17) in private. This is an under-representation of nurses in private hospitals, with national figures listing 77.4% of nurses employed in public hospitals and 22.6% in private hospitals (AIHW, 2010b, Table 1). This could be due in part to the lower number of emergency departments in private sector hospitals\(^2\).

\(^2\) In 2008-09 there were 39 private hospitals in Australia with accident and emergency services (ABS, 2010b, p.18), compared to 183 public hospitals with emergency departments (AIHW, 2010c, p.65).
Work setting localities

In the following graph the number of emergency nurses in each state is roughly compared to the total percentage of nurses in each state (AIHW, 2010a, Table 22) our graph (Figure 7).

Figure 7: Nurses’ distribution by states

South Australia and the Australian Capital Territory are over-represented, probably because researchers on the project team in these states (as well as Victoria and Queensland) promoted the survey to their staff.

In regard to different localities, 46.6% (n=203) of these emergency nurses worked in major tertiary referral hospitals, 22.5% in urban district hospitals (n=98), 18.1% (n=79) in regional centre hospitals and 12.8% (n=56) in rural hospitals. The AIHW nursing workforce statistics classify nurses in geographic regions (AIHW, 2010b, Table 2). Comparison is possible by combining groups, resulting in the following graph (Figure 8):

Figure 8: Nurses’ distribution by locality

The major difference seems to relate from a disparity in the categories of ‘regional’ and ‘rural’ in the survey, compared to the AIHW categories of ‘inner regional’, ‘outer regional’ and ‘remote’ and ‘very remote’. It is worth noting, however, that the number of nurses working in ‘major tertiary referral’ and ‘urban district’ hospitals—thus, ‘in cities’—is very close to national figures.
Focus groups and interview populations

Demographic details of the nurses who participated in the focus groups (as detailed in the Population and sample section), were collected in a brief survey (n=41). The majority of interview participants were selected as a follow-up from these groups, so no further details were taken. They were analysed with PASW Statistics (SPSS) 18.0 (2009). Only minor differences were found in the details of these participants, compared to those of the online survey, as listed in below (Figure 9).

Other factors were also similar, with the same most common groups in the focus group and online survey, including living status and participant’s highest level of qualification. There were differences in a number of factors, making the focus groups more junior overall than the survey participants. Length of employment – 46.3% (n=19) of focus group participants had worked 1-5 years, compared to 29.9% (n=135) of survey participants. The classification level of focus group participants was also lower overall, with 41.5% (n=17) of focus group participants RN/Div 1, compared to 32.2% (n=145) of survey participants.

Figure 9: Focus group and survey populations
Quantitative data analysis

Which disaster types have the highest level of willingness and unwillingness for emergency nurses?

For all disaster types examined, the majority of emergency nurses reported being willing to respond. There was definite variation in emergency nurses’ reported willingness by disaster type (Table 1). Transport and natural disasters elicited the highest responses indicating willingness to respond; however, reported willingness decreased for terrorist attacks and chemical, biological or radiological incidents.

Table 1 Willingness by disaster type

<table>
<thead>
<tr>
<th>Disaster Type</th>
<th>Willing n</th>
<th>Unwilling n</th>
</tr>
</thead>
<tbody>
<tr>
<td>Transport (n=435)</td>
<td>425 (97.7%)</td>
<td>10 (2.3%)</td>
</tr>
<tr>
<td>Natural disaster (n=428)</td>
<td>415 (97.0%)</td>
<td>13 (3.0%)</td>
</tr>
<tr>
<td>Pandemic (n=406)</td>
<td>367 (90.4%)</td>
<td>39 (9.6%)</td>
</tr>
<tr>
<td>Terrorist attack (n=409)</td>
<td>366 (89.5%)</td>
<td>43 (10.5%)</td>
</tr>
<tr>
<td>CBR (n=395)</td>
<td>341 (86.3%)</td>
<td>54 9 (13.7%)</td>
</tr>
</tbody>
</table>

Mixed effects logistic regression analysis that accounted for the correlation of responses showed that the odds of emergency nurses being willing to attend work in transport/natural disasters was 23.9 times higher than the odds of being willing to attend work in terrorist/pandemic/CBR events (95% CI: 10.85 – 52.8, p <0.001).

Is there a relationship between family preparedness and willingness to work in different types of disasters?

Family preparedness for a disaster was reported by 334 participants: 16% (n=54) of participants reported having no family disaster plan. Participants who reported family disaster preparedness were more willing to respond across all disaster types examined (Table 2). Again, reports of willingness were highest for transport and natural disasters. Logistic regression analysis showed that the odds of emergency nurses who state that they have more prepared families being willing to attend work in transport/natural disasters was 25.6 times higher than the odds of being willing to attend work in terrorist, pandemic, CBR events (95% CI: 9.0 – 72.8, p <0.001).
Table 2: The effect of family preparedness on willingness to respond to different types of disasters

<table>
<thead>
<tr>
<th></th>
<th>Unprepared</th>
<th>Prepared</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Willing n (%)</td>
<td>Unwilling n (%)</td>
</tr>
<tr>
<td>Transport</td>
<td>44 (11.9%)</td>
<td>5 (1.3%)</td>
</tr>
<tr>
<td>(n=376)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Natural disaster</td>
<td>40 (10.8%)</td>
<td>6 (1.6%)</td>
</tr>
<tr>
<td>(n=370)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pandemic</td>
<td>30 (8.5%)</td>
<td>12 (3.4%)</td>
</tr>
<tr>
<td>(n=352)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Terrorist attack</td>
<td>36 (10.0%)</td>
<td>10 (2.8%)</td>
</tr>
<tr>
<td>(n=359)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CBR</td>
<td>28 (29.8%)</td>
<td>14 (29.8%)</td>
</tr>
<tr>
<td>(n=94)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

What improvements did emergency nurses state would increase their willingness to respond to disasters?

A number of nurses stated they wanted improvements to be in place in order to increase their willingness to attend work in a disaster, detailed as follows (Figure 10): 6% (n=39) other, 16% (n=101) working conditions, 16% (n=102) care provisions, 25% (n=161) PPE, 37% (n=235) education/training courses.

Figure 10: Types of improvements wanted
Is there a relationship between age groups and emergency nurses’ willingness to work in the ED during a disaster?

The majority of the respondents were aged 30 to 49. There were significant differences in reported willingness to respond to a disaster and age. In all age groups, more respondents were willing to respond to a disaster than were unwilling (Table 3). The age groups with the highest number of willing respondents were 20-29 and 50-59 and the age group with the lowest number of willing respondents was 60-69 (p = 0.001).

Table 3: The effect of age and willingness to respond to different types of disasters

<table>
<thead>
<tr>
<th>Age Group</th>
<th>Willing (N=1960 responses)</th>
<th>Unwilling (N=185 responses)</th>
</tr>
</thead>
<tbody>
<tr>
<td>20-29 (n = 395)</td>
<td>370 (93.7%)</td>
<td>25 (6.3%)</td>
</tr>
<tr>
<td>30-39 (n = 660)</td>
<td>590 (89.4%)</td>
<td>70 (10.6%)</td>
</tr>
<tr>
<td>40-49 (n = 720)</td>
<td>660 (91.7%)</td>
<td>60 (8.3%)</td>
</tr>
<tr>
<td>50-59 (n = 325)</td>
<td>305 (93.9%)</td>
<td>20 (6.1%)</td>
</tr>
<tr>
<td>60-69 (n = 45)</td>
<td>35 (77.8%)</td>
<td>10 (22.2%)</td>
</tr>
</tbody>
</table>

3 It should be noted that while the number of participants in the survey was n=451, the number of responses come to a total of n=1804. Most participants responded to more than 1 category in questions regarding willingness of emergency nurses to respond to the 4 disaster types explained above in Table 1, p. 29.
Is there a relationship between living status and an emergency nurse’s willingness to work in the ED during a disaster?

For living status, 39.4% (n=176) of respondents lived with children (either with their partner/spouse or as a sole parent), 34% (n=152) of respondents lived with their partner/spouse only, and 26.6% (n=119) of respondents lived alone or with other family/friends (Table 4). The highest proportion of respondents unwilling to respond to a disaster were those with children (p <0.001).

<table>
<thead>
<tr>
<th></th>
<th>Willing (N=1985)</th>
<th>Unwilling (N=185)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Live with partner or spouse</td>
<td>700 (35.3%)</td>
<td>40 (21.6%)</td>
</tr>
<tr>
<td>Live with children</td>
<td>725 (36.5%)</td>
<td>110 (59.5%)</td>
</tr>
<tr>
<td>Live alone or with other family / friends</td>
<td>560 (28.2%)</td>
<td>35 (18.9%)</td>
</tr>
</tbody>
</table>

Is there a relationship between gender, and emergency nurse’s willingness to work in the ED during a disaster?

The majority of respondents 84% (n=373) were female; however there were no significant differences in gender and the willingness to respond to a disaster. In total, 92.2% (1650/1810 responses) of women and 92.7% (320/345 responses) of men reported willingness to respond to disasters (p = 0.333).

Are emergency nurses whose partner has a disaster responsibility more or less willing to work in the ED during a disaster?

A total of 26.7% (n=97) of participants stated that they had partners with a disaster responsibility. There was no difference in willingness to respond between emergency nurses whose partner has a disaster responsibility and those whose partner would not be involved in a disaster response (OR = .761, 95% CI: 0.25 – 2.28, p = 0.626).

---

4 It should be noted that while the number of participants in the survey was n=451, a number of participants responded to more than 1 category for this group of questions. The number of responses is also higher because the analysis refers to all 4 disaster types, as above.
Is there a relationship between children’s age groups and parent’s willingness to work in the ED during a disaster?

Of parents, 38.4% (n=173) of respondents reporting having dependent children (Table 5). Of these, 41.6% of participants had 1 child (n=72), 39.9% (n=69) had 2 children, 16.8% (n=29) had 3 children and 1.7% (n=3) had 4.

Table 5: Willingness to respond to disasters and children

<table>
<thead>
<tr>
<th></th>
<th>Willing (n=250)</th>
<th>Unwilling (n=40)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Infant: Under 1 year old</td>
<td>9 (3.6%)</td>
<td>1 (2.1%)</td>
</tr>
<tr>
<td>Preschool: 1-4 year old</td>
<td>54 (21.6%)</td>
<td>13 (27.1%)</td>
</tr>
<tr>
<td>Primary school: 5 – 9 year olds</td>
<td>61 (24.4%)</td>
<td>14 (29.2%)</td>
</tr>
<tr>
<td>Pre-teen, early high school: 10-14</td>
<td>68 (27.2%)</td>
<td>12 (25.0%)</td>
</tr>
<tr>
<td>High school: 15 – 17</td>
<td>58 (23.2%)</td>
<td>8 (16.7%)</td>
</tr>
</tbody>
</table>

Nurses with children less than 5 years of age were 81.9% less likely to respond to emergency disasters than nurses without children of that age.

How do participants rate the social supports (such as child care) that assist them with their parental responsibilities?

The majority of participants who had children reported that they had excellent or good social support, 38.2% (n=71) rated excellent and 29% (n=54) good (Figure 11).
Are emergency nurses involved in volunteer activities relating to disasters more or less willing to work in the ED during a disaster?

Almost one-tenth (9.8%, n=43) of participants were involved in volunteer emergency activities in their community. There was no significant difference in the willingness of respondents with volunteer responsibilities to respond to a disaster than nurses who were not involved in volunteer responsibilities (OR = 2.03, 95% CI: 0.36 –11.25, p = 0.0.471) (Table 6).

Table 6: Willingness to respond to disasters and volunteer activities

<table>
<thead>
<tr>
<th></th>
<th>Willing (N=390)</th>
<th>Unwilling (N=36)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Volunteer responsibilities</td>
<td>351 (90%)</td>
<td>33 (91.7%)</td>
</tr>
<tr>
<td>No volunteer responsibilities</td>
<td>39 (10%)</td>
<td>3 (8.3%)</td>
</tr>
</tbody>
</table>

Are emergency nurses with an emergency plan more or less willing to work in the ED during a disaster?

Within all participants, 72.9% (n=317) reported that they didn’t have an emergency plan for themselves and their families; while 27.1% (n=118) had a plan. The odds of respondents with a disaster plan being willing to respond to a disaster were 7.74 times higher than the odds of nurses who did not have disaster plan being willing to respond (OR = 7.74, 95% CI:1.72 –34.94, p = 0.008) (Table 7).

Table 7: Willingness to respond to disasters and volunteer activities

<table>
<thead>
<tr>
<th></th>
<th>Willing (N=385)</th>
<th>Unwilling (N=38)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Disaster plan</td>
<td>273 (70.9%)</td>
<td>34 (89.5%)</td>
</tr>
<tr>
<td>No disaster plan</td>
<td>112 (29.1%)</td>
<td>4 (10.5%)</td>
</tr>
</tbody>
</table>
Which factors influence the decision for emergency nurses to work or not to work in the ED during a disaster?

The survey included a range of statements in which participants could identify their reasons for willingness to attend work in disasters or not to attend. Their responses are detailed below (Figure 12). Two of these factors, knowledge/skills in disasters and environmental supports, were analysed further to calculate their influence on willingness.

Figure 12: Factors that influence the willingness of working in the ED in a disaster

The statements are as follows:

<table>
<thead>
<tr>
<th>Statement</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. A professional nurse has a responsibility to work under any circumstances. (n=424)</td>
<td>248 (58.5%)</td>
<td>176 (41.5%)</td>
</tr>
<tr>
<td>2. I have knowledge/ skills to deal with health-care disasters. (n=450)</td>
<td>n=406 (90.2%)</td>
<td>n=44 (9.8%)</td>
</tr>
<tr>
<td>3. My work environment supports working in healthcare disasters. (n=447)</td>
<td>n=331 (74%)</td>
<td>n=116 (26%)</td>
</tr>
<tr>
<td>4. I have a right to say ‘no’ to exposing myself and my family/dependents to risk. (n=445)</td>
<td>n=300 (67.4%)</td>
<td>n=145 (32.6%)</td>
</tr>
<tr>
<td>5. I need more knowledge and skills before I am able to attend health-care disasters. (n=446)</td>
<td>n=131 (29.4%)</td>
<td>n=315 (70.6%)</td>
</tr>
<tr>
<td>6. Managers should organise other staff/employees who agree to attend such circumstances. (n=391)</td>
<td>n=130 (32.2%)</td>
<td>n=261 (66%)</td>
</tr>
</tbody>
</table>
Is there a relationship between knowledge/skills in disasters and an emergency nurse’s willingness to work in the ED during a disaster?

After adjusting for correlation within subjects, nurses who felt that skills and/or knowledge were factors that influenced their reason to attend were more than 4 times more likely to be willing to respond to a disaster (OR=4.5, 95% CI=1.3,16.0; p<0.001).

Is there a relationship between the perception of having a supportive environment and a willingness to work in the ED during a disaster?

In mixed effects logistic regression, there was no significant difference in willingness to respond to a disaster by respondents who reported a supportive environment and those who did not report a supportive environment (OR = 2.29, 95% CI:0.92 – 5.68, p = 0.074) (Table 8).

Table 8: Willingness to respond to disasters and supportive environment

<table>
<thead>
<tr>
<th>Supportive environment</th>
<th>Willing (N=399)</th>
<th>Unwilling (N=36)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>100 (25.1%)</td>
<td>12 (33.3%)</td>
</tr>
<tr>
<td>No</td>
<td>299 (74.9%)</td>
<td>24 (66.7%)</td>
</tr>
</tbody>
</table>
Is there a relationship between emergency nurses’ level of classification and their willingness to work in the ED during a disaster?

In mixed effects logistic regression, there was no relationship between nurses’ willingness to respond and the nurses’ level of classification (OR vs ENs=0.4 (95% CI=0.0-6.0), 1.8 (95%CI=0.1-27.1) and 0.7 (0.0-11.7) for RN’s, Clinical Nursing specialists and managerial nursing positions respectively; ($\chi^2=7.02$, 3df, p=0.07 overall) (Table 9).

Table 9: Willingness to respond to disasters, and level of appointment

<table>
<thead>
<tr>
<th>Willing (N=390)</th>
<th>Unwilling (N=37)</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENs (div1/ div2)(^5)</td>
<td>12 (3.1%)</td>
</tr>
<tr>
<td>RNs(RN/div1 &amp; RN L2/Clin N)</td>
<td>189 (48.5%)</td>
</tr>
<tr>
<td>Clinical Nursing Specialists (Clin Nurse Specialist/CNC, Clin Nurse Educator, Nurse Practitioner)</td>
<td>143 (36.7%)</td>
</tr>
<tr>
<td>Managerial Nursing Positions (Assoc Nurse Manager, Nurse Unit Manager, Director of Nursing)</td>
<td>46 (11.8%)</td>
</tr>
</tbody>
</table>

Is there a relationship between emergency nurses’ qualifications and their willingness to work in the ED during a disaster?

In mixed effects logistic regression there was no association between the level of nurses’ qualifications and willingness to respond (OR=1.4, 95% CI=0.9 to 2.2; p=0.18) (Table 10).

Table 10: Willingness to respond to disasters and level of qualification

<table>
<thead>
<tr>
<th>Willing (N=395)</th>
<th>Unwilling (N=37)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hospital-based training</td>
<td>28 (7.1%)</td>
</tr>
<tr>
<td>Vocational education (Cert IV &amp; Dip)</td>
<td>38 (9.6%)</td>
</tr>
<tr>
<td>Undergraduate tertiary (Bachelor &amp; Hons)</td>
<td>110 (27.9%)</td>
</tr>
<tr>
<td>Postgraduate tertiary (Postgrad Cert/Dip, Masters &amp; PhD)</td>
<td>219 (55.4%)</td>
</tr>
</tbody>
</table>

\(^5\) These levels were based on the current classifications in Australia at the time the survey was designed, in March 2010.
Are emergency nurses who have a disaster-related qualification more or less willing to work in the ED during a disaster?

Disaster qualifications were reported by 48.2% (n=217) of respondents. These included paramedic qualification, infectious disease certificate, infection control, disaster management, public health, MIMMS or other Incident command system training or another relevant course at a minimum of certificate/diploma level. In mixed effects logistic regression, nurses who held a disaster-related qualification were more than 2 times more likely to respond to a disaster than those who did not hold disaster-related qualifications (OR = 2.62; 95%CI: 1.11 – 6.19, p = 0.028) (Table 11).

Table 11: Willingness to respond to disasters and disaster-related qualification

<table>
<thead>
<tr>
<th>Disaster qualification</th>
<th>Willing (N=38) n</th>
<th>Unwilling (N=399) n</th>
</tr>
</thead>
<tbody>
<tr>
<td>No (n=233)</td>
<td>194 (48.6%)</td>
<td>33 (86.4%)</td>
</tr>
<tr>
<td>Yes (n=217)</td>
<td>205 (51.4%)</td>
<td>5 (13.2%)</td>
</tr>
</tbody>
</table>

Are emergency nurses who have undertaken courses on disasters more or less willing to work in the ED during a disaster?

More than three-quarters (85.1%, n=384) reported having completed a course in disaster response. The courses included hospital education sessions, military training, short courses in MIMMS or other incident command systems training, Emergency Management Australia courses, postgraduate study, Emergo Train or another relevant course. In mixed effects logistic regression, there was no significant association between willingness to respond and nurses having or not having a disaster-related course (OR = 2.11; 95%CI:0.89 – 5.04, p = 0.089) (Table 12).

Table 12: Willingness to respond to disasters and disaster related course

<table>
<thead>
<tr>
<th>Disaster course</th>
<th>Willing (N=38) n</th>
<th>Unwilling (N=399) n</th>
</tr>
</thead>
<tbody>
<tr>
<td>No (n=66)</td>
<td>120 (30.1%)</td>
<td>15 (39.5%)</td>
</tr>
<tr>
<td>Yes (n=384)</td>
<td>279 (69.9%)</td>
<td>23 (60.5%)</td>
</tr>
</tbody>
</table>
Is there a relationship between working less than 0.5, working part-time (0.5->1) or full-time, and emergency nurses’ willingness to work in the ED during a disaster?

When hours of employment were examined, 12.9 % (n=58) of respondents worked less than 0.5 EFT (equivalent full time) (1-34 hours/ fortnight), 43.9% (n=198) of respondents worked 0.5 to 0.9 EFT (35-69 hours/ fortnight) and 43.2% (n=195) of respondents worked full time (70 hours/ fortnight or more). There was a significant association between the number of hours worked and willingness to respond, with those working more than 0.5 FTE 3.8 times more likely (p=0.03) and those working full-time 4.8 times more likely (p=0.01) to be willing than those working part-time (OR = 2.11; 95%CI=0.89 – 5.04, p = 0.089) (Table 13).

Table 13: Willingness to respond to disasters and working hours

<table>
<thead>
<tr>
<th>Hours Worked</th>
<th>Willing (N=400)</th>
<th>Unwilling (N=38)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Works &lt;0.5 EFT (n=58)</td>
<td>45 (11.2%)</td>
<td>12 (31.6%)</td>
</tr>
<tr>
<td>Works 0.5 – 0.9 EFT (n=198)</td>
<td>173 (43.2%)</td>
<td>18 (47.4%)</td>
</tr>
<tr>
<td>Works full time (n=195)</td>
<td>182 (45.5%)</td>
<td>8 (21.1%)</td>
</tr>
</tbody>
</table>

Is there a relationship between the hospital size category and emergency nurses’ willingness to work in the ED during a disaster?

There was no significant association between hospital size (based on the number of beds) and nurses’ willingness to respond (OR=.9085347; 95% CI:0.61-1.34, p=0.6320) (Table 14)

Table 14: Willingness to respond to disasters and hospital size

<table>
<thead>
<tr>
<th>Hospital Size</th>
<th>Willing (N=360)</th>
<th>Unwilling (N=36)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than 11 beds (n=1)</td>
<td>1 (0.3%)</td>
<td>0</td>
</tr>
<tr>
<td>11-50 beds (n=22)</td>
<td>20 (5.6%)</td>
<td>2 (5.6%)</td>
</tr>
<tr>
<td>51-100 beds (n=34)</td>
<td>30 (8.3%)</td>
<td>4 (11.1%)</td>
</tr>
<tr>
<td>101-200 beds (n=74)</td>
<td>63 (17.5%)</td>
<td>7 (19.4%)</td>
</tr>
<tr>
<td>201-500 beds (n=192)</td>
<td>175 (48.6%)</td>
<td>14 (38.9%)</td>
</tr>
<tr>
<td>More than 501 beds (n=83)</td>
<td>71 (19.7%)</td>
<td>9 (25%)</td>
</tr>
</tbody>
</table>
Is there any difference in degree of willingness to work in the ED during a disaster for emergency nurses who work in different states?

There was no association between willingness to work and state (Odds Ratios vs NSW = 0.8 (95%CI=0.2-3.4) for VIC, OR=0.3 (95%CI=0.1-1.1) for QLD, OR=0.2 (95%CI=0.0-1.2) for WA, OR=0.3 (95%CI=0.1-1.2) for SA, OR=2.0 (95% CI=0.0-94.3) for Tas, OR=0.2 (95% CI=0.0-1.6) for ACT and OR=0.0 (N/A) for NT respectively; χ²=8.45, 7df, p=0.29 overall) (Table 15).

### Table 15: Willingness to respond to disasters and states

<table>
<thead>
<tr>
<th>State</th>
<th>Willing (N=395)</th>
<th>Unwilling (N=36)</th>
</tr>
</thead>
<tbody>
<tr>
<td>NSW (n=80)</td>
<td>77 (19.5%)</td>
<td>3 (8.3%)</td>
</tr>
<tr>
<td>Vic (n=125)</td>
<td>119 (30.1%)</td>
<td>6 (16.7%)</td>
</tr>
<tr>
<td>Qld (n=82)</td>
<td>70 (17.7%)</td>
<td>12 (33.3%)</td>
</tr>
<tr>
<td>WA (n=36)</td>
<td>32 (8.1%)</td>
<td>4 (11.1%)</td>
</tr>
<tr>
<td>SA (n=68)</td>
<td>60 (15.2%)</td>
<td>8 (22.2%)</td>
</tr>
<tr>
<td>Tas (n=10)</td>
<td>9 (2.3%)</td>
<td>1 (2.8%)</td>
</tr>
<tr>
<td>ACT (n=21)</td>
<td>19 (4.8%)</td>
<td>2 (5.6%)</td>
</tr>
<tr>
<td>NT (n=9)</td>
<td>9 (2.3%)</td>
<td>0</td>
</tr>
</tbody>
</table>

Is there a relationship between the hospital’s work setting locality and emergency nurses’ willingness to work in the ED during a disaster?

The odds ratios of willingness to work compared to Major tertiary hospitals were 0.7 (95% CI=0.3-2.1) for Urban districts, 0.7 (95% CI=0.2-2.1) for Regional centres and 1.0 (95% CI=0.3-3.9) for Rural respectively. There was no association between a work participant’s work setting locality and willingness to respond to a disaster (χ²=0.68, 3df; p=0.88) (Table 16).

### Table 16: Willingness to respond to disasters and work setting

<table>
<thead>
<tr>
<th>Work Setting</th>
<th>Willing (N=387)</th>
<th>Unwilling (N=37)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Major tertiary hospitals (n=195)</td>
<td>181 (46.8%)</td>
<td>14 (37.9%)</td>
</tr>
<tr>
<td>Urban districts (n=95)</td>
<td>85 (21.9%)</td>
<td>10 (27%)</td>
</tr>
<tr>
<td>Regional centres (n=79)</td>
<td>70 (18.1%)</td>
<td>9 (24.3%)</td>
</tr>
<tr>
<td>Rural centres (n=55)</td>
<td>51 (13.2%)</td>
<td>4 (10.8%)</td>
</tr>
</tbody>
</table>
Is there a relationship between the perception of employer preparedness and emergency nurses’ willingness to work in the ED during a disaster?

If emergency nurses perceive that their employers are more prepared, the emergency nurses will be more willing to work in the ED during a disaster. (OR=2.664226, 95% CI= 1.749-4.056, p=0.000)

Is there a relationship between the perception of nursing colleagues’ preparedness and emergency nurses’ willingness to work in the ED during a disaster?

If emergency nurses perceive that their nursing colleagues are more prepared, the emergency nurses will be more willing to work in the ED during a disaster. (OR=2.628365, 95% CI=1.663046-4.154007, p= 0.000)

Is there a relationship between the perception of unit/ward staff preparedness and emergency nurses’ willingness to work in the ED during a disaster?

If emergency nurses perceive that unit/ward staff is more prepared, the emergency nurses will be more willing to work in the ED during a disaster. (OR=2.334381, 95% CI=1.528479-3.565202, p=0.000)

Is there a relationship between the perception of medical & allied health staff’s preparedness and nurses’ willingness to work in the ED during a disaster?

If emergency nurses perceive that medical & allied health staff is more prepared, the emergency nurses will be more willing to work in the ED during a disaster. (OR=2.602403, 95% CI= 1.681398-4.027901, p=0.000)

Is there a relationship between the perception of managers’ preparedness and nurses’ willingness to work in the ED during a disaster?

If emergency nurses perceive that their managers are more prepared, the emergency nurses will be more willing to work in the ED during a disaster. (OR=2.041825, 95% CI= 1.355877-3.074801, p=0.001)
Qualitative data analysis

This section of the report provides the findings from both the focus groups and the interviews. The themes come from both sets of data.

Introduction

This research explores emergency nurses’ willingness to respond to a range of disasters. The themes, identified from both the focus groups and the interviews, provide an exploration of the issues that may become important to emergency nurses when they are placed in a position where they need to assess their willingness to attend work or not. This is in the context of a natural or man-made event/disaster where there are mass casualties and changes to some degree to society’s ability to function. This change to society may result in loss of power, water, closing of schools, transport restrictions, and increased risks to public safety. These changes could impact on emergency nurses’ lives in both their work and home environments. No matter what the situation is, the event will result in some form of additional risk and stress to the emergency nurse.

1 Uncertainty

Participants recognised that should a disaster or emergency event occur they may be required to attend work, even if they are off duty. If already on duty they may not have a choice whether to go or stay. There was a lot of discussion across all of the focus groups and interview participants about what they would do in the event of a disaster. This included the issues they would want to consider in making the decision to stay at home or go to work. The issues varied depending on individual circumstances. Personal issues related mainly to two areas, their home environment and what was happening at work.

1a It depends on what is happening at home

Whether or not they were willing to work depended on a combination of complex issues related to the potential risks to family, pets, property and community.

Family

These participants highlighted the importance of being there for their families:

Well, my family's number one in my life, not my work. If my family required me on that day...then I would be there for them. I would seriously consider them before I considered anybody else. …They would be part of me making my decision, if they were safe and I could care for them, I would have to say I would choose my family over everybody else and I know that's selfish. (FG1, p6)

Oh, family commitments would stop me. (FG3, p5)

So kids, husband, home …and you know the fact there's not a lot of family support around. So who do you actually call on to give you a hand? (FG3, p6)
Yeah, depends if you’ve got kids, if you’ve got family ...that you might have to stay at home. So I think it’s an individual and on the day type of thing. (FG1, p5)

There were also a significant number of participants who struggled with the dilemma of infectious diseases and the impact this may have on their families. Would there be a risk of bringing infections home from work? If however they went to work, would they be able to better protect their family by helping to reduce the risk of the spread of infection across the community? These participants contemplated this dilemma:

I don’t want to go to work, come home and bring something home. . . .So that would be something that I would consider. . . .Or is me going to work in the best interests of my family to reduce infection control, so they don’t catch anything. (FG1, p8)

I know if there was a major disaster that my family would rally round to physically look after my family - it’s the health implications that I could be transferring to my family that is my real concern. (FG5, p8)

Before I had children I would have come in - now I have a child - if there was something that is going to pose a risk to him I’d probably be reluctant to come in. (FG6, p17)

Participants talked about their concern for family if they were at work when a situation arose, as described by this participant:

More on an individual level too. Like if you do happen to be here at that time, again, what do you do with family and life outside of work and beyond, that you need to get back to even if you are required to be here a bit longer. (FG3, p4)

Caring commitments
A few participants discussed their role in caring for an elderly relative. This responsibility would be taken into account in their decision whether to stay or go.

I’m a carer for my mother…I would have to make sure there was other family to look after her… She’s totally reliant on me. (FG4, p3)

Grandparents I’m caring for them, so it’s hard sometimes. (FG3, p5)

Pets
Caring for pets was another important consideration for some participants:

My main thing is pets and farming responsibilities… And so you can’t be away for days without notice. It’s just that coordination. (FG3, p6)

All my animals. Like my dogs… who could actually get into [the house to] physically do it? (FG3, p8)
Community

Participants identified that they would consider not only their family situation but also that of their own community. They may be living in the area that is most affected by an event and would want to stay to help, or may have to evacuate, as discussed by these two participants.

*My considerations about myself, my family, if it affects my local area I wouldn't come to work... But if it was in a different area, certainly I would come to work and help out my colleagues.* (FG3, p7)

*It also comes down to where we live. ...I was getting phone calls can you come in? I'm like, no I can't ...I've got to evacuate.* (FG3, p24)

As well as thinking about all of the issues in the home environment, participants also considered what would be happening at work. This would be weighed against the issues in the home environment, helping them make their decision on 'how willing they were' to go to work.

1b It depends on what is happening at work

The discussion in this section relates to the work environment in a disaster. This includes changes to nurses’ roles in emergency departments, as well as the importance of having a disaster plan ready to be implemented. Participants queried whether or not they would even be able to get to work, due to structural damage and road blockages from a disaster. The amount of support that emergency nurses could expect from management was also discussed. This is an important factor that would contribute to their level of willingness to go to work in extreme conditions.

Changes to roles and responsibilities

All participants recognised and accepted that their role and level of responsibility in the emergency department would change their work practices, in particular how they triaged. The changes to the role would depend on the type of event, the number of casualties, nursing activities allocated and the amount of space and staff available. These participants highlight a few of these issues:

*Well it depends on the day, who’s leading it, you'd be delegated a certain role. You wouldn't just be doing - for example, hourly obs[ervations] on people when they come in . . . so you'd have to change your role.* (FG1, p4)

*I know we’ve got . . . handout sheets that everyone could get dished out with your roles and responsibilities on it.* (FG5, p6)

. . . you’ve got to change your mindset from what we do now; you've got to flip everything to do the greater good, not the single person. . . . but you've got to also be humanitarian and do the best you can for that person, you don't just push them in the corner type of thing. So you've got to keep the caring going. (FG1, p2)
Disaster plan in place

Most of participants knew that their emergency department had a disaster plan. A significant number of this group had not experienced practising the plan and so did not know what would be expected of them in implementing it. This situation was related more to emergency nurses new to the role. However, not all participants were confident that their emergency department actually did have a disaster plan. Many had not sighted it, did not understand what would happen, or who would take charge. Most expressed a view that having a plan, knowing about it and having practised it was an important consideration in their decision to go to work. This was a particular point explored in the interviews, which consistently affirmed the focus group findings that the chance to practice regularly increased their feeling of being more confident in themselves. In particular they felt that they knew what their role would be, so they would not let the team down.

Having a plan in place and regularly practised influenced their feelings of confidence in both themselves and the leadership of the department. This view is expressed by these focus group participants:

“If you were aware of what the plan was and knew what your role was you’d be more willing to be involved in it where, if they said, can you come in and help us, you’d be like, well I don’t know what to do. I probably wouldn’t be as willing to come in and help. If you were prepared and knew exactly what your role was going to be, I think people would be more willing to come in.” (FG2, pg5)

“Every ED I’ve ever worked in has got a disaster plan that at least twice a year is pulled out and practiced. . . . If there is a disaster . . . I’m happy to lend my skills to it.” (FG4, p7)

“Our last plan was updated in [year]. So our junior nurses won’t even know what a disaster is and a lot of our senior nurses don’t even know where the disaster store key is kept.” (FG1, p10)

“I’ve been in a Code Brown at my old hospital, and we were very prepared and we were still under prepared. So to think that this hospital has no structure at the moment, it’s frightening.” (FG1, p11)

Difficulty getting to work

Participants discussed the situation where there may be difficulties actually getting to work due to road closures, or disruption to traffic. They would be willing to go, but may not be able to physically get there, as mentioned by these participants:

“How would we get here, how would we get in, how would we be able to even help if we don’t even know how to get inside the hospital.” (FG2, p6)

Confidence in management and senior nursing staff

Emergency nurses’ confidence in management’s support and preparedness to respond in a disaster situation was raised by participants across a number of focus groups. This was further explored through the interviews. Both the focus group and interview participants expressed a view that they needed to feel confident that management would be present. In particular they needed to feel confident that those in management would not put them at risk.
Whatever the disaster is, if they could provide our safety or get the assurance then it wouldn't affect me coming in, as long as they could guarantee that if there was any risk that I, or someone else, could become ill or die I don't think I'd be jumping into that… (Int4, p8)

They also reported wanting reassurance that management staff would provide the right support and equipment to enable them to keep safe while performing their role.

I would come in here for almost anything if I was guaranteed some form of safety. And I know that we're relatively prepared and I know we can get masks and gowns. If we were falling short of masks, I would not come in ... (FG5, p10)

Some participants in the focus groups were less confident in management's decisions about their safety. For instance, some nurses who had worked in the Swine Flu season thought they were not taking enough precautions:

I think that it is about supplies because I remember from last year with Swine Flu and masks and the issues that we had around that sort of thing ... we were running a pretty fine line (FG4, p28)

I was looking up all the documentation and everything in America was saying if you're pregnant well then you should be only phone triage… I'm not the only pregnant person in the department. And it hadn't even been thought of. [FG3, p.27]

We were doing temperatures in there with no ventilation and I thought that was ridiculous. I refused to go in there. [FG1, p.13]

Not only was confidence in management personnel an important factor to the participants’ willingness to go to work, but also consistency across all the senior clinical nurses’ behaviours and attitudes was mentioned during the focus groups. The potential lack of consistent clinical opinion related to risk and safety precautions were issues raised in the focus groups. This was important because senior nursing staff were identified as one of the main groups the other nurses would look to in times of uncertainty.

If you knew that you were working with someone that knew what they were doing and knew the plan...That makes you so much more confident and supported. (FG2, p25)

Their opinion about the potential safety of staff was important to junior staff. If disagreement between senior nurses occurs, it undermines the confidence of junior nurses, as expressed by this participant:

Personal safety... because I'm fairly junior I look to my seniors for what to do and one is saying surgical mask is fine and the other one is like, no, [name]; no, you don't have to gown... (FG2, p11)

During the interviews, participants consistently raised the importance of the role of senior nursing staff in providing leadership at critical times. In particular, they would look to the more senior nursing staff for reassurance about the personal risks, as well as what to do. One of the ways they would judge the seriousness of the situation would be by the level of anxiety
expressed by the senior nursing staff. The more confident the senior staff appeared to be, the more willing the less experienced nurse would feel to be at work. This places a lot of responsibility on senior nurses to know what to do and to assess the risks in crisis events, particularly related to the use of equipment and their personal safety.

All junior nurses would be looking to us, the senior nurses and there is none of us completely educated in what would happen…If you were confident they would be like oh look my clinical nurse is confident. They know what is going on. This is good. I can take orders from them. (Int1, p10)

Making the decision to stay is significantly dependent on the nurses’ confidence in their senior nurses’ demeanour, perceived knowledge, experience, and provision of consistent advice to the less experienced members of staff.

1c It depends on the information provided

Participants identified the importance of the quality and timeliness of information available to them about the disaster. This would enable them to assess the situation and decide whether to go to work or stay at home. Good quality, timely information also supported their confidence in the senior staff. The participants identified a number of key issues on which they would want to receive information.

Information on the type of disaster and who is affected

The type of disaster and who is involved are the questions most participants wanted to know, as highlighted by these participants:

It is knowing what the disaster is - or having as much information as you can get that makes a big difference too - you know how you're going to respond to it and what it is … (FG6, p21)

I think it's your responsibility to come in if it's in your best interests.... so I think you need to assess what the disaster is and whether you're willing to go into it. (FG1, p5)

I think the other thing that's a really important consideration is whether you're responding to something that may have.... personally life threatening consequences ... if you're going to be contaminated, what happens if you're there and you're actually exposed to the virus and then you're not allowed to go home to your children until you're cleared for a certain number of unknown hours? (FG3, p7)

The types of questions they wanted answers to were explored more deeply at interview, and include:

What sort of disaster, how many people affected, why it’s happened, who is affected and is everybody out? If I leave my family are they going to [be] relatively safe in their home and in their community, or is it a threat for the whole community? If I go in am I going to be the only one? What sort of support am I going to get? Are we going to get help or are we going to be left alone in the emergency department to deal with it? (Int3, p12)
The participants wanted to understand how they would access information in a timely manner, and what the information/communication system would be, as identified by this participant:

*Need official contact structures and things. The other thing, I mean apart from direction, I was thinking of information. ... the organisation giving briefings, email briefings on this is the current thing, this is what [the health department] is saying, this is our plan. So you had an organisational information approach. ... did not happen with the flu epidemic, do I actually need some prophylaxis? You know, talk to me, you're sending me there. Can somebody actually give me the facts and figures so that it becomes an acceptable risk? (FG3, p18)*

**Provision of accurate information**

The participants wanted to be assured that the information, particularly about personal safety, was accurate, as expressed by this participant:

*So if we had emergency services coming in and saying this is what's going on and you need to do this, it's been well reported, this is going to happen, it's okay. It would still have to be evidence based for me to do it. (FG5, p11)*

Good communication is something that actually helped participants who had responded to an event in the past to cope with the situation. They rated communication within the emergency department as extremely important.

*Yeah. I think the biggest thing was communication. Like our consultant constantly communicated with the person that was in charge ... (FG6, p6)*

This view was supported throughout the interviews. Those interviewed expressed very strongly that knowing that there would be a good communication system and good communicators, would make them more willing to participate in a future disaster, as expressed by this participant

*Communication would be very important in a disaster situation. (Int2, p5)*

**The ability to communicate with their family and colleagues outside the workplace**

There was some recognition by participants that they may be in a situation where the event slowly unfolds while they are at work, and they may not have all of the facts about the extent of the event. This makes it difficult to advise colleagues on whether or not to come to work, as this participant explains.

*Well you may not necessarily even have that choice. You may just end up in that situation that continues to evolve over time and that's something that we don't always have the luxury of knowing what we're signing up for. And, can you come in and help, we've got a disaster. Okay, what is it? We don't know yet... And once you're in it, can you get out of it? (FG3, p26)*

Participants in both the focus groups and interviews thought that those who would already be at work would want information about where the disaster was, what it was and how many were affected. They would be particularly concerned about their families and need to know that they were safe. They also would want to communicate to their families that they were safe and how
much longer they may be at work. This would help them to assess their willingness to remain at work, as summarised by this participant:

I think it would just be communication. Like with your family I wouldn't care if it were not me speaking, but even to know that somebody else has rung, to say, yes I'm still here, yes I'm okay. You're going to have to have the children for another day. You're going to have all the anxieties of all your family about how are they? And what's happening with you. (FG3, p17)

1d It depends on the type of disaster

Perception of threat

The type of disaster was one of the most important factors for consideration by emergency nurses as they weighed up whether to go to work or stay at home. These focus group participants explored this perception of threat:

I think it depends on the disaster as well. I mean, if you're talking about a plane crash I would be here in five minutes but if you're talking about something that is life threatening and you say, okay, are you willing to come to work at the risk of - you could catch this or that. I'd be, well, no, I don't want to come to work; I'm not coming to work if it is putting my life at risk. (FG2, p9)

So if it was a building collapse then I'd want to come in. If it was say biohazard, I'd think twice about coming in. If it's risking my own safety and my wellbeing ... (FG3, p7)

... when (SARS) happened they made an assumption that all these nurses would go to work and nurse all these sick people. Infectious diseases is a bit of a different kettle of fish in regards to if you have children and a family at home are you going to put yourself in danger by nursing someone highly infectious. Will you do that or will you stay home and go no sorry I'm protecting my family and myself. So that was willingness in accordance with the situation as well. I don't know if that's something for me, but I would have to consider. (FG4, p.18)

There was a consistent view across all of the focus groups and interviewed participants that the type of disaster would have a very strong influence on their decision about their willingness to go to work or not. This was particularly strong in the case of infectious diseases where the risk was either high or unknown of transmitting infections to their family, friends and community.

The information about the type of disaster would be considered along with what was happening for them at home and at work. For most of the participants the type of disaster would have a lot more weight in deciding whether or not to go to work than some of the other issues.

The issue of personal risk was another factor that emergency nurses identified as being an important consideration.

Though the weighing-up of the personal risk was very important, there was also an optimistic view expressed by participants in both focus groups and interviews that over all, things would work out all right in the end.
**It will be all right**

Some participants reported feeling optimistic and confident that they would be prepared. That training would ‘kick in’; colleagues would be there to support each other; management did have a disaster plan and would know what they were doing; everyone would work together; it would be exciting and it would be all right.

*Is that because of the laid back attitude - it'll be right mate. ... You know, are we prepared - no and I personally think it's just that laid back Aussie attitude that we'll be right.* (FG3, p22)

There was an idea that the community needed emergency nurses to be there for them - emergency nurses would respond to mass casualties no matter what the cause, as this is their bread and butter. As described by these participants:

*[Responding is] not [an] obligation it's just part of your job...* (FG6.p7)

*I just think if we had a disaster, we're not prepared, but as emergency nurses we - as an emergency team we'd get in there and we'd do the best we could.* (FG2, p29)

*Yeah. Just deal with it.* (FG2, p29)

*...if you take on roles as in ambulance, police, nursing all the rest of it, there is some implication of when something happens, you are the people who are going to be helping* (Int10, p6)

*I guess if it happened right now we'd all go out there, we'd do it. But we would. But we're not prepared, clearly...* (FG2, p24)

The other aspect to this discussion is a view that Australia is highly unlikely to have a major disaster. This is more so in some states than others as expressed by this participant:

*But the other thing too is I think in a country, short of bushfires, we don't have a huge threat in any forms of avalanches, earthquake zones really --unlike New Zealand and San Francisco. Yeah we don't have anything like a lot of other countries that prepare themselves well for these events...* (FG3, p22)

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**1e It depends on degree of risk**

This section explores the focus group and interview participants’ thoughts about the event and weighing up their own risks to personal safety. The issues they raised included their own medical fitness and well-being. Colleagues who were pregnant were considered to be at extra risk of harm to themselves and their babies. Participants also discussed competing personal issues such as volunteering in community emergency organisations, as well as their partners’ competing work responsibilities—such as the police force.

**Chronic health conditions may increase the risk**

Participants considered the increased risk to the health of those with chronic medical conditions should the work environment change. This participant discussed how some medical conditions,
such as asthma, required a specific environment to stay well, and the ongoing need for regular medication:

something to consider is supply of your own pharmaceuticals and any access you need to ongoing medical requirements or whether or not you're going to enter a zone where your asthma's...(going to be affected) ...and end up getting quite sick. (FG4, p5)

**Pregnancy is a risk**

There was consistency across all focus groups and interview participants that any nurse who was pregnant should not put herself or her baby at risk and should stay home, particularly in the case of environmental or biochemical risks.

I know when the flu was on I was pregnant. So I was paranoid … if you get the flu and you weren't pregnant, it's a different story. If pregnant I'd probably be happier to get gastro than get Swine Flu. I'd be happy to come in and help doing gastro, but not swine flu. It's thinking about the degree of risk that you're at. (FG3, p12)

... pregnant women should not be going to a disaster situation (FG4, p5).

**Assessing the risks of working in dual roles**

Another important factor raised was the dual role that emergency nurses may have, particularly those in the rural areas, with volunteer services such as ambulance or local country fire services. The participants discussed the need to assess which role would require their skills the most, as well as which role may put them and their family more or less at risk. This participant explains this dilemma:

I volunteer for an ambulance as well, so certainly depending where that is or if it affects my area that would take primary consideration as opposed to my employment. (FG3, p6)

**Partner's role**

The role of the emergency nurse's partner was raised as an issue to be considered when they assessed their risks. This is especially the case where the partner may already be in a high-risk role, such as police, ambulance or state emergency services or was another emergency nurse. There may be family commitments, where someone needs to stay home to look after the children, pets or other family members. Someone may need to stay home to care for the property or in case they need to evacuate. Who goes and who stays? This question was discussed by these participants:

My partner is a paramedic so we'd probably both have to go. If he went, I'd go. But if he didn't, I'd want to stay home. (FG3. p8)

My husband's a policeman. So if there was something in the local area - so if there was something major, he would also be involved. So it would then be the balance of depending on how severe it is, do two parents both go, or does just one parent go and one parent stay? And who goes? Like whoever's at work
probably has to stay. But you know what I mean it's that balance of - well not really two of us if we're both involved. (FG3, p6)

My husband's in emergency services and a police officer. So you know there is a bit of coordination I guess that would be required. (FG3, p6)

1f It depends on the team

Both the focus group and interview participants felt that the quality of the team members working there with them in a disaster response, along with the positive sense of professional collegiality, were two important issues for willingness to attend work. The preparation of the whole team was also considered. As one participant said when discussing their confidence in responding to a mass casualty event, ‘I was [confident] because of the team I was with’. (FG6, p30).

Collegiality

All of the participant groups identified the sense of professional collegiality as a very strong issue when weighing up willingness to attend work. Through the interviews it was further acknowledged that the stronger the culture of collegiality already present in the workplace, the more weight it would have on the willingness to go to work. Interview participants discussed the potential problem of having staff present that were not willing to be at work, and in particular, how this would affect the team cohesion.

Without willingness you don’t have team cohesion. If you have an unwilling person it breaks up that team environment, so it’s very important. You don’t want that person to be in your team if they are unwilling and negative. (Int5, p13)

Supporting, encouraging and sharing the experience with colleagues they respect was seen as a potentially positive experience.

... it was very lucky on ... night that we had a very experienced senior team whereas we’ve got a lot of juniors ... (FG6, p29)

Many of the groups discussed the impact on the workload and the increased stress levels, in the event of colleagues not attending work. This was not discussed with intent to blame those who do not come into work, but as a matter of fact. The more experienced staff was greatly valued in the workplace in times of crisis. This factor had a significant effect on increasing willingness.

Quality of the medical staff

The level of trust in the medical staff was another important factor in determining willingness to attend work. The quality of the medical staff was of particular note to most of the focus group participants:

I think trust in my doctors. I need that. If I've got someone who is fumbling and umming and ahhing, I wouldn't be prepared to assist in a disaster. Especially if there’s some form of contagion. ... they do call the shots and they have that
objective overview of this patient, of the disease process. Their knowledge far outweighs mine so I need them to be sure. (FG5, p29)

It depends on your registrar, it depends on the consultant. ... we all know that they are very variable and I think that makes a huge difference. But if you had a not particularly communicative consultant and a junior team running the floor - that's a big ask. (FG6, p30)

**Supportive behaviour of colleagues**

The supportive behaviour of colleagues was a fairly important mediator on how the emergency nurses would behave and how prepared and willing they would be. This includes supportive behaviour of management personnel as well as colleagues—as discussed under collegiality—and senior staff. Supportive behaviour included a regular presence in the emergency unit by senior administrative and professional management staff. It also included their genuine acknowledgement of the extra stress staff would be experiencing, good communication with staff about the unfolding situation, as well as trying to provide adequate resources. This type of behaviour was discussed by these focus group participants:

> And senior management as well - like not just the medical officer but support from above. You need that support I think....not (just) have a good day, I realise you're really busy and pat you on the back. Get on with it.... It's also what help they send you too isn't it. (FG6, p37)

> The support as well; like well done guys, you're doing a really good job, keep going, that sort of simple stuff as well ... That would be nice. ... (FG2, p21)

> ... wouldn't just expect all of us to come in. It would be - not management but people higher up. They would definitely - if they expect us to come in and expose ourselves and put ourselves at risk and work hard and work for how many hours, I would expect them to come in as well sort of thing - and their encouragement, and maybe them on the floor would be good as well ... (FG2, p21)

**Outside support from experienced emergency personnel**

The support and confidence in medical staff and senior management was clearly important for the participants. They did not want to feel left alone to take the brunt of the stress caused by the mass casualties and disaster.

As well as the regular presence of senior management, participants discussed feeling more confident when they saw police and other emergency service personnel working with their senior staff, as contemplated by this participant:

> ... it's been really nice to see the police and it was really nice to see the chief nursing officer with policemen walking around. And that's about the only two people that I felt confident in seeing. I was really confident when the bomb squad turned up because oh, it's all right now. You know what I mean? So why don't you have that confidence in the way it was run up until then? (FG3, p20)
The presence of authoritative figures, who ‘look like’ they know what they were doing, was an important factor for emergency nurses. A sense that senior staff would be there at the time of a disaster was significant, as was the sense that all of the team should be well prepared.

**Feeling prepared**

The strong sense of collegiality was also about everyone being on the ‘same page’, in terms of disaster preparedness. This is because the better prepared all individuals in the team were, the more confident they felt to be present at work to respond. As stated, ‘to up our sleeves and away we go’ (FG6, p30).

The opportunity to participate in rehearsals for a disaster or mass casualty was seen as an important contributor to their feeling of being prepared and confident. This focus group participant explains:

> Although I’ve never done a disaster management thing, I know it’s well-rehearsed and the key people know what should be happening, when, where I should be, where you should be, do you know what I mean? So I have faith that will happen but it’s -What do I do, where do I go? (FG5, p19)

This view was supported by other focus group participants:

> ... you think it would be good to have some more knowledge about how the hospital would work together, like how do you work with wards and other parts of the hospital ... (FG2, p15)

> Confidence in procedure, I’ve not ever done a disaster management course - I’d be a bit nervous. But I’ve looked through all the sheets and everything and know that every role is very simple. You’re just given four or five tasks to do, so it’s definitely breaking down. I know that. But yeah, because I’ve not physically done it, confidence in a procedure as to what happens and what actually my role is... (FG5, p18)

> I think there’s a danger of creating a taskforce, particularly for a disaster thing - it’s something that everyone should be involved in. It should be a department thing, not a taskforce, an elite special [group] that can deal with these disasters. Because if it - if disaster happens it will impact on everybody, ... So maybe if they knew everything and knew where everything was but then disseminated that information to all of us and did education so we knew at all times... (FG5, p28)

Focus group and interview participants supported undertaking disaster preparedness activities with their colleagues. The use of regular drills was considered an important part of being prepared and confident at work, as discussed by this focus group participant:

> I think when you’re exposed to a disaster plan that we carry out twice a year it helps gain confidence. (FG4, p2)

This was further explored with interview participants who all identified the significance of education and training. The opportunity of participating in mock disasters was highly valued. Those who have been involved stated that they felt more confident and prepared because of
this experience. Knowing what their role would be in a disaster was one of the most important parts of the mock disaster experience. This gave them the confidence that they felt they were lacking because it was unknown territory for many of them. As one participant said:

*It is the fear of the unknown. What you don’t know you fear. But trauma – that's what we do.* (Int1, p5)

The importance of practice reduces the feelings of being fearful.

*I think it (practice) actually takes away the fear factor. ...Because you have done something like that before there’s not the fear of the unknown...I think it takes away the fear factor so you’re actually more willing.* (Int6, p7)

If nurses are fearful of a situation then there is a feeling of being less prepared and less confident and therefore less willing to get involved.

The opportunity to have a mock experience should involve everyone in the emergency unit. This was strongly viewed as very positive because it shared the responsibility across the team and led to the broader team feeling better prepared for a disaster. If health services were not undertaking disaster plan practice then some other form of awareness training was seen as necessary, as explained by this participant:

*... if you are not going to do mock disasters - have a team leader card - this is what you need to do ... I think there needs to be more [warden training] for the senior staff because even the people that are acting up in the Level 2 positions - nobody has the [warden] training so after hours we don't have anyone really that should be wearing that hat. So I think there needs to be a lot more preparedness.* (FG6, p34)

Being prepared as a team was seen as important by both focus group and interview participants. It would add to the feeling of collegiality and support. It would also help build each person’s confidence in their knowledge of what is expected of them within the team and what they would do together.

The sense of ‘team’ and degree of collegiality are important factors to the participant’s sense of willingness to be at work in a disaster. The stronger the workplace culture is, that builds a positive team environment and a positive sense of collegiality within the team, the more willing emergency nurses would be to go to work. This particularly applies to the ‘less exciting’ types of disasters where there are increased health risks.

Opportunities to undertake disaster training and mock drills together on a regular basis were highlighted by participants as an important factor in helping to develop a team approach and build staff confidence in each other to respond to a disaster. The thought that everyone in the team would know what to do gave emergency nurses a stronger sense of confidence. This was especially the case for the newer emergency nurses.

As well as more preparation, the presence of senior management, who appeared to know what they were doing, along with trained specialists, such as bomb squad or emergency officers was
perceived positively by participants. This helped to provide the workplace environment with a sense of control and reassurance.

As well as considering what is happening at home and in the work environment, the type of disaster was a very important issue for participants.

2 The unspoken

This section sets the context of the environment for emergency nursing. It explores how the environment may change and affect their willingness to attend work if an event/disaster occurred. Much of these changes are unspoken. The participants explored how an event/disaster could change their work environment, how they would respond and what would be expected of them. Unless they had actually experienced or regularly practised responding to a significant event or a disaster, many felt unprepared. This was not necessarily something they would openly discuss at work.

2a Disasters are not talked about

How will the emergency nurse’s role change during a disaster?

Participants felt unsure about what was expected of them in a disaster situation. This was a topic that was not openly discussed by management or between them. No one really talked about it, as identified by this participant:

_It's a bit like organ donation, no-one talks about it and then….it happens. (FG1, p6)_

Participants thought that the risk of having to respond to mass casualties related to an event/disaster should be openly spoken about, especially to new staff—as this participant describes:

_I don't want to stereotype people, but I think a lot of new nurses [to the ED] have come in and don't actually know that they may be up for [about disasters] and have never thought about that. I think they need to be prepared, is this the job for you, is this what you want to do? Yep, like do you know one day you might have to make the decision between you and your family? Do you know one day you might have to come into it? (FG1, p14)_

Participants had thought about the possibility that they may experience a disaster because they worked in an emergency department. This did not necessarily translate into open discussion about what would actually happen and what they would do.

_I don't think anybody that chooses to work in the ED is not prepared in their mind. Like, you don't go to work in the ED and think I'm never going to work in a disaster because you're at the forefront of a hospital for that, so... (FG2, p7)_

... Not that I've actually thought that there will be a disaster, but it is in the back of your mind. (FG2, p7)
Participants acknowledged that a disaster in their own community would require them to respond, if they could, as it was part of their role.

A few participants had some form of experience of receiving mass casualties from a significant event, which had occurred near to where they worked. A significant number had at one time or another been involved in an emergency drill. Participants identified their lack of formal discussion on what could change due to a real disaster in their local environment, and how this could affect their day-to-day work, personal safety and stress levels.

Participants had mixed feelings about whether real disaster experience would make them more willing to go to work in the future. For instance, some thought if it was particularly traumatic, they might want to leave the nursing profession.

> I could only imagine if there was just bodies all over the place [at] work of people who had died. It would be traumatising. [FG 2, p.18]

> Well potentially, like [anonymised participant] was saying, she’s been in a disaster and now she feels worse about it than before…I think preparedness will set you up for being a bit more aware and potentially more likely to opt out. [FG1, p.17]

Others wanted experienced emergency nurses working with them in a disaster.

> … having staff that have actually gone through real training … [FG3, p.4]

Participants saw the role of the emergency nurse on any given day as different from other nursing roles, because of their different work environment. They were the frontline for the hospital.

2b What is a disaster?

There are a number of different codes used within emergency departments, to flag their patient capacity. The codes vary, such as ‘on capacity’, ‘redirect’ and ‘blue’ and ‘brown’ codes. There was a view by participants that in fact if a disaster code was called they would receive more assistance and recognition than on a normal heavy work day. That was close to what they felt was a disaster. Understanding exactly what the situation is and getting the recognition and resources required was identified as an important factor in their consideration of whether or not they were willing to go to work.

Participants gave an example of the flu epidemic as a ‘quiet’ and ‘slow growing’ disaster that did not get recognised at senior level until too late. This was because this event was not a sudden catastrophic event that resulted in a quick surge of casualties. Instead, the workload, as well as staff sick leave, gradually increased beyond capacity yet was not recognised by management or coded as a disaster. These participants discuss this situation:

> ... at one hospital... where they were hit with Swine Flu particularly badly they said, well this is a disaster. It has been going on for five weeks now. But they kept going with it, on and on and on and there were no support systems to put
into place which they would get normally. If it was a bus crash which has a sort of start and stop point … (FG6, p35)

… if it was one with a limited duration, say a bus crash like last [weekday] night - the adrenaline will get you through. … You can see an end to it. (FG6, p35)

That you know - even though it’s not truly defined, it’s not going to be extended... (FG6, p35)

There are types of disasters such as heatwaves, floods and pandemics, which may not be immediately recognised as a disaster. However as time progresses, more of the society’s services are disrupted. By this time, staff who have been at the frontline experiencing the build up and gradual increase in their service demand, may be very tired and fatigued. If management does not recognise the potential of an event to have a longer duration evolving into a disaster, they may not have the staff available to meet the constant and/or increasing patient demand towards the end of that time when services are still very much needed.

Defining what a disaster means, and what kind of support and resources would be provided in a timely manner, is an important factor for emergency nurses.

The next section explores some of the other factors in the environment that emergency nurses would consider to increase or decrease their willingness to go to work. This includes the ‘adrenaline rush’ that they may have from being there, the team they work with, whether or not they have a choice to stay home or go, and how their colleagues would view this decision.

2c Emergency nurses’ current role

It is generally accepted that all nurses, as well as other health professionals, carry a degree of personal risk no matter where they work. This degree of risk is relevant to the context in which they work, including the variety of illnesses patients present with, as well as their behaviour. The speed of patient ‘through-put’ is another factor, as well as the rhythm of the ward or unit’s daily activities, which can be either structured or chaotic. A final factor is how health care staff comes into contact with the public, which may be formal, through referrals and appointments, or informal through emergency attendance. Those that present as emergency cases or in crisis can be unpredictable in both behaviour and in diagnosis.

First line of response

The context emergency nurses work in is normally much more unpredictable in all of the areas mentioned above. They are usually the first line of response to the public for emergency situations and presentations. They are required to manage a very wide range of patient health and behavioural issues, and have little control over the types of patients that arrive in their unit. This unpredictable context is summarised by these participants:

We’re used to thinking on our feet with short notice and little resources and have to operate without structure. We deal with what’s presented to us and can rapidly assess various scenarios that someone who’s worked in say another area, a more stable ward environment or aged care or a different area, may not be able to do. (FG4, p2)
As an emergency nurse we have to be prepared to respond locally to something that might happen. I think emergency nurses are uniquely poised to respond either locally or going somewhere because we’re used to dealing with injured, undiagnosed population. If you look at the other professional populations in the hospital, emergency nurses are at the pointy end. (FG4, p1)

**Normally chaotic and over-stretched**

The majority of the participants described the day-to-day activities of an emergency department as normally chaotic and over-stretched. They reported nearly always working above capacity, and activating ‘redirect’ codes to cope with the demand, even though there may be management/political pressure not to activate these codes.

... we are always busy. You know we could have [number] - well we did one night - have [number] patients in the department at two o'clock in the morning with limited staff, no extra staff, coping with all the ward patients that don't have a bed upstairs… (FG6, p32)

Emergency nurses are used to working in a busy and unpredictable environment.

**Experience high volume casualties**

The majority of the participants identified that emergency nurses are already experienced in preparing and managing a high volume of casualties—though not in the proportion that would occur in a disaster. Part of the preparation of managing higher than expected casualties was delegation of their current patients to other, often less experienced, nursing staff, while they waited for casualties to arrive from an accident/incident. Waiting for casualties, though stressful, was part of the emergency nurses’ normal experience.

Waiting for casualties to arrive is part of the stress of the role and would be similar for a disaster event. This includes allocating work to nurses who are not necessarily emergency department trained, adding further to the stress. (FG6, p22)

What I found hard was waiting.... Waiting and waiting because I knew that I had patients on the floor that had nurses but not ED nurses looking after them. ...I didn't know what was happening on the floor so my mind was kind of in two places. But that happens daily waiting for traumas to come in. Quite often we are waiting half an hour before they come - you've got the whole team and you're all gowned up waiting and people are neglected on the floor. (FG6, p22)

As described above, focus group participants saw a busy, unpredictable and stressful environment as a normal emergency nurse’s day. This demonstrates that a high degree of stamina and resilience is required by emergency nurses to work effectively in this type of environment.

Participants did not consider that there would be much difference to the work environment between a sudden high volume of patients, which they could manage, and a disaster, except for an increase in the number of casualties, duration and the resources required. Other participants indicated that they were unsure of what to expect and had particular concerns about resources and how they would cope with the extra, potentially overwhelming workload.
This next section explores how the environment and role could change in a disaster situation and if this would affect emergency nurses' willingness to go to work.

2d Emergency nurses’ role in a disaster

A mass casualty event/disaster raises the risk level for all health professionals working in emergency departments, with the expectation of individual nurses in a disaster, to go the ‘extra mile’ at the expense of their personal well-being. There could be an even higher than usual personal risk to their occupational health and safety in a disaster.

I think we unwillingly put ourselves at risk everyday sometimes. We don't know when somebody comes with a cough if they've got TB or whatever, or a psych patient is not going to stab us. But if somebody rang me up and said this is really dangerous... we might not know. Someone might be contaminated with something and we come running in ... and you've contaminated everyone and then they're stuck here too. (FG2, p10)

Adrenaline rush

This was about the adrenaline rush, which many said they experienced through the excitement of doing the job. Participants suggested that this was the reason why some emergency nurses keep doing it. The experience of the ‘rush’ is one of the reasons why they would be willing to go to work in a disaster, to be a part of the excitement as expressed by this participant:

I think we're training to do emergency for a reason. So we like a bit of drama, a bit of dilemma, a bit of adrenaline pumping. You know so if there’s something big going on, generally I would say all other things aside, I just want to be a part of it. And sometimes if it's something like the size of say September 11 - like if you knew the whole city was in gridlock, well not seeing my kids for four days would be - that would be the least of my worries. You know what I mean? (FG3, p8)

Mass casualties due to a disaster would test them in every way, and for some the thought of this was exciting and was what they were trained for. There was a view that their medical and ambulance colleagues would echo: this excitement of the moment.

Oh yes, we have a few gung ho staff here… (FG5, p26)

...and the consultants were really excited... and [anonymised participant] was sort of saying you know this is fantastic - this is what we’ve been waiting for the perform storm... (FG6, p14)

The appeal of the adrenaline rush. (FG6, p19)

Participants acknowledged that longer-term disasters, such as pandemics, did not give them the same kind of adrenaline rush, as they were not as exciting as the more immediate disasters. If there were no ‘adrenaline rush’ to be experienced in a pandemic, just the hard slog of constant presentations, there may be no lever to increase their willingness to go to work. They would weigh up all of the other issues, including health risks, and may see few benefits in going the ‘extra mile’. 
... there's a bit of an adrenaline rush too because it's short term. So very short term thing as opposed to last year with the Swine Flu. (FG6, p7)

**Altered standards of care**

Participants recognised that there would be a shift in practice, working differently and accepting altered standards of care, as discussed earlier (1b). This shift in practice could concern not only mass casualties, but also those already in the emergency department. Participants felt very uncomfortable about providing a lesser standard of care to those already present, as resources would be redirected away from them to the other casualties. This group of participants discussed this dilemma:

> I think we can all vouch that we get an uncomfortable feeling when we can't do our job to the best of our ability. So just doing a primary survey goes against everything that we've been taught and against our own principles not to do a secondary. (FG6, p10)

> We have to sometimes step away from everything that we know that we should be doing and prioritise obviously the next patient coming through. I think we find that very difficult to do that - step away from something we know we haven't completed. (FG6, p10)

> I just feel - like you get that gut-wrenching feeling as though you're just not doing what you need to be doing and it's not like you can fix it. It's not like you can go back. (FG6, p12)

**Ethical dilemmas**

One important issue raised by the interview participants was the ethical dilemmas they may experience if they were to triage with altered standards of care. Though they understood what they had to do and why, most expressed a concern that they had not really explored the ethics of this practice and how they would really feel about it. They thought that inclusion of ethical dilemmas would be very valuable in any training scenario. In particular, they wanted an opportunity to explore and discuss the potential scenarios. This would help them to feel more prepared for such a different perspective on life, should the situation ever arise.

**Resources**

The participants reported a number of issues around resources in disasters, including managing and finding space for both the current patients and emergency casualties.

> ... because we had patients that could only get a primary survey done and so were rushed out of the resus room before their secondary survey was done so a lot of them were out before we actually had x-rays. (FG6, p10)

> It's also capacity here as well. I mean, we've got X resus rooms. If you're talking about a disaster and you have to have - not only the resources here but also the capability of the staff as well ... (FG2, p14)

> ... we had the corridors cleared and we had obs vacant and we had the inpatients gone. But because we weren't yet in disaster code there was still people coming through and they still had to have somewhere to go. So we still had to function as a unit as well as create an extra resus room. So we had to
move all equipment into there to make that into a proper resus room.’ (FG6, p10)

Access to resources and supplies influences your confidence to be able to respond.....I think it does yes. (FG6, p28)

Access to space and extra staff with appropriate skills and resources was a concern for most participants. There was a view that they would somehow manage and cope with this change. It would add to their stress level, but would not necessarily be a deterrent to their willingness to attend work.

Already skilled for a disaster response

Any change to the emergency nurse’s role was not seen as a major issue. The participants said that their current experiences would assist in a disaster situation.

We also depend on our experiences and what role we play in an emergency anyway. Whether or not we do management, whether or not we have some experience in disasters. So it will I guess run the gamut from delivering critical work to helping coordinate logistics and resources and people. Basic things like global or mass assessment checks of people on a grander scale than we’re used to. It’s very broad I would think. (FG4, p2)

Well I think we’re actually quite skilled in triaging and that would be an important asset in disaster management. (FG4, p2)

I suppose even with a lack of skill in a disaster you’re always going to come in handy having some emergency skills. Especially with your advanced life support. (FG2, p4)

As well as change to their role, the participants raised the issue of moral duty. They raised questions like what was it that the community, their family, colleagues and management expected of them and would their feelings about moral duty contribute to their willingness to go to work.

2e Moral duty

Unless a nurse had previous experience in either a mass casualty event or disaster, they really did not know what to expect. However, participants thought that there is often an unspoken expectation that they will be there no matter what. This is the ‘invisible line in the job description’ that no one really talks about, as identified by one participant.

A lot of people feel ... morally responsible ... they feel they have a duty this is something that comes as an invisible line in the job description... they feel there’s a duty. (FG4, p7)

Sense of social responsibility

As well as a disaster response not being an issue regularly discussed, many of the nurses acknowledged that there is a public perception that a nurse is dedicated and will always be
there for the patient and community. This includes going that ‘extra mile’ and being pushed over the ‘invisible line in the job description’ by a sense of moral duty to the community.

The idea of social responsibility for the bigger picture. ... I think if you would put it in the context of a local community disaster, that sense of duty really would come into play. You know it’s our community, you want to pitch in and help out. ... local community ... that’s our stuff, our families. (FG4, p8)

There was a range of views expressed by the participants that helped to define their moral duty.

**Emergency nurses are trained**

Participants saw their moral duty coming from both their training as a nurse, as well as the additional skills and knowledge they have as an emergency nurse, as expressed here:

> I think so, you're trained to be a nurse and you're trained to care for people, I suppose yeah all of that would have that instinct to want to go and help. I guess not everyone, but the majority would want to. (FG4, p7)

> Thing is, we're the people in the community that you would hope would have the expertise [Emergency nursing] to respond. So if you're not responding, you're leaving a gap in the response, aren't you? (FG1, p7)

> I'm an emergency nurse; I want to help people (Int8, p9)

**Sense of professional responsibility**

Some saw it as their professional responsibility to be at work, even if there was an increased degree of risk. There were views expressed by participants in the focus groups that they may be legally required to go to work through the regulation legislation. Others thought they had to go—and not because a professional responsibility was embedded in their scope of practice.

> I suppose that goes back to our code of conduct and a code of ethics that we do have a duty of care, whether that be in Australia or international. (FG4, p8)

In either case, if they did not go to work they may have to account for their decision to the nurses and midwives regulation authority.

**Sense of obligation**

Others expressed a strong sense of obligation to go to work. If they were rostered to go to work they just assumed that they would go.

> I feel obliged to do it. (FG1, p7)

> I suppose if a disaster happened at night time and you were rostered on the next morning, I'm assuming that you've got to come, if you know what I mean? Like, if I have an overnight and you're expected to be there in the morning, you've got to come. (FG2, p11)

> ... I feel like I've got that moral responsibility because I'm an employee of this department; that I would have to come in but I wouldn't come in if they couldn't guarantee that my health - or that of my family ... so you have to weigh up...(FG2, p12)
... you’re instilled with a sense of you must work; when you’re a nurse you must turn up to your shift. So if there’s a disaster and they call on you, you feel like you need to turn up ... (Int5, p6)

No matter where the moral sense of responsibility comes from, there was a very strong sense across participants that this would factor very strongly in the decision whether or not they were willing to go to work. Participants recognised that for emergency nurses there is a dilemma, because of the competing moral responsibility between family and work.

As well as moral duty, a number of practical issues were identified that affect the emergency nurse’s role. Workload is the main practical issue raised by most participants. The confusion around how workload is managed was raised with respect to the various codes used to flag patient volume in emergency departments, including escalating to a disaster code.

3 Choices

The focus group and interview participants discussed what would happen if they considered all of the factors, and then chose not to go to work? They explored the reasons why they would make this choice—as discussed earlier (Sections 1, 2 and 3). They also considered whether or not their colleagues would understand if they chose not to go to work. These questions are explored in this section.

3a Making a choice

The decision whether or not an emergency nurse was willing to go to work in a disaster depended on many factors. Focus group participants and all of the interview participants believed that people should be given a choice, based on individual physical, social and psychological issues. It would be a difficult choice to make, particularly in relation to the strong sense of collegiality that an emergency nurse may have. This is illustrated by a participant when weighing up the family’s needs:

Well there’s also the colleagues aspect of it as well. I mean ... that guilt is because I know if I don’t come in, I’m dumping it on my colleagues and that’s terrible. (FG5, p16)

I think it would be a real struggle. I think you know that whole moral or ethical dilemma of you know do you help your colleagues but also that could be you needing the care. You know it’s that whole - where are the boundaries? (FG6, p18)

I would have to really think about it but then feel bad that I have to think about it and not immediately just go in...I’d have that guilt for not being on shift if I chose not to go...That would bug me for a long time post disaster (Int5, p6)
Right to choose

The right for people to choose whether or not to attend work, particularly in a disaster that involved infectious disease, toxic or radiation products, remained extremely strong across all of the participants. As these participants discussed:

You should get a choice. It doesn't matter that we're in this profession, I think you should still be - get a choice to go or not. (FG3, p9)

Yeah, I totally agree with that. Morally I don't think that we should have to be forced into - coming in to work. Because if there was an - just say it was a situation of contamination, to tell you the truth, I probably wouldn't come in. (FG3, p9)

This view was also consistent for their medical colleagues

It's their choice as well. I just don't think it would happen. (FG1, p9)

it would be their choice and then you'd think maybe they couldn't come, maybe they had kids, maybe they're stuck at a building site trying to get whoever out. They would have their reasons and that would be enough for me. (FG1, p.10)

This was explored with the interview participants who echoed the views expressed in the focus groups.

... I think everyone should have the right to make that decision (Int3, p9)

They discussed that they felt it was important that individuals should be able to make a determination about their perception of risk and to then make their decision. That no one should receive retribution for the decision not to go to work. It was acknowledged that whether deciding to go to work or not, the decision-making process would be for many a very difficult and painful one. Those choosing not to go would most likely also have the burden of guilt, about not being with their colleagues.

Make the decision early

Making the choice to stay at work or go was raised across all focus groups. This focus group participant summarises many of the views expressed by other focus groups and talks about the value of having thought it through beforehand and being prepared. The last thing they want was people 'shooting out' and leaving others high and dry at the last moment.

I think it's, as you were saying, I think that's a good thing actually if you are prepared and you know what you're in for. Then, I mean, it's going to kind of get - survival of the fittest, the people who are willing to and would go through and stick it through will, but people that aren't, would have already shot out by then if they knew what they were in for. Because they would shoot out on you on the day. If they're not going to shoot out on you now, they'll shoot out on you on the day (FG1, p18)

Pressure to attend work

There was some discussion about the pressure that may be put on people by management or colleagues if they were rung up, and told that they were needed. There remained a view by
participants that it still very much depended on the type of disaster, as discussed by these participants:

*Depending on what it was. Then I think you can weigh up the risks and make a decision.* (FG2, p12)

*Because we do have a choice at the end of the day if it is an option.* (FG2, p12)

*So I think the only reason I wouldn’t come in is if it was a risk to me.* (FG2, p12)

**Management’s appreciation**

This has been discussed earlier in section 1b, 1f, but was again considered when discussing what factors would influence their choice to go to work or not. Participants considered that a sincere appreciation expressed personally by senior staff and management, for giving more than what was normally required, was important to them. This appreciation would go a long way to persuade them to go into work if they were called.

*But even just the appreciation - like I don't think we get much appreciation. … So if I went out of my way and was called in, I would expect some kind of gratitude of some kind.* (FG3, p26)

‘Appreciation’ did not consist of extra financial remuneration—which was not expected by the participants across all focus groups. This was further explored with interview participants. Remuneration for actual time on duty was considered very appropriate and expected. This could be in the form of overtime payments or time off in lieu of the extra time worked.

**Choice to leave work**

Participants considered that those emergency nurses who might be caught at work when a sudden event occurred may still have wanted the opportunity to have a choice about whether or not they could go home. Although, as discussed earlier, it was a choice that should be made fairly quickly so that the team knew exactly what resources they had.

*I would like to see though - the institution if you’re at work - they would support you in leaving work to go back home to your family. You know it works both ways. So they ask you to come in. But if you were at work during that time, you would hope they'd be understanding enough to let you go home as well.* (FG3, p25)

However, some thought that this might be difficult, as expressed here:

*I guess right now we kind of have no choice. If suddenly there was a disaster and we were here and the patients started rolling in, I'm not going to go, alright, see you later’ (FG3, p25)*

*You might think, I don't want to be here or I want to get out, or stuff that, I'm not going to blah, blah. But you'd just do it’ (FG5, p33)*

This was about getting on with it or making the most of the situation. Some emergency nurses thought that they might be in a situation where they saw that the choice was made for them. This was because they were already at work and could see that they were needed.


**Discussion**

The aim of this research was to explore the willingness of Australian emergency nurses to respond to a disaster, in particular one that involves a higher risk to their health. Nurses have played a significant role in disaster history (Grimes & Mendias, 2010) and, as the largest sector of the health care workforce (Considine & Mitchell, 2008; Grimes & Mendias, 2010; Veenema, Walden, Feinstein, & Williams, 2008), will continue to do so. As frontline responders, emergency nurses play a vital role in the hospital response to a disaster (Hammad, et al., 2011). Absenteeism among this group of nurses during a disaster would have a significant impact on the healthcare response to a disaster.

The study explores Australian emergency nurses’ preparedness to respond to a disaster in terms of the amount of education they have received, their knowledge of disaster response and professional and home responsibilities; as well as the willingness of Australian emergency nurses to respond to a disaster in terms of their professional and personal responsibilities. Furthermore, the study asks what Australian emergency nurses believe would improve their preparedness and willingness to respond to a disaster; and lastly, the effect *willingness* has on the capacity of the nursing workforce to respond to disasters.

An exploration of these issues is important to emergency nurses when they are placed in a position where they need to assess their willingness to attend work or not. This is in the context of a natural or man-made event/disaster where there are mass casualties and changes to some degree to society’s ability to function. Such changes to society may result in loss of power, water, closing of schools, transport restrictions, and increased risks to public safety which could impact on emergency nurses’ lives in both their work and home environments. No matter what the situation is, the event will result in some form of additional risk and stress to the emergency nurse and this will affect their willingness to work.

**The extent to which Australian emergency nurses are prepared and willing to respond to a disaster**

In this study, the Australian emergency nurses' preparedness and willingness to respond to a health-related disaster depended on a number of risks and interrelated issues related to both the home and workplace environment on any given day. For any natural disaster, there was little question that nurses would be there if they were able to get to work. The correlation of responses from the survey showed that the odds of emergency nurses being willing to attend work in transport and or natural disasters was 23.9 times higher than the odds of being willing to attend work in terrorist, pandemic and CBR events. Similarly, participants who reported family disaster preparedness were more willing to respond across all disaster types examined, yet, willingness was highest for transport and natural disasters. Analysis of the survey showed that the odds of emergency nurses who stated that they have more prepared families being willing to attend work in transport/natural disasters was 25.6 times higher than the odds of being willing to attend work in terrorist, pandemic CBR events.
These results are consistent with the findings in the literature related to HCWs in that there appears to be a higher willingness to work during 'conventional events' (natural disasters, building collapses, mass casualty events) than 'non-conventional events' (pandemics, CBR disasters) (Cone D C & Cummings B A, 2006; Hope, et al., 2010; Masterson L, Steffen C, Brin M, Kordick M F, & S, 2009; Qureshi K et al., 2005; Smith, et al., 2009). Smith et al. (2009) suggest that this may be because conventional disasters are more localised and visible, whereas non-conventional disasters are not. This makes it difficult to accurately assess risks and consequently increases the perception of risk. A disaster that involved toxic waste or infectious disease would require further consideration of a number of risks. These risks, reported in previous studies, include risks to self, family and community (Rebmann, 2009; Smith, et al., 2009). These risks will be weighed up against nurses’ moral obligation to the public and to their colleagues, and the preparedness, quality and trust of the administrative, nursing and medical leadership at work. The assessment of how these risks affect their willingness and preparedness to respond for emergency nurses as they consider all of the issues can become a battleground of emotional turmoil. Do they stay home with family or do they go to work? As stated by one participant, ‘It would tear at the heart’. There are additional stressors which come from a range of factors in both the work and home environment.

Participants thought that they had some form of obligation or moral responsibility to be at work during a disaster, but this was not unconditional. In the survey, in regards to the opinion statement ‘A professional nurse has a responsibility to work under any circumstances’, 58.5% of respondents agreed (n=248), while a significant proportion, 41.5% disagreed (n=176). In the focus groups and interviews, where issues and consequences were explored more deeply, support for a moral obligation to work seemed stronger than the figures from the survey suggest. However, it was still clear that some participants would consider their personal and family risks first. These particular risks could outweigh their feelings of obligation and reduce the extent to which they felt obliged to go to work.

This strong sense of professional duty as it appears in the literature to exist among HCWs worldwide (Cowden J, Crane L, Lezotte D, Glover J, & Nyquist A-C, 2010; Ehrenstein B P, Hanses F, & Salzerberger B, 2006; Grimes & Mendias, 2010; Ives J et al., 2009; Ives, et al., 2009; Masterson L, et al., 2009; Seale H, Lesak J, Po K, & MacIntyre C R, 2009; Tzeng, 2004) where many HCWs recognise that they have a professional duty to treat patients despite the risk to themselves.

These findings raise important legal, ethical and moral questions and issues that HCWs have to face when considering working during a disaster. A number of authors have discussed whether there is a professional obligation for HCWs to work in disasters. Ruderman et al., in Canada, have argued that these rights and responsibilities ought to be codified in professional codes of ethics, particularly after the challenging conditions of the SARS outbreak, with high rates of infection among HCWs (2006). In the Australian context, focusing on paramedics and disasters, Smith et al. (2010) calls for transparency and clarity around ‘duty to care’ and ‘duty to respond’ (p.46). With regard to Australian nurses, the Australian Nursing & Midwifery Council (2008) stress the key role of nurses in national emergencies, but concludes that participation has to be a personal decision, involving ‘weighing their personal circumstances against the risks involved: their obligation to protect themselves as well as to provide care to others’ (p.2).
In the focus groups and interviews conducted as part of this study, discussion about the obligation to work included a perceived pressure from the public by emergency nurses around the expectations of what a nurse will and won’t do for them. In particular, a view was expressed by participants that emergency nurses will be expected to be there for the public no matter what the situation is. This view is supported by research on the general public in Canada, in which approximately 90% of people surveyed supported the obligation of health HCWs to go to work and face risks in a pandemic, unless they had a ‘serious health condition’ that increased their risks (Ritvo et al., 2010). Most participants expressed a view that they will be there for the community, but only to a point. If they or their families were going to be at significant risk of harm then they would weigh up the situation to determine the extent of their willingness to go to work, as one participant stated: ‘I think you’d triage it in your mind, wouldn’t you?.

Australian emergency nurses’ preparedness to respond to a disaster in terms of the amount of education received, their knowledge of disaster responses and professional and home responsibilities

This research identifies that there are degrees of preparedness by which emergency nurses would respond during a health-related disaster. These degrees of preparedness are influenced by their years of experience in emergency nursing, as well as having opportunities to practice the disaster plan, and having further disaster qualifications. Though many indicated that they did not have a hospital disaster plan or had not been involved in a mock disaster scenario, the significant majority felt prepared and understood that there would be some change to their role during a disaster. In particular, there was a focus among the participants on the different approach to triage and changes to work practices.

The relationship between emergency nursing experience and preparedness has an important effect on the willingness to respond. Experienced emergency nurses appeared to be aware of the hospital disaster plan and had been involved in either exercises or real situations. There were, however, a significant number of nurses who were relatively new to emergency nursing practice that were unsure of whether their hospital had a disaster plan. The findings from this study support the view that a lack of confidence, as well as experience in one’s skills and knowledge in responding to a disaster, is a reason for HCWs not to work during a disaster (Balicer, Omer, Barnett, & Everly, 2006; Hope et al., 2010).

Those that felt less prepared had not had an opportunity to be involved in disaster drills and exercises, nor had they had the opportunity to discuss what would happen and what was expected of them. Having a disaster plan in the workplace, knowing about it and having practised it was an important consideration in their decision to go to work. This particular point was explored in the interviews and focus group findings, affirming that the chance to practice a disaster plan regularly increased their feeling of being more confident in themselves. In particular, this would assure that they knew what their role would be, so they would not let the team down. This is congruent with other studies where willingness is influenced by the perceived level of hospital preparedness (Seale H, et al., 2009). Seale et al. (2009) suggest that lack of confidence in hospital preparedness may either be because the hospital has not made
adequate plans, or because staff is not aware of plans that have been made. In a study of the willingness of paediatric nurses to respond in disasters, Goodhue et al. (2011) identified having an assigned role in the workplace disaster plan as the most significant factor associated with willingness.

The literature identified that HCWs require specific appropriate knowledge so that they can make informed decisions about working during disasters. A lack of knowledge on disasters (Duong, 2009) —and pandemics in particular—(Watt, et al., 2010) has been identified in emergency HCWs in Australia, with negative implications for disaster preparedness. There is discussion in the literature related to what type of information HCWs need. In regard to pandemic response, knowledge about disease pathogens, risk of infection, prevention and treatment may increase HCW willingness to work (Grimes & Mendias, 2010; Irvin, Cindrich, Patterson, & Southall, 2008).

At 37% (n=235), education and training courses were identified by survey participants as the highest priority to increase their willingness to attend work in a disaster. This study also found that nurses with disaster qualifications are more willing to work in the ED during a disaster. Disaster qualifications, for instance, disaster management qualifications, were held by 48.2% (n=217) of respondents. In logistic regression, nurses who held a disaster-related qualification were over two times more likely to respond to a disaster than those who did not hold disaster-related qualifications. In contrast, undertaking a course related to disaster response was reported by 85.1% (n=384) of respondents. Participants who undertook a disaster-related course were no more likely to be willing to respond to a disaster than those who did not undertake such courses. This indicates that emergency nurses who studied disasters to a degree of depth feel more willing to attend work, with no effect on nurses who have undertaken a short course, such as hospital-based training.

Within the home environment 72.9% (n=317) of participants reported that they didn’t have an emergency plan for themselves and their families. Therefore, many were not prepared for responding to a disaster from their own personal and family perspective. After adjusting for correlation within subjects, nurses with an emergency plan were almost eight times more likely to be willing to respond to a disaster. This is consistent with the literature, that nurses who have higher personal preparedness for instance through having a home disaster plan—have correspondingly higher levels of willingness to respond (Goodhue, et al., 2011; Qureshi, et al., 2005). The importance of personal preparedness as a means to increase willingness is important for hospital administrators to note.

The willingness of Australian emergency nurses to respond to a disaster in terms of their professional and personal responsibilities

There was a very strong view expressed by participants that their willingness would depend on a range of factors that they would need to consider and weigh up on the day. Willingness to respond to a disaster cannot be something that is planned, because there are so many different factors that change in people’s lives all the time. This study of emergency nurses has confirmed previous findings that willingness of HCWs to work during a disaster is multidimensional,
affected by many competing factors. Previous literature has identified that there are a number of factors that impact on HCWs' willingness to respond to disasters. The factors that this research supports are:

- **Type of event** (Cone & Cummings, 2006; Considine & Mitchell, 2008; Grimes & Mendias, 2010; Hope et al., 2010; Koh et al., 2005; Masterson et al., 2009; Qureshi et al., 2005; Smith et al., 2009; Watt et al., 2010),
- **Personal safety** (Cone & Cummings 2006; Cowden et al., 2010; Damery et al., 2009; Ehrenstein et al., 2006; Irvin et al., 2008; Koh et al., 2005; Masterson, et al., 2009; Ruderman et al., 2006; Seale et al., 2009),
- **Family and pet safety** (Balicer et al., 2006; Barnett et al., 2009; Considine & Mitchell, 2008; Cowden et al., 2010; Damery et al., 2009; Garrett et al., 2009; Imai et al., 2010; Ives et al., 2009; Martinese et al., 2009; Qureshi et al., 2005; Seale et al., 2009; Smith et al., 2009; Tippett et al., 2010; Watt et al., 2010; Young & Persell, 2004),
- **Professional duty** (Considine & Mitchell, 2008; Cowden et al., 2010; Imai et al., 2010; Ives et al., 2009; Masterson et al., 2009; Seale et al., 2009; Smith et al., 2009),
- **Previous experience** (Grimes & Mendias, 2010),
- **Trust in the employer** (Imai et al., 2010; Seale et al., 2009; Smith et al., 2009; Tippett et al., 2010),
- **Ability** (Damery et al., 2009; Ives et al., 2009; Martinese et al., 2009; Quresh, et al., 2005),
- **Psychological supports** (Balicer et al., 2006; Ives, et al., 2009; O'Boyle, Robertson, & Secor-Turner, 2006), and
- **Knowledge** (Balicer, et al., 2006; Grimes & Mendias, 2010; Hope et al., 2010; Imai et al., 2010; Irvin, Cindrich, Patterson & Southall, 2008; Ives et al., 2009; Mitani, Kuboyama, & Shirakawa, 2003; Seale et al., 2009).

Other factors explored in this study provided a different view: these include age, gender, and family responsibilities. This study also examined a number of lesser known factors such as volunteering, leadership in the workplace and collegiality.

In this study, age was not a barrier to willingness. However, the highest percentage of unwilling respondents was the age-group 60-69 at 22.2% (n=10). This may be related to their level of physical wellness. Responding to a disaster in a changed environment with additional risks may place those with chronic health issues at more risk of personal harm, and therefore make them less willing to put themselves at risk. There is also the aspect of not wanting to be a burden to their team if they are not able to perform at the same level as their colleagues at a time of exceptional stress and increased patient demand. Those with chronic health issues or those who were looking after family members with a disability were overwhelmingly supported to weigh up these additional risks and personal demands against their willingness to attend work. These issues were seen by their colleagues as genuine and legitimate reasons not to come to work.

Moreover, gender did not play a significant role in the willingness to attend work. This study did not support previous research that identified male HCWs to be more willing to attend than female HCWs (Butsashvili et al., 2007; Cowden et al., 2010; Damery et al., 2009; Grimes & Mendias, 2010; Imai et al., 2010; Masterson et al., 2009; Qureshi et al., 2005), with women often responsible for care-giving of children and elders (Butsashvili et al., 2007). There was no significant difference in gender and willingness to respond to a disaster from this study's research participants. The focus groups and interviews did not shed any further light on this discussion, except that both genders considered equally their risks and responsibilities to themselves, their families, and for some male nurses their property and community needs before those of work.
The only group related to gender that was identified as ‘not advised to attend work’ are women who are pregnant or have small children at home. This study supported previous research (Cowden et al., 2010; Damery et al., 2009; Grimes & Mendias, 2010; Ives et al., 2009; Ives et al., 2009; Masterson et al., 2009) that HCWs with children would be the least willing to work during a disaster, with independent nurses being the most willing. In regards to the children’s ages, nurses with children under 5 were 81.9% less likely to respond to emergency disasters than nurses without children under 5. When hours of employment were examined, there was a significant association between the number of hours worked and willingness to respond, with those working more than 0.5 FTE 3.8 times more likely, and those working full-time 4.8 times more likely to be willing than those working part-time. This may be related to the increased likelihood of emergency nurses with young children working low part-time hours. This concurs with previous research in which nurses who work part time were less likely to work during a disaster than those who work full-time (Damery et al., 2009; Martinese et al., 2009).

The issue of willingness to respond by an emergency nurse whose partner may also have a position that required their presence at work during an emergency, such as another emergency nurse, police officer or fire-fighter, was explored. It was considered that this might prevent one of the partners from responding, especially if there were children to be cared for. The issue of partners having an emergency responsibility has been raised in previous research (Dimaggio et al., 2005; Qureshi et al., 2005; Watt et al., 2010). Although in this survey there is no statistical significance in willingness to respond between emergency nurses whose partner has a disaster responsibility and those whose partner would not be involved in a disaster response. This issue was raised in focus groups and interviews. Those participants in this situation identified that they had thought about this scenario and what they would do, and that once again it would ‘depend on the day’. This reflected the same factors as what type of disaster it was, family commitments, family supports, as well as which job was most needed by the community. These would all be considered, risks would be assessed and then a decision would be made as to who stays and who goes. This concurs with the finding in Qureshi et al. (2005) that HCWs married to another ‘first responder’ are more able and more willing to report for duty in disasters, quite possibly because these households are more aware of the need for personal emergency planning (2005, p.383).

Volunteers play an important role in responding to the emergency needs of the community during times of significant events such as floods and bushfires, particularly in rural areas. The study examined the role of volunteering in emergency services to see if the responsibility of volunteering had any relationship to an emergency nurse’s willingness to go to work. The potential of conflict between dual or multiple emergency response obligations has been raised in previous studies (Cone & Cummings, 2006; Davidson et al., 2009), and found in one by 14% of essential workers to be a barrier to working in pandemics (Gershon et al., 2010). Throughout this survey there was no significant difference in the willingness of respondents with volunteer responsibilities to respond to a disaster than nurses who were not involved in volunteer responsibilities. This was explored further with participants identifying that there may be times if their own local community was in danger, that they may decide that they could be more effective in assisting with their local fire service, rather than going in to work, but again, this very
much depended on what the risks were to themselves, their home and their community. Once again, the decision would not be made until they were put in the position to have to decide.

**What do Australian emergency nurses believe would improve their preparedness and willingness to respond to a disaster?**

A number of factors were identified that would improve the preparedness and willingness of emergency nurses to respond to a disaster. These include improved knowledge and skills, having a plan in place, leadership of the department/unit, a positive work culture and trust in management and colleagues. Also in the Australian context, Smith et al. (2009) find that the willingness of paramedics to respond to a public health emergency is affected by similar primary concerns such as health and safety, communication issues, accurate information and training and education.

Almost three-quarters (73.4%, n=331) of survey respondents agreed with the statement ‘My work environment supports working in health-care disasters’, while 26% did not (n=116). There was no significant difference in willingness to respond to a disaster of respondents who reported a supportive environment and those who did not report a supportive environment. However, in the focus groups and interviews, emergency nurses’ confidence in management’s support and preparedness to respond in a disaster situation was very important, particularly in disasters with a higher risk to self and family (terrorist, pandemic and CBR events). Emergency nurses need to feel confident that those in management would not put them at risk and that managers would also be at work and visible in the department. As well as the regular presence of senior management, participants discussed feeling more confident when they saw police and other emergency service personnel working with their senior staff. This helped to provide the workplace environment with a sense of control and reassurance.

Another important factor in influencing willingness in all stages of the study was the reassurance needed by management staff that they would provide the right support and equipment to enable the emergency nurses to keep safe while performing their role. Improvements to PPE was the second highest priority of nurses to increase their willingness to attend work in a disaster, at 25% (n=161), after education/training courses at 37% (n=235). Ives et al. identify a similar theme in a qualitative study, finding that one of the most significant barriers to HCWs' willingness to work in pandemics is the belief of a lack of reciprocity between HCWs and their employers, including insufficient PPE and little guidance in disaster situations (2009). The importance of sufficient PPE to willingness is a common theme in the literature (Shaw, Chilcott, Hansen, & Winzenberg, 2006; Tippett et al., 2010), while Considine and Mitchell's (2008) survey of emergency nurses found that many were willing to work in disasters despite limitations with PPE.

Not only was the availability of equipment important to emergency nurses, but also the availability and quality of communication. This is primarily concerns two issues; first, the information emergency nurses received from the employer must be frequent, timely and accurate. In particular, they wanted accurate information that they would use to assess their personal safety. This has also emerged in the literature, particularly relating to the need for
accurate information in the workplace on pandemics and infection control (Ives et al., 2009), often in contrast to mis-information from the media (Irvin et al., 2008; Iserson et al., 2008). The second issue is the ability for the nurses to be able to contact their family and friends from work. This was also identified by Cone and Cummings (2006), particularly in relation to hospital staff staying at work in a disaster for a prolonged period. In the focus groups and interviews of this study, it was very important for the nurses to be able to communicate how they are, how much longer they expected to be at work, and to debrief if they needed to. They did not want their family to be worrying about them. They also wanted to hear that their family, friends and pets were all right. It is very important to the willingness of emergency nurses that management enables and facilitates communication with and for them on a regular basis during the event; that is, if the telecommunication systems are available for this to happen.

Confidence in management personnel’s communication and information was an important factor to the participants’ willingness to go to work, as was consistency across the senior clinical nurses’ information, and positive attitudes. The potential lack of consistent clinical opinion related to risk and safety precautions were issues of concern, especially for nurses fairly new to the role. Senior and more experienced nursing staff was identified as one of the main groups the other nurses would look to in times of uncertainty. The less experienced emergency nurses indicated that they would watch and observe this group’s behaviour and attitudes, because they relied on their judgment to indicate any cause for concern or anxiety. The strength of the senior nurses’ leadership is significant in contributing to the emergency nurses’ willingness to go or stay at work through extended periods of time and high stress. In a study on emergency physicians’ disaster responses, Iserson et al. (2008) called this type of effect ‘behavior modeling’, a type of risk communication which involved senior doctors providing leadership to others (p.350).

The quality of the team members who would be there with the participants in a disaster response, and a positive sense of professional collegiality were two other considerations for willingness to attend work. The preparation of the team as a whole was also considered. As one participant said when discussing their confidence in responding to a mass casualty event, ‘I was [confident] because of the team I was with’.

The supportive behaviour of colleagues was a fairly important mediator on how the emergency nurses would behave and how prepared and willing they would be. This includes supportive behaviour of management personnel, senior staff and colleagues. Supportive behaviour included: a regular presence in the emergency unit by senior staff and management; their genuine acknowledgement of the extra stress staff are experiencing; good communication with staff about the unfolding situation; as well as trying to provide adequate resources. The support and confidence in medical staff and senior management was clearly important. They did not want to feel left alone to take the brunt of the stress caused by the mass casualties and disaster. In a study on hospital workers’ willingness to work in fire disasters, Davidson et al. identified a similar theme of ‘a caring culture’, which involved a perception of support by the direct supervisor, colleagues and the organisation (2009, p.252).

The sense of ‘team’ and the degree of collegiality are factors to the participant’s sense of willingness to be at work in a disaster. The stronger the workplace culture is in building a
positive team environment and sense of collegiality, the more willing emergency nurses would be to go to work. This particularly applies to the ‘less exciting’ types of disasters, which unfold slowly, such as pandemics, where there were even greater health risks.

Being prepared as a team to respond to a disaster was seen as part of the opportunity to build a team culture, thereby adding to the feeling of collegiality and support. It would also help build individuals’ confidence in their knowledge of what is expected of them within the team and what they would do together. This includes opportunities to undertake disaster training and mock drills together on a regular basis, a factor highlighted by participants as an important one in helping to develop a team approach and build staff confidence in their ability to respond to a disaster. The thought that everyone in the team would know what to do gives emergency nurses a stronger sense of confidence, especially for newer emergency nurses. If emergency nurses perceive that their employers, managers, medical & allied health staff, unit/ward staff and nursing colleagues are more prepared, the emergency nurses will be more willing to work in the ED during a disaster.

In the survey, the opinion statement ‘I have a right to say “no” to exposing myself and my family/dependents to risk’ was approved by 67.4% of respondents (n=300) and disputed by 32.6% (n=145). Once again, the picture varied in focus groups and interviews, where issues were explored more fully. Here there was no consideration of retribution for their colleagues if they chose not to go to work. It was recognised that the contributing factors towards willingness varied between individuals and depended on their family and personal needs. This was respected. There remained however, a feeling that if they did not go then they would be letting their colleagues down. The sense of collegiality was very strong and would play an important part when considering willingness to attend work. Iserson et al. also identified the importance of teamwork for emergency service personnel in disasters: ‘They may also ignore or downplay some risks because of group camaraderie, that is, a sense of loyalty and mutual regard when carrying out a difficult task together’ (2008, p.349).

Incentives to go to work outside of ensuring protective equipment, providing ongoing communication with their families, access to somewhere to sleep, a shower, psychological support and opportunities for training were not expected by Australian emergency nurses. They expected to be paid for any overtime they did, but did not expect any other financial incentives to increase their willingness to go to work. Additional incentives suggested in the literature to increase HCW willingness to work in disasters have included; financial compensation, extra leave, antiviral treatment or prophylaxis for staff and family, and death and disability insurance (Cowden et al., 2010; Garrett, Park, & Redlener, 2009; Imai et al., 2010; Irvin et al., 2008; Martinese, Keijzers, Grant, & Lind, 2009; Masterson et al., 2009).

**What effect does willingness have on the nursing workforce’s capacity to respond to disasters?**

As frontline responders, emergency nurses play a vital role in the hospital response to a disaster (Hammad et al 2010). *Willingness* has a strong effect on emergency nurses’ decision to go to work or not during a disaster. In fact, willingness is the most important factor, alongside preparedness and ability to ‘get to work’. Emergency nurses may be well prepared at home and
work, and able to reach work, but when weighing up all the other factors that influence their personal risk and that of their family, in the end they may decide that they are not willing to go. The factors that strongly influence willingness include the nature of the disaster, lack of education, preparation and clinical confidence in working within a disaster plan, lack of confidence in leadership in the workplace, sense of collegiality, uncertainty about the availability and quality of safety equipment, and that communication systems are in place to ensure both timely and accurate information, as well as the ability to ring home on a regular basis to reassure their family and to check that they are alright.

Others have described the decision-making process in reporting to work in disasters as a continuum of preference with ‘increasingly difficult choices in the middle’ (Ives, et al., 2009, p.11) or a complex calculation on the consequences of their choice for themselves, their families, patients and colleagues (Iserson et al., 2008). In our study, responding to a natural disaster seemed to be quite an easy decision to make. Responding to disasters such as pandemics, toxic waste and terrorism would remain a very difficult and complex process of decision making as emergency nurses weighed up all of the factors to determine just how willing they are.
Model

The willingness of an emergency nurse to attend work in a disaster

Not willing
Willing but not able to get to work
Willing to go to work

Assessment of preparedness at home, work and professionally
Influence
Influence
Assessment of degree of risk: self, family, community

Workplace

Disaster event

Willingness of an emergency nurse to go to work is influenced by the type of disaster. The type of disaster will determine the degree of risk to self, family and community. Willingness can be influenced by increasing the feeling of preparedness to respond to a disaster and manage the risks at home, work and professionally. By increasing preparedness the emergency nurse will then feel more confident in their own and their family's safety, their work environment and their professional ability to respond and therefore more willing to go to work, if they are able to get there.
**Limitations**

**Quantitative**

This survey was distributed through the two Australian emergency nursing colleges. It could be argued that emergency nurses who are members of these colleges may be a subset of the emergency nursing population; such as academics, managers and experienced clinicians. Whereas newly registered nurses and nurses with minimal emergency department experience may not have membership in these colleges. As such, this may influence the ability to generalise the research findings to the broader emergency nursing population in Australia.

Additionally, the survey was promoted in four emergency departments, where some of the researchers held clinical or research-type roles. It could be argued that the culture in these emergency departments to participate in research may differ from emergency departments where research positions and research influence is not visible.

Although a survey response of 451 was perceived as being excellent, this highlights the fact that many emergency nurses did not participate in the survey. Therefore the views and opinions regarding willingness may well differ in this unknown sample of non-responders.

In terms of research method limitations, it may have been of benefit to have undertaken the focus group and interview phases of the research project prior to the survey phase; given that the focus groups and interviews provided information and detail that could have been explored in more detail in the wider emergency nursing population. Further to this, the survey could have been repeated after the focus groups and interviews, to test the conclusions in a wider forum.

**Qualitative**

Although focus groups provide an opportunity to discuss a topic in a semi-social environment, they have a number of limitations. Throughout the focus group session, some participants may have felt that they had to provide ‘socially acceptable’ answers, and therefore refrained from providing details to answers that may have deviated from the social norm. In addition to this, a small number of focus group participants may have dominated the focus group session and therefore influenced the direction of the discussion.

Focus groups and interviews were held at four clinical institutions across Australia. A different interviewer facilitated the focus group and interview sessions for each of these institutions. It could be argued that this may have resulted in some inconsistency regarding the direction of the discussions. In terms of the participants of this research phase, some of the participants may have volunteered to attend because they ‘had something to say’, whereas those who did not attend the sessions may have had a quite different perspective or opinion about ‘the willingness of emergency nurses to assist in a disaster’.

The interviewers implemented strategies, such as directing questioning to quieter individuals and asking confirmatory-type questions of the entire focus group; however, domination of some participants and only making ‘socially acceptable’ remarks may have still occurred.
Conclusions and recommendations

As frontline responders to a disaster, absenteeism among emergency nurses will have a significant impact on the ability of the health system to effectively function at such a critical time. Therefore an understanding of emergency nurses’ willingness to ‘go to work’ during disasters is essential for managers of emergency services for ensuring effective workforce planning.

Generally, there is a high willingness to work by emergency nurses during conventional events (such as natural disasters, building collapses, mass casualty events)—that is, if they are able to get to work then they will. However, a disaster that involves toxic waste or an infectious disease would require further consideration since it involves a number of additional risks.

Willingness to go to work or not during a disaster is not a straightforward linear process of decision-making. The decision making is made up of a number of complex personal, work-related and professional factors that can change, depending on the context of the disaster and the emergency nurses’ responsibilities at that time.

There was not a consistent level of preparedness for a disaster event across Australian emergency nurses. The more experienced the emergency nurse, the more likely they were to have considered their preparedness, to some degree, should a disaster event occur. The emergency nurse new to this practice environment was less likely to be prepared at home, work and professionally. The preparedness of families to manage on their own during a period of environmental uncertainty is important, because the emergency nurse may be required to stay at work, or be unable to get home.

Willingness of an emergency nurse to go to work is influenced by the type of disaster. The type of disaster will determine the degree of risk to self, family and community. Willingness can be influenced by increasing the feeling of preparedness to respond to a disaster and manage the risks at home, at work and professionally. By increasing preparedness the emergency nurse will then feel more confident in their own and their families’ safety, their work environment and their professional ability to respond, and therefore be more willing to go to work, provided they are able to get there.

This study has shown that there are a number of things that management can do to influence and increase the willingness of nurses to attend work. These are outlined in the recommendations below:

- Include disaster response information and discussion in the induction period for new emergency nursing staff to ensure that they know where the unit's disaster plan is, what safety equipment is available and how to use it, and what is expected of them in their role. This should include their understanding of emergency management concepts of 'command and control', changes to triage and altered standards of care.
• The development of a training package that can be used by emergency nurses to explore, discuss and consider the ethical and legal issues related to altered standards of care at times of reduced human and material resources.

• The disaster plan should include the following: consideration of effective communication strategies to staff, as well as the communication options available for staff to keep in contact with their families on a regular basis; options available for child, other dependents and pet care if staff are required to work longer hours or are not able to get home; clear expectations of the senior clinical and administrative staff to ensure a presence in the health service during the peak periods of extra stress.

• Promote and support emergency nurses undertaking postgraduate education in disaster management.

• The development of a preparedness tool that emergency nurses can use to assess their own and their families’ preparedness at home should an event occur. Issues for consideration could include: carer needs for children, family members and pets; access to money, any medication the emergency nurse may need to take for their chronic medical conditions; consideration of obligations to the community for emergency nurses who also volunteer in emergency services; planning for emergency nurses when their spouse also has workplace and/or volunteer emergency responsibilities.

• It is also important to recognise the need for leadership of senior staff ‘on the floor’, as well as a positive team culture, to enhance the willingness of nurses to attend work and their confidence in disasters.

• More research is required to understand the subtleties of the factors in the workplace environment that can influence willingness to go to work during a disaster. This will help inform managers of the many aspects they can influence to increase the likelihood of staff attending work at a time of crisis.
References


Challen, K. (2009). Life or death decisions: Kirsty Challen reminds emergency nurses that they may have to make vital decisions about patients who present to emergency care settings during the flu pandemic. *Emergency Nurse*, 17(4), 12-15.


Tzeng, H.-M. (2004). Nurses’ professional care obligations and their attitudes towards SARS infection control measures in Taiwan during and after the 2003 epidemic *Nursing Ethics*, 11(3), 277-289


Appendices

Publicity for online survey

Are you a Nurse working in an Emergency Department?

With recent news of the earthquakes in Chile and Haiti and bushfires in Victoria last year, pandemics and terrorist events on the rise, the need for emergency nurses to work in disasters has come to the forefront.

We are interested in questions like these to give feedback to hospitals and governments for better disaster planning.

We would like to hear about your views on Emergency Nurses - willingness to respond to a health care disaster. We would like to hear about your views on Emergency Nurses - willingness to respond to a health care disaster.

This will take just 10 minutes of your time.

Note: If you have already completed this survey at your hospital (sites listed below), please do not fill it out again.

Flinders University School of Nursing & Midwifery (Population Health) is conducting a research study into this topic in conjunction with researchers from Griffith University and Deakin University. Follow up focus groups and interviews will be held in four hospital Emergency Departments, the Royal Adelaide Hospital in South Australia, Calvary Health Care in the ACT, the Princess Alexandra Hospital in Queensland and Northern Health in Victoria.

Please fill out the survey at: nursing.flinders.edu.au/surveys/willingness
Questionnaire

Survey - the Willingness of Emergency Nurses to Respond to Disasters

Dear Colleagues,

Please complete this questionnaire if you are an Emergency Nurse who is currently working.

This survey is the first phase of a project on "Understanding the willingness of emergency nurses to respond to a health care disaster", which is at Northern Health in Victoria, the Princess Alexandra Hospital in Qld, the Royal Adelaide Hospital in SA and Calvary Health Care in the ACT.

This questionnaire aims to collect emergency nurses' opinions of their willingness to work in the case of disaster health events, such as pandemics, biological, chemical or radiation emergencies and other natural and man-made disasters, in Australia.

Filling out the questionnaire is voluntary and we appreciate your contribution. Completing this questionnaire will take approximately 10 minutes.

Note: If you have already completed this survey online, please do not fill it out again.

There are five sections in this questionnaire. Please follow the instructions and answer as many of the questions as you can.

Thank you.

★★★ Section 1: Demographic information ★★★

The following questions will help us to understand if, and how, these factors influence your willingness to respond to health care disasters.

1. What is your age?
   - 0 0
   - 1 1
   - 2 2
   - 3 3
   - 4 4
   - 5 5
   - 6 6
   - 7 7
   - 8 8
   - 9 9

2. What is your gender?
   - Male
   - Female

3. Do you speak a language other than English at home?
   - Yes
   - No

4. What ethnicity do you identify with?
   You can select more than one option.
   - Australian
   - Aboriginal and/or Torres Strait Islander
   - European
   - British
   - New Zealander
   - North Asian
   - South Asian
   - Indian
   - Middle Eastern
   - North American
   - South American
   - African
   - Other - Please state

Answer Selection: Correct = ✔ Incorrect = ✗
5. Who do you live with?
Please fill in all that are applicable.

- Live alone - Please go to Q10.
- Partner/Spouse
- Child/children
- Older family member/s - 65 & over/Aboriginal and TSI - 45 & over, ie. Parent, grandparent, aunt, other extended family
- Younger family member/s - under 65/Aboriginal and TSI - under 45, ie. Parent, grandparent, sibling, other extended family
- Housemate/s/Friend/s

6. Would any of the persons you live with be required to respond to a health care disaster?
Please fill in all that are applicable.

- Yes, responding as a paid worker - please go to Q7.
- Yes, responding as a volunteer worker - please go to Q7.
- No - If No, please go to Q8.

7. Please describe this person's paid work/volunteer emergency activities below.

8. How many dependent children live with you and what are their ages?
Please fill in all that are applicable. If you don't have children, please go to Q10.

<table>
<thead>
<tr>
<th>Age of dependent children</th>
<th>Under 1 year old</th>
<th>1 - 4 years old</th>
<th>5 - 9 years old</th>
<th>10 - 14 years old</th>
<th>15 - 17 years old</th>
</tr>
</thead>
<tbody>
<tr>
<td>Child 1</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>Child 2</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>Child 3</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>Child 4</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>Child 5</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>Child 6</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
</tbody>
</table>
9. How would you rate the social supports (such as child care) that assist you with your parental responsibilities?  
Please fill in one circle.

- Excellent  O
- Good        O
- Fair        O
- Poor        O

10. Are you involved in volunteer emergency activities in your community?

- Yes – if Yes, please go to Q11.  O
- No – if No, please go to Q12.   O

11. Please describe your volunteer emergency activities below.


12. Are you the primary caregiver for any other persons with special care needs? eg. illness, infirmity, disability

- Yes – What are their ages? Please fill in all that are applicable.   O
- No – Please go to Q14.        O

<table>
<thead>
<tr>
<th>Age of person/s</th>
<th>Under 18 years old</th>
<th>18 - 39 years old</th>
<th>40 - 64 years old</th>
<th>65 - 84 years old</th>
<th>85 years and older</th>
</tr>
</thead>
<tbody>
<tr>
<td>Person 1</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
</tr>
<tr>
<td>Person 2</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
</tr>
<tr>
<td>Person 3</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
</tr>
<tr>
<td>Person 4</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
</tr>
</tbody>
</table>

13. How would you rate the social supports (such as respite care) that assist you with your caregiver responsibilities?  
Please fill in one circle.

- Excellent  O
- Good        O
- Fair        O
- Poor        O

14. Do you have an emergency plan for yourself and the family if a disaster (such as natural disasters including bushfires, floods, earthquakes etc. and health-related disasters including influenza pandemic and chemical threat) occurs?

- Yes  O
- No   O
Section 2: Willingness to participate

A health-care disaster can be any number of hazardous situations such as bushfire, cyclone, industrial or transport accident, pandemics (SARS, Avian, H1N1-Swine influenza), terrorist attack, and chemical, biological or radiation accidents.

1. Would you be prepared to attend your place of work if there was a health-related disaster that impacted on your workplace? Please indicate if you would attend work for the following types of hazardous situations.

<table>
<thead>
<tr>
<th>Disaster Description</th>
<th>Completely unprepared to attend</th>
<th>Somewhat unprepared to attend</th>
<th>Neither prepared or unprepared to attend</th>
<th>Somewhat prepared to attend</th>
<th>Very prepared to attend</th>
</tr>
</thead>
<tbody>
<tr>
<td>Transport incident with injuries spanning major to minor trauma (eg. train/ bus crash)</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
</tr>
<tr>
<td>Natural disaster (eg. bushfire, flood)</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
</tr>
<tr>
<td>Pandemic outbreak (eg. influenza)</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
</tr>
<tr>
<td>Chemical, biological or radiation incident (eg. leak, spillage)</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
</tr>
<tr>
<td>Terrorist attack</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
</tr>
</tbody>
</table>

2. Do any of the following reasons describe your willingness to attend?

Please fill in yes or no.

- A professional nurse has a responsibility to work under any circumstances. Yes No
- I have knowledge/skills to deal with health-care disasters. Yes No
- My work environment supports working in health-care disasters. Yes No

3. Do any of the following reasons describe your willingness NOT to attend?

Please fill in yes or no.

- I have a right to say 'no' to exposing myself and my family/dependents to risk. Yes No
- I need more knowledge and skills before I am able to attend health-care disasters. Yes No
- Managers should organise other staff/employers who agree to attend such circumstances. Yes No
4. How would you rate the following statements?

Please fill in one that is applicable.

<table>
<thead>
<tr>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Neither Agree nor Disagree</th>
<th>Disagree</th>
<th>Strongly Disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
</tr>
</tbody>
</table>

I believe that staff should be able to choose whether or not they participate in a disaster response.

I feel that I have a high level of choice to actively participate in a disaster response.

5. Is there anything that would need to occur to improve your willingness to attend work when there is a health-related disaster?

- O Yes – Please go to Q3.1.
- O No – Please go to Q6.

5.1 Please fill in the appropriate boxes.

- O Care provisions
- O Working conditions adjustments
- O Personal protection equipment
- O Education/training courses
- O Other – Please state

6. Do you have any further comments you would like to make regarding the willingness of emergency nurses to respond to disasters in Australia?

Please state: ____________________________________________________________

______________________________________________________________
Section 3: Preparedness for health care disasters

For a health-care disaster in your health service, please describe.
Please fill in the appropriate circles.

<table>
<thead>
<tr>
<th></th>
<th>Completely unprepared</th>
<th>Somewhat unprepared</th>
<th>Neither prepared or unprepared</th>
<th>Somewhat prepared</th>
<th>Very prepared</th>
</tr>
</thead>
<tbody>
<tr>
<td>Your family’s preparedness for you to be at work</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
</tr>
<tr>
<td>Your employer’s preparedness to support you</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
</tr>
<tr>
<td>Your nursing colleagues’ preparedness</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
</tr>
<tr>
<td>Your unit/ ward support staff’s preparedness (eg. administrative staff, clerks, personal service attendants)</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
</tr>
<tr>
<td>Your unit/ ward medical and allied health professionals’ preparedness</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
</tr>
<tr>
<td>Your manager’s preparedness to respond</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
</tr>
</tbody>
</table>

Section 4: Employment characteristics

1. How long have you been working as an Emergency Nurse (in Australia or overseas)?
   - 0 0
   - 1 1
   - 2 2
   - 3 3
   - 4 4
   - 5 5 years
   - 6 6
   - 7 7
   - 8 8
   - 9 9

2. What is your current classification level/equivalent?
   Please select one.
   - O Enrolled Nurse / Division 2 in VIC
   - O Registered Nurse / Division 1 in VIC
   - O Registered Nurse Level 2 / Clinical Nurse Consultant
   - O Clinical Nurse Specialist / Clinical Nurse Consultant
   - O Associate Nurse Manager
   - O Nurse Unit Manager
   - O Clinical Nurse Educator
   - O Nurse Practitioner / Candidate / Transitional
   - O Director of Nursing / Assistant Director of Nursing
   - O Other – Please state
3. What is your highest level of qualification? Please select one.
- Hospital based training/certificate
- Bachelor degree
- Bachelor degree (Honours)
- Postgraduate Certificate
- Postgraduate Diploma
- Master degree
- PhD

4. Do you have qualifications in these related areas? Please fill in all that are applicable.
- Paramedic qualification
- Infectious disease certificate
- Infection control
- Disaster management
- Public health
- MIMMS or other Incident Command system training
- Other – Please state

5. Have you ever attended courses (including short courses) or seminars on preparing for a health-related disaster?
- Yes - Please go to Q5.1
- No - Please go to Q6 on the next page.

5.1 Which courses relevant to disaster health care have you attended? Please fill in all that applicable.
- Hospital education sessions
- Military training
- MIMMS or other Incident Command Systems Training
- Emergency Management Australia (EMA) courses
- Postgraduate study
- Emergo Train
- Other – Please state

5.2 Did you find this course/s useful? Please fill in yes, no or if you have not done this course, not applicable (N/A).

<table>
<thead>
<tr>
<th>Course</th>
<th>Yes</th>
<th>No</th>
<th>N/A</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hospital education sessions</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Military training</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MIMMS or other Incident Command Systems Training</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Emergency Management Australia (EMA) courses</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Postgraduate study</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Emergo Train</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

7
6. Approximately, how many hours fortnightly do you work?
Please fill in and indicate the number of hours:

0  0
1  1
2  2
3  3
4  4
5  5  hours
6  6
7  7
8  8
9  9

7. Approximately, how many hospital beds does your hospital have in total?
Please fill in and indicate the number of beds:

0  0  0  0
1  1  1  1
2  2  2  2
3  3  3  3
4  4  4  4
5  5  5  5  beds
6  6  6  6
7  7  7  7
8  8  8  8
9  9  9  9

8. Which state or territory is your work setting located?
Please fill in one.

○ NSW
○ VIC
○ QLD
○ WA
○ SA
○ TAS
○ ACT
○ NT

9. What is your work setting locality?
Please fill in one.

○ Major tertiary referral
○ Urban district
○ Regional centre
○ Rural

10. Which type of work setting are you working at?
Please fill in one.

○ Public
○ Private

Section 5: About this questionnaire

How did you find this questionnaire?

Very easy  ○  Easy  ○  Neutral  ○  Hard  ○  Very hard  ○

Thank you very much for your time and participation.
If you have further inquiries regarding this questionnaire and the project, please contact:
willings@flinders.edu.au
Focus group schedule

Focus Group Schedule - The Willingness of Emergency Nurses to Respond to Disasters

Introduction (5 min) As per Plan

Themes (50 min – 5 questions of approx. 10m each)

1) **Tell us about your responsibilities as an ED nurse, working in a disaster?** (broad introduction to the area of disasters)
   Possible prompts:
   - Responsibilities in the ED, Triage, etc.

2) **Tell us about your out-of-work responsibilities, should there be a disaster?**
   Possible prompts:
   - Family?
   - Effect of partner’s disaster responsibility?
   - Volunteer commitments?
   - Pets?

3) **Tell us about being an ED nurse and your willingness to respond to a disaster?**
   Possible prompts:
   - Able to choose?
   - Duty?
   - Moral responsibility?

4) **Tell us about whether you feel confident as an ED nurse in responding to a disaster?**
   - Education/ training/ knowledge
   - Experience?

5) **Tell us about the support that would assist you to respond as an ED nurse in a disaster?**
   (support for professional and out-of-work experience)
   Possible prompts:
   - Practical support?
   - Organisational support?
   - Psychological support?
   - Financial support (money, insurance, etc)?

6) **Tell us about willingness and preparedness of ED nurses in a disaster?**
   Possible prompts:
   - Are willingness and preparedness different? How?
   - Willingness issues?
   - Personal Emergency Plan?
   - Colleagues’ preparedness?
Conclusion (5 min)

- Check that demographics sheets are completed & placed in a box.
- Ask if they want to participate in a 1hr interview – if so fill in another form with their contact details & availability & place it in the box.
- Reminder that if questions have caused any concerns, can receive counselling from EAP.
- Thank you!
Interview schedule

Interview Schedule - The Willingness of Emergency Nurses to Respond to Disasters

Guidelines

- The following are possible questions to draw on, from this semi-structured interview. Issues to be followed up at the interviewer’s discretion.

Introduction

- Review project, disasters & willingness, follow up to survey & focus groups.
  Definition of disasters:

  ‘A serious disruption to community life which threatens or causes death or injury in that community and/or damage to property which is beyond the day-to-day capacity of the prescribed statutory authorities and which requires special mobilisation and organisation of resources other than those normally available to those authorities.’ (EMA, http://www.disasters.ema.gov.au/, accessed 20 April 2010)

- Run through confidentiality agreement – names & details will be de-identified, etc. Okay to record, check for questions, etc.
- Right to withdraw from the research before recording (by refusing to answer a question and/or leaving the room).
- Participants sign agreements (2 copies – they keep one). If they want a copy of the final report, indicate this on the form. There will also be feedback sessions held in all the participating hospitals.

Questions

1) Theme: Responsibilities in ED
   - How does the context of triage change in a disaster? What would that mean for you and your willingness to come to work?
   - Would more preparation on ethical dilemmas in disasters increase your willingness?
   - What do you think the security risks could be working in a disaster? Do they affect your willingness?

2) Theme: Out-of-work responsibilities
   - How do commitments to your family affect your willingness to work in a disaster (e.g. children/parents)?
   - Does your partner’s job affect your willingness (e.g. his/her disaster responsibility)?
   - Do you have any other out-of-work responsibilities that affect your willingness (e.g. pets, volunteer commitments)?
   - What could the hospital do to help support you with these responsibilities?
Is communication between you and your family an important consideration? In what way?
Would anything about your health affect your willingness to work in disasters (e.g. pregnancy, chronic illness)?

3) Theme: Beliefs about willingness
- Some nurses have talked about being unwilling to come to work in a disaster if they are putting themselves in danger. What information do you need to assist you to do an assessment of risk to yourself?
- Do you think there is a moral responsibility or duty for ED nurses to come to work? How does this fit with the idea of risk assessment?
- How do you feel about the right to choose to come to work – if you or others choose not to come?

4) Theme: Confidence in disaster response
- How does training affect your willingness to work in disasters?
- How does past experience affect your willingness to work in disasters?

5) Theme: Support for disaster response
- What practical support for your professional responsibilities does the hospital need to give in a disaster response?
- What practical support for your out-of-work responsibilities does the hospital need to give in a disaster response?
- Are other forms of support important (e.g. psychological, financial)?
- How confident are you in the ability of your colleagues to work in disasters?
- How do you feel about the preparedness of your management for a disaster response?
- How important is team cohesion to your willingness?

6) Theme: Willingness and preparedness
- How do you think willingness and preparedness are different?
- What is the influence of preparedness by the hospital on your willingness?
- What is the influence of preparedness by yourself on your willingness (e.g. Personal Emergency Plan, training)?
- Any other issues on willingness that you think are important?

Conclusion (5 min)
- If questions have caused any concerns, can receive counselling from EAP.
- Thank you!
Plan for focus groups

Plan for Focus Groups -The Willingness of Emergency Nurses to Respond to Disasters

- Brief description of the aims of the project & introduction of facilitator/s
- Run through confidentiality agreement – names & details will be de-identified, etc. Okay to record...
- Participants sign agreements (2 copies – they keep one). If they want a copy of the final report, indicate this on the form. There will also be feedback sessions held in all the participating hospitals.
- Check for any questions about confidentiality.
- Group norms – e.g. what is said in the room stays in the room; participants can refuse to answer a question or leave if they are uncomfortable; can debrief with facilitator after group if required and/or referral to their health service’s Employee Assistance Program for counselling
- (Facilitator to monitor participants for any signs of anxiety or distress & check if they need to leave the room, etc.)
- Right to withdraw from the research before recording (by refusing to answer a question and/or leaving the room).
- A piece of paper will be distributed to the group with the following information:
  Definition of disasters:
  ‘A serious disruption to community life which threatens or causes death or injury in that community and/or damage to property which is beyond the day-to-day capacity of the prescribed statutory authorities and which requires special mobilisation and organisation of resources other than those normally available to those authorities.’ (EMA, http://www.disasters.ema.gov.au/, accessed 20 April 2010).

- Nurses to fill in a brief demographics sheet (to check if they have any different characteristics from the survey group) and place it in a box at the end of the session.
- Let them know about the national survey through CENA, ACEN & 4 participating sites, with responses from 451 ED nurses. We have come up with some key issues from the data and would like to hear your responses to these.
- Note: facilitator to bring back discussion to “willingness” as much as possible.

  Validate participants’ responses with questions like:
  “So what you’re saying is....?”
  “So what you think is...?”
  “How does everyone else feel about this?”

  Explore participants’ responses with questions like:
  “What do you mean by...?”
  “Can you tell me more about...?”
  “How does that affect willingness?”