Disaster Preparedness for Nurses: A Teaching Guide

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abstract

As one of the largest groups of health care providers in the United States, nurses are trained to attend to the physical, psychological, and spiritual needs of their patients, making them highly qualified to influence the outcomes of victims of an emergency situation. Unfortunately, nursing programs offer limited content on delivering care under extreme conditions, and few continuing education programs are available to practicing nurses. This article provides a brief educational presentation that can be used without an extensive time commitment or in-depth instructor knowledge of the subject. The course content has been presented to nurses at the American Red Cross, at local chapter meetings of professional nursing organizations, and to both graduate and undergraduate nursing students. This presentation is not designed to be a comprehensive study of disaster nursing, but serves as a starting point that might lead to further study and encourage active participation in preparedness education and planning.

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Filled with stories of tsunamis, earthquakes, major transportation accidents, and acts of terrorism, recent headlines are alarming. Before the events of September 11, 2001, health care providers did little to prepare for massive catastrophe. Four years later, America remained unprepared for disaster when Hurricane Katrina hit the U.S. Gulf Coast with a vengeance. The aftermath cost more than 1,800 lives and $81 billion in damages (U.S. Department of Health and Human Services, n.d.). Commenting on the tragedy, Weiner (2006) remarked, “While many emergency response plans were prepared, the inability to execute those plans in conjunction with a coordinated response led to the demise of such planning efforts.” Having a good plan is not sufficient without trained individuals to execute it.

Because of the acute need to successfully implement emergency response plans, this article provides the basic outline for an educational program for nurses on providing care during a disaster. Because this program does not require an extensive time commitment or in-depth knowledge of the subject by the instructor, it is ideal for use in a continuing education setting. Furthermore, this article seeks to provide a starting point for learning that may promote further study and encourage nurses to actively involve themselves in preparedness planning in their work setting and community. Because they are likely to provide health care in the event of a natural or man-made disaster, it is important that nurses have a voice in planning and executing disaster care.

To put an effective emergency response plan into practice, nurses should obtain at least basic core knowl-
edge of what to anticipate and how to respond to the challenges of working in extreme conditions before first response calls. Many undergraduate nursing programs do not include disaster preparedness and response in their curricula. There is also little training available for these events once nurses begin working in the profession. Hence, many nurses are unable to respond successfully in the face of major calamities. As a result, ongoing education about providing care during disasters is a vital component of maintaining an informed nursing force.

According to a multifaceted study by Rose and Larrimore (2002), fewer than 23% of respondents felt confident in providing care during a hypothetical chemical terrorism event and 85% believed that a course in domestic terrorism would benefit all nursing students. Based on data from this study, the authors advocate continuing education programs that include information on the physical, psychological, and emotional aspects of disasters and not necessarily on specific types of events. In a more recent survey of registered nurses in Missouri, 60% of respondents indicated that they did not receive any disaster education as part of their undergraduate coursework (Rebmann & Mohr, 2010).

To bridge the gaps in education, confidence, and disaster preparedness, the objectives for this continuing education program intend to ensure that all participants are able to: (1) describe the significance of the nurse’s role in a disaster; (2) recognize the importance of establishing a family disaster plan; (3) recognize potential hazards for natural and man-made disasters; (4) identify at least one type of mass casualty triage system; and (5) define the major psychological and ethical considerations of disasters.

LEARNER CONSIDERATIONS

Because the audience for this presentation is largely registered nurses, it fits within the framework of adult learning. According to Malcolm Knowles (1980), problem-centered learning that is focused on real-life problems motivates adult learners. In addition, Knowles described adult learners as interested in learning about concepts and applications that are relevant to them in practical settings. Knowles’ adult learning theory makes assumptions about what motivates adults to learn and the educational environment required for them to experience optimal learning. These assumptions guided the development of this learning activity.

REVIEW OF THE LITERATURE

Disasters are defined in many ways. The American Red Cross (2006) defined a disaster as any “threatening or occurring event of such magnitude and force as to dislocate people, separate family members, damage or destroy homes, and injure or kill” (p. 2-2). Erik Noji (1997), noted disaster expert, stated that disasters should be defined in terms of “what they do to people” (p. 7).

Just as there are many ways to define “disaster,” much of the available literature advocates the need for more disaster instruction. However, there is little consensus as to what to include in an educational program. An extensive review of the literature that led to the final content of the program discussed in this article focused primarily on the following areas: (1) disaster nursing education; (2) nursing competencies in emergency preparedness; (3) the need for nurses to have a personal emergency plan; (4) potential injuries in natural or man-made disasters; (5) mass casualty triage; (6) psychological implications; and (7) ethical considerations. Preferred methods of learning and the use of PowerPoint and multimedia as teaching tools received a secondary focus in terms of program development.

PROGRAM CONTENT

Significance of the Nurse’s Role in a Disaster

Even before Jane Delano defined American Red Cross Nursing in the early 1900s, nurses played an active role in caring for others in times of great tragedy. Because disastrous events now occur more frequently on American soil, it is more important than ever for nurses to be prepared to respond to disaster at a moment’s notice. Nurses are one of the largest groups of health care providers in the United States, and a prepared group of caregivers of this size could have a tremendous effect. Trained to provide for the physical, psychological, and spiritual needs of their patients, nurses are highly qualified to influence the outcomes of an emergency situation. Therefore, preparation before an event occurs is a vital part of disaster response. The American Nurses Association (ANA) validated the significance of this preparation in its policy paper, “Adapting Standards of Care Under Extreme Conditions: Guidance for Professionals During Disasters, Pandemics, and Other Extreme Emergencies” (ANA, 2008).

When disaster strikes in any form, nurses may face the challenge of providing care under difficult conditions. Situations that may require a shift in the normal standards of care include: (1) loss of essential services, including electricity, water, or the supply chain; (2) loss of infrastructure, including facilities or electronic information; (3) shortage of workers because of transportation loss, worker or worker family illness or injury, or unwillingness to report to work; (4) size of the affected population, requiring triage at a community level; (5) sudden increases in the number of patients, in marked excess of capacity or with an elevated Injury Severity
Score or other extreme patient conditions; and (6) relocation of care to an alternate facility that is not equipped for patient care (ANA, 2008).

**Establishing a Personal Emergency Plan**

Successful response to an emergency of any type requires adequate preparation, especially in a disaster situation, because nurses not only are required to provide care to others but also must attend to the needs of their own families. A survey of nurses after Florida’s Hurricane Floyd showed that their primary concern was for the safety of their families. This concern consequently influenced whether many nurses were willing to remain at the clinical site, even though a departure might threaten future employment (Secor-Turner & O’Boyle, 2006).

To ensure the safety of their families, all nurses should have personal disaster plans that encompass everything from basic survival supplies to a communication plan in the event of family separation. The Department of Homeland Security offers one of several tools designed to help families develop a comprehensive plan on its website, Ready.gov. The Sidebar lists additional resources for establishing a personal disaster plan.

**Natural and Man-Made Disasters**

Climate changes and global warming are having a considerable effect on the prevalence of natural disasters. According to the Centers for Disease Control and Prevention (CDC, n.d.), potential hazards related to natural disasters include trauma, electrical injuries, drowning, chemical leaks, and animal and insect bites. These events also can exacerbate preexisting medical conditions. Often these events occur with no warning and require victims to evacuate without medications and medical supplies, leading to further complications.

The prospect of a terrorist attack causing mass casualties creates a challenge for the U.S. health care system (Croddy &Ackerman, 2007). Knowledge of potential threats is invaluable for clinicians because the public relies on the preparedness of health care providers in crisis situations. The CDC (n.d.) reported that the most common injuries during a mass casualty event are eye injuries, sprains, eardrum damage, and minor wounds. Other potential and more severe threats include blast injuries, radiation poisoning, exposure to chemical agents, and biological conditions, including bioterrorism and naturally occurring events such as avian flu. Whatever the effects of a particular event, the skill sets of nurses are essential in meeting the demands of those involved (Billings & Kowalski, 2006).

**Mass Casualty Triage**

The concept of mass casualty triage dates back hundreds of years and finds its roots in the need for the military to effectively prioritize the care of multiple numbers of wounded soldiers. Most hospitals have mass casual-

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**SIDEBAR: ESTABLISHING A FAMILY DISASTER PLAN**

**Be informed**
- Know your community’s response plan.
- Know the types of disasters that are most likely to happen in your area.

**Create a personal plan**
- Choose two places to meet in case of an emergency. One should be a safe distance outside your home in case of a sudden event, such as a fire. The other should be outside of your neighborhood in case you are unable to return home.
- Designate an out-of-town contact person whom each family member can call to say that he or she is safe. It is often easier to call long distance than locally after a disaster because of damage to telephone equipment in the affected area.
- Write down a family communication plan that includes meeting places and information on work, school, and out-of-town contacts. Forms are available on the resource websites.
- Learn what to do if officials require evacuation to a shelter or sheltering-in-place at home.

**Prepare an emergency kit**
- Include at least a 3-day supply of food and water.
- Other items include a first aid kit with family prescriptions, a flashlight and a radio with extra batteries, plastic sheeting and duct tape, copies of important documents, and other special need items unique to your family.

**Additional resources**
- American Red Cross: www.redcross.org
- Centers for Disease Control and Prevention: www.bt.cdc.gov
- Ready America: www.ready.gov/america/index.html
Nurses play a vital role in the response of health care providers to an emergency, whether a natural disaster or a terrorist attack. According to Hughes, Grigg, Fritsch, and Calder (2007), it is imperative that nurses receive information on the potential psychosocial responses and the differences between normal and abnormal responses to disaster. Nurses can minimize the potential long-term psychological effects (Hughes et al., 2007).

The National Institute of Mental Health’s (2002) psychological implications in place and provide training for the emergency medical teams that are most likely to use the system. However, some events may require triage at the community level, as in the case of a widespread disaster. All nurses should have a basic knowledge of the principles of triage so that they can respond to a mass casualty event (International Nursing Coalition for Mass Casualty Education, 2003).

Numerous triage systems are available, including Simple Triage and Rapid Treatment (START), the Sacco Triage Method (STM), and Move, Assess, Sort, Send (MASS). The prevalence of disasters and the emphasis on community preparedness led to efforts to establish a standardized triage system. A CDC-sponsored panel recently proposed a national guideline for mass casualty called SALT (sort-assess-lifesaving interventions-treatment/transport) (Lerner et al., 2008).

The SALT triage system involves asking capable patients to walk to a specified area for later evaluation and requiring those who cannot walk to wave or signal to signify that they are in distress. Patients who cannot follow either command receive first priority in assessment because they are in the most critical condition, followed by those who are only able to wave or signal; last are those who are able to walk to the designated area. After sorting, the next step is to assess individual patients and provide lifesaving interventions within the skill level of the provider. These interventions include controlling hemorrhage, opening the airway, performing chest decompression for tension pneumothorax, and providing antidotes for chemical exposures.

Five color-coded categories are used to prioritize individuals for treatment and transport after the interventions. These categories are green for those with minimal injuries; red for those who require immediate treatment because of a life-threatening condition, such as major hemorrhage or respiratory distress; gray for those who are not expected to survive, given their injuries and the available resources; black for those who are dead; and yellow for all others. This dynamic prioritization changes based on patients’ conditions and the available resources.

### Psychological Implications

Interventions that provide psychological first aid are included in the program content. The interventions include: (1) protecting survivors from further harm; (2) reducing physiological arousal; (3) mobilizing support for those who are most distressed; (4) keeping families together and facilitating reunions with loved ones; (5) providing information; (6) fostering communication and education; and (7) using effective risk communication techniques.

### Ethical Considerations

Extreme conditions may require actions outside the norm of any standard of practice. Ethical guidance during these times comes from a variety of sources. The ANA Code of Ethics for Nurses (2001) prescribed nine ethical obligations for nurses. The ANA holds that these ethical obligations are non-negotiable and apply regardless of the setting.

Grimaldi (2007) stated that this ethical code might be too ambiguous in times of disaster because it indicates that nurses have the obligation to care for patients, yet have an obligation to care for themselves. It leaves room for the question “When does caring for me override caring for patients?” Included in the program discussion are such ethical dilemmas, in addition to Wynia’s (2007) three primary ethical challenges that face health care providers in public health emergencies: (1) rationing, (2) restrictions, and (3) responsibilities. The ANA recommended that nurses consider potential ethical issues and concepts before an emergency situation arises (ANA, 2008).

### COURSE FORMAT

Based on data supported by a literature review, an in-person format is the best way to deliver the information in this course. The program opens with a 13-minute video produced by Johnson & Johnson, entitled “Katrina: Nature at Its Worst, Nursing at Its Best.” This video offers personal accounts from nurses and clients who experienced Hurricane Katrina firsthand (Johnson & Johnson, 2008). A PowerPoint display guides the presentation of the course content. The program ends with a video montage of disaster photographs set to music.

Immediately after the presentation, each student receives an evaluation form and is asked to provide feedback on the content, setting, presenter effectiveness, instructional methods, and achievement of learner objectives. Attendees score items in each area on a scale of 1 to 5.

### CONCLUSION

Since the terrorist attack on September 11, 2001, and the destruction left in the wake of Hurricane Katrina, strides have been made in developing nursing compe-
Disaster Preparedness


1. The number of disasters in the United States has increased during the last decade.
2. Nurses are one of the largest groups of health care providers in the United States, and a prepared group of care providers of this size could have an enormous positive effect on victims of disaster.
3. Disaster preparedness was not included in the nursing curriculum of many practicing nurses, and little continuing education on this subject is provided.
4. This brief educational program can be used in a continuing education setting without an extensive time commitment or in-depth instructor knowledge.

Tendencies for disaster response. However, although the frequency of both natural and man-made disasters is increasing, many nurses remain unprepared to respond adequately to a large-scale emergency. Efforts must continue to ensure that the nation’s largest health care provider group stands ready to respond. This brief presentation is ideal in a continuing education setting because it does not require an extensive time commitment or in-depth instructor knowledge of the subject matter.

The literature on disaster nursing and emergency preparedness changes rapidly. For this presentation to remain current and relevant, the content must be updated periodically. Practicing nurses as well as nursing students should understand the significance of this issue and the importance of preparedness. Professional organizations, including the American Red Cross, the ANA, and the American Association of Colleges of Nursing, can increase the preparedness level of all nurses by joining forces to promote and facilitate education on providing care during extreme conditions.

REFERENCES


