

TRAINING & PREPAREDNESS: PREPARING HEALTHCARE FACILITIES TO EFFECTIVELY RESPOND TO A DISASTER

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Abstract

In recent years, events like Hurricane Katrina and Hurricane Sandy have increased attention to, and consideration of disaster response plans. Facilities of specific interest are those related to healthcare services. In a time of disaster, hospitals, clinics, nursing homes, and other health care settings are facilities of much concern since there are many patients or residents that have a range of injuries and illnesses. Preparing healthcare facilities to adequately respond to a disaster can help not only the patients, but staff, visitors, and community members.

This paper will discuss the need for disaster response training for healthcare staff and the importance of planning for a staff surge or break in deliveries of food and water. Challenges such as “Just-in-time” delivery, a disruption of electricity or transportation caused by a fire, flood, or earthquake, will be discussed. Model plans and targeted response trainings for a rapid evacuation are outlined. The importance of maintaining specialty supplies and equipment needed to respond to a fire, bomb explosion, flood or tornado are also described. Examples of effective planning, evacuation, and training strategies to support logistics and transportation during a crisis are provided including specific elements of training that should be incorporated in full scale drills as well as in exercises for healthcare facilities. A 10-point Emergency Preparedness Assessment Check List designed to meet the evacuation needs of Healthcare facilities with clients that may have mobility, vision, or hearing limitations is introduced.

Introduction

The impact of a hospital disaster that requires a full evacuation can have an immediate and long term impact if the hospital is not fully prepared to rapidly and effectively respond. If the facility’s response to an emergency is inadequate or slow many challenges can arise, such as loss of life, injuries to patients, staff or visitors, major financial damage, and the loss of the ability of the community to meet the healthcare needs of citizens in the area served by the hospital (Wapling et al, 2009).

There are several events that have justified the need for healthcare organizations to establish a disaster response plan. One of the events cited by the Joint Commission International emphasizes

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the importance of establishing and maintaining a strong practiced disaster plan and practicing the proper storage of hazardous chemicals was a hospital fire tragedy occurring in Kolkata, India (Joint Commission International, 2013). Previous events, such as the level of damage to hospitals and clinics by the North Ridge Earthquake in the state of California in the United States, have also been cited as key disaster events emphasizing the need to improve hospital emergency preparedness and response (Schulz and Carl, 2003).

Background and Thesis

In this paper, research and best practices related to the practical application of policies and strategies employed by healthcare organizations to successfully respond to an emergency or disaster are reviewed. Examples of recommended strategies, policies, trainings, and specialized equipment available to improve evacuation, communication, operational management, and staff response will be described. Case studies of significant disasters involving healthcare facilities located in Europe, the United States, and Asia will also be outlined.

Examples of healthcare facilities' emergency response capacity to respond to disasters caused will be included in this assessment. These findings provide insight for emergency responders, healthcare administrators, and regional and state organizations to more fully understand the emergency preparedness standards for healthcare organizations as recommended by international organizations such as the Joint Commission International. These findings will also be beneficial to national and state organizations that are encouraging or requiring local public and private organizations to engage in or improve collaborative training and coordination among community level disaster response organizations.

A literature review of published research and observations that have been published in government reports were used to cite examples of emergency preparedness and response best practices recommended for healthcare organizations. These best practices are aimed to help healthcare organizations to prevent disasters when possible, manage a disastrous event, communicate successfully during the disaster, and successfully staff the facility and evacuate when an event requires a full facility evacuation. Whether a disaster is caused by a flood, fire, earthquake or some other natural or manmade disaster the objective is always to mobilize and complete an effective evacuation or a shelter in place operation without harm to patients, staff or visitors (Bagaria et al, 2009; Smith and Gorski, 2010).

Disaster Management –Policies, Procedures & Trainings

As a healthcare facility prepares for disaster response the organization must establish and create a risk assessment of hazards, policies, procedures, trainings, and levels of communication. This risk assessment also needs to establish an organizational response structure, designate an emergency operation center and a backup operation location, create a plan for a staffing surge, assess the availability of needed supplies and equipment, and complete a full evacuation and/or the shelter in place action, while maintaining the safety of patients, staff, and visitors. This needs to be something that all staff members are familiar with and that is a plan that is frequently updated when there are changes in organizational structure.

The organizational structure established for an emergency response may differ depending on the region or country the healthcare facility is operated and each facility should meet the requirement of their region or country's recommended structure as well as the structure recommended by National or International Accrediting Organizations. (Wise and Robert, 2006; Joint Commission International, 2013). For example, Canada established the National Health Incident Management System in 2004 which outlines specific guidelines for disaster management (Christian et al, 2005). In order for it to be effective, once this structure is established, it must be communicated and used during full scale drills (Sexton et al 2007). These drills should include not only the staff of the healthcare organization but also other collaborating agencies involved in local emergency response, such as police departments, first responders, and fire departments (Smith and Gorski,

2010). In addition to developing and maintaining a plan to respond to an internal disaster or emergency the Joint Commission International, as well as many regional or national agencies, require each healthcare facility to maintain and practice a plan and specific operational strategies to respond to community emergencies ranging from a natural disaster, such as a flood, wild fire, or earthquake, to an epidemic (Joint Commission International, 2013).

Successful Communication Strategies

Detailed retrospective case studies such as the detailed assessment of the five fires in London, that took place between January 2008 and February 2009, have found that having several methods of communication available throughout the emergency is critical to the ability of staff and employees to complete a successful and injury-free full evacuation of the hospital (Wapling et al, 2009). To insure that a healthcare facility can communicate effectively the facility is expected to describe the type of communication strategies that are currently in place for an emergency and state how each strategy would be implemented. The organization is also required to describe how communication will be maintained to manage clinical activities during an emergency including communicating with designated off-site shelter locations. Communication strategies should also include describing how staff will be identified and assigned specific emergency response roles and responsibilities during and immediately after a disaster (Joint Commission International, 2013).

Plans and Practice to Achieve a Staff Surge

Obstacles facing healthcare facilities and public health infrastructures in achieving a successful disaster response include: surge planning, the assignment of emergency response roles for staff, and the creation and practice of a plan to adequately elevate staff levels during a disaster response. Best practices are required for healthcare facilities to acquire and maintain accreditation. For example the Joint Commission International, a major healthcare accrediting agency, expects that staff and employees from every department in a healthcare facility should know their role in disaster response. Each employee should know the plans of their department for disaster preparedness, fire safety, and hazardous material management (Joint Commission International, 2013). Some of the issues that must be addressed in surge planning include: knowing how many additional staff you will need and how long you will need these additional staff to meet the needs of patients whether responding to a fire or a pandemic. A facility must create and maintain an inventory of services provided by the healthcare facility. The type and number of staff and other resources must be determined to maintain each service (Reilly and Markenson, 2011).

An accrediting agency will expect healthcare agencies to explain how the organization will maintain adequate and elevated staff level if a disaster was to occur. Healthcare managers and staff must determine if they will provide some type of incentive to encourage employees to continue to report to work during a disaster. The management will also have to determine if and when the facility will plan to use healthcare staff from other agencies or organizations. If the organization plans to utilize staff from other agencies they also need to explain how these people are involved in training and emergency drills (Reilly and Markenson, 2011).

Maintain Specialty Supplies and Equipment

Medical supplies, equipment, and food are essential to many healthcare procedures. Just in time delivery operations are predominant in the delivery of supplies and food in healthcare organizations. Determining if private sector contracts can be maintained in the event of an emergency is important. When a disaster occurs there are several specialty equipment and supplies that might be in demand. Some examples of specialty equipment and supplies needed during an emergency include ventilators, remote lab services, burn supplies, and specialty antibiotic or antiviral supplies (Reilly and Markenson, 2011). Determining the type and quantity of specialty emergency supplies needed by the organization during an emergency is critical. The logistics of where and how to acquire and maintain specialty emergency supplies and determining who will be responsible for the supply are questions that must be answered (Reilly and Markenson, 2011).

While establishing the source of these supplies is vital, it is also important that staff members are adequately trained to use these specialty supplies and equipment. Many events, such as a successful fire evacuation requires the acquisition and practice with specialty supplies and equipment. Two very important items include: the assembly and use of a Fire Warden Kit and the availability and use of an evacuation chair, which is a critical tool for vertical evacuation (Wapling et al, 2009). An example of items that can be included in a well labeled Fire Warden Kit are two safety vests so the fire warden and an assistant can be identified, reflective vests to insure visibility during smoke or at night, a battery operated search light, and a cutter to cut wire or remove an obstacle (Joint Commission International, 2013).

Evacuation – Plan, Tools & Practice

Since disaster or emergency events have a significant impact on providing effective health service, risk accrediting agencies and regional agencies have determined standards that hospitals should meet to ensure safety. This includes having a well-practiced specific plan to safely evacuate all patients, staff, and visitors. The plan must be very specific and include strategies to prevent fires, support early detection, and insure each vulnerable group of patients, staff and visitors can be safely evacuated (Joint Commission International, 2013). In an attempt to further investigate and improve organizational responses, the National Health Services of London in Great Britain initiated a detailed retrospective study of five major healthcare facility fires that occurred between January 2008 and February 2009 in London (Wapling et al, 2009). Among the many issues that were found to be critical to a successful full vertical evacuation of a hospital due to a fire included readily accessible specialized equipment, a well-practiced evacuation plan, and a very detailed transportation plan (Kader, 2008; Hassol et al, 2013). A successful evacuation also required the prior designation and coordination of alternate sites for external shelter of patients once evacuated, and the organized tracking of staff, patients, and patient records during an evacuation. When considering natural disaster events such as responding to a hurricane there are many decisions for healthcare facilities to make. These include deciding to initiate a pre or post disaster evacuation (Zane et al, 2010). Having a prior plan for the appropriate type and number of transportation vehicles to achieve a successful site evacuation and conducting regular drills and exercises is critical to a successful response (Wapling et al, 2009; Reilly and Markenson, 2011; Hassol et al, 2013).

Hazardous Material Management

Prevention of a disaster or emergency is a critical component of emergency preparedness. Since hospitals and other healthcare settings can have an increased susceptibility to hazardous materials, it is important that facilities are prepared to mitigate exposure and manage these materials. To reduce the risk of a hazardous material spill or explosion resulting in a fire or toxic condition, healthcare organizations are expected to have an operational plan to make sure there is an inventory, as well as the appropriate handling, storage, disposal and use of hazardous materials and the wastes they generate (Joint Commission International, 2013).

Facility Emergency Preparedness

One of the primary elements of a successful healthcare facility response must be the ability of an organization to always know that their facility's fiscal plant, signage, housekeeping, and warning systems are in place and working properly. One way to maintain a facility that is ready to respond is assess protocol frequently. Once all prevention and response systems are established it is imperative to use a systematic assessment system at least four times a year to ensure the facility is always ready to respond to a disaster.

The 10 Point Facility Checklist for Emergency Preparedness instrument which was developed by Dr. Susan M. Smith is currently utilized by many facilities in the United States and China is one method of assessment. This checklist has sections used to organize the specific elements that should be assessed. These ten sections included: warning systems, communication, evacuation,

utilities/electrical control, fire suppression, storm/tornado shelter, management issues, housekeeping, bomb threats and security and can be used to insure a facility continuously maintains the ability to have safe and obstruction free fire exits, operational early warning systems, as well as operational methods of suppressing a fire such as a sprinkler system, water hoses and/or chemical suppressants (Joint Commission International, 2013).

Measures of Success

It has been demonstrated that planning and practice by all staff and employees can directly improve the performance of a facility during a disaster (Gardner and Candace, 2013). Most accrediting organizations will require a facility to describe how all employees were involved in the process. To achieve this goal a facility must demonstrate that it has designed and implemented a planning process and conducted full scale drills and practices involving all departments and personnel (Joint Commission International, 2013). This requirement is typically included as an accrediting requirement because if all departments within a hospital are functioning smoothly to meet the many challenges the hospital faces during an emergency or disaster the probability that a safe and efficient response can be achieved is significantly increased.

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Dr. Susan M. Smith, EdD, MSPH, is an Associate Professor of Safety and Health Education at Indiana School of Public Health, Indiana University Bloomington in the U.S.A. Dr. Smith's research areas include: building health education and protection strategies to reduce the rate of injuries or death within a community, enhancing the emergency preparedness and response practices of organizations such as hospitals and nursing homes, and enhancing the level of protection for children and adults considered to be members of high risk groups during times of crisis or disaster.

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