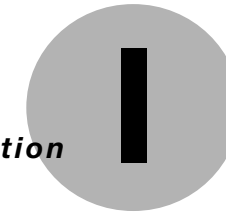
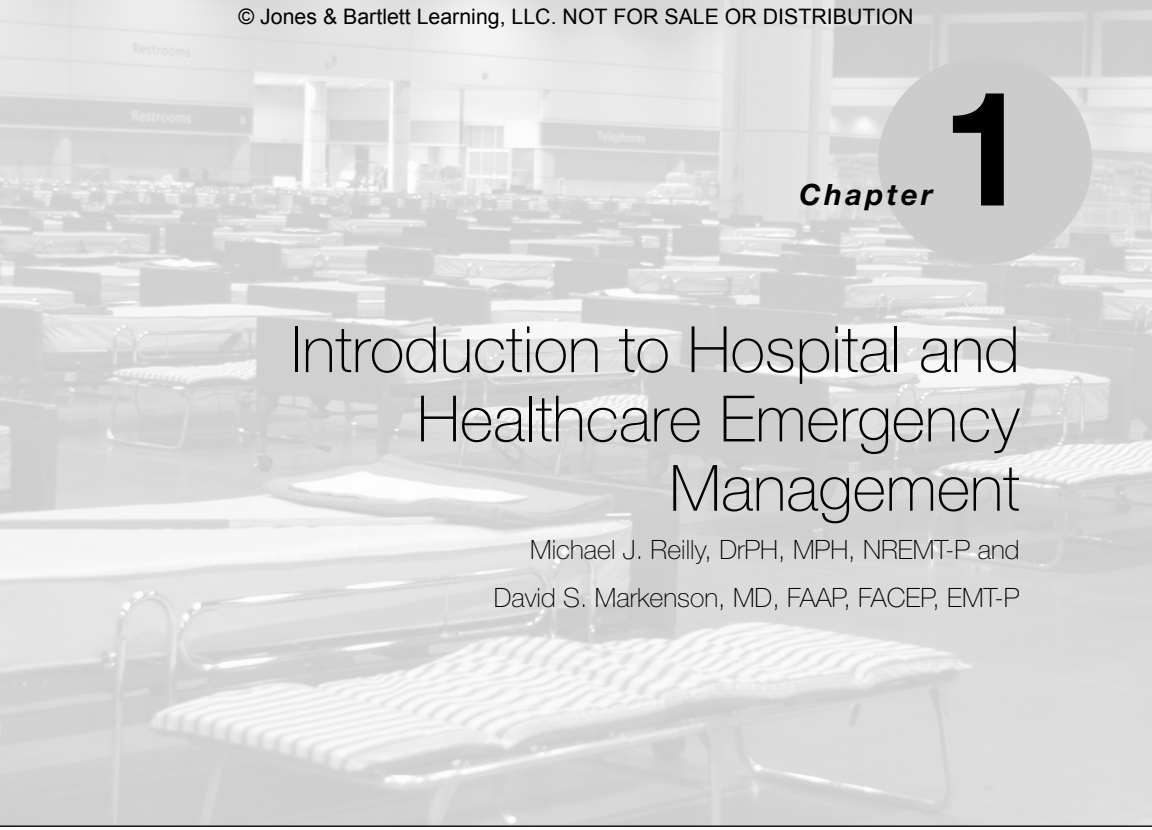


Principles of Emergency Management for Healthcare Facilities



Chapter 1

Introduction to Hospital and Healthcare Emergency Management

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Learning Objectives

- Describe the need for and responsibilities of healthcare emergency management.
- Describe the role of the hospital emergency manager.
- Identify the activities performed by healthcare emergency management.

Emergence and Growth of Healthcare Emergency Management

The concept of healthcare emergency management is not entirely new, but may seem strange and foreign to those who have worked in healthcare or emergency management and, until recently, have not known anyone working in this profession. If one looks back more than 30 years, it would be almost impossible to find a hospital role called hospital

emergency management or even a position for a healthcare emergency manager in a hospital or medical center. Yet healthcare emergency management responsibilities have always been addressed by hospitals, such as fire safety, backup power, and the ability to handle victims from a mass casualty event.

A fundamental tenet of emergency management is that institutions must prepare for events that may rarely occur while taking protective actions to mitigate any likelihood that they will occur at all. Due to the low frequency of events testing the health system's ability to respond to a disaster, an act of terrorism, or a public health emergency, the ability to evaluate the strengths and weaknesses of hospital emergency preparedness is limited. In addition, the public has strong expectations of the roles hospitals should play during times of disaster. Healthcare institutions are expected to provide both emergency care and continuance of the day-to-day healthcare responsibilities regardless of the volume and demand. Recently, they have also become sites of community refuge, bastions of safety in a threatening and dangerous environment. The public believes that hospitals will have light, heat, air conditioning, water, food, and communications capabilities, regardless of the fact that the institution may itself be affected by the calamity. During the terrorist attacks in the fall of 2001 and the Northeast Blackout of 2003, the public flocked to hospitals, even when they did not require medical care. Furthermore, with increased intelligence of the vulnerabilities of the healthcare infrastructure and the desire of terrorists to exploit this, institutions have been forced to focus limited resources on safety and security rather than on comprehensive emergency management efforts.

A major change in the way hospitals plan for hazards and vulnerabilities includes less planning for specific single issues or threats but rather the adoption of an all–hazards comprehensive emergency management planning process. Additionally, hospitals need to look beyond their emergency department doors and engage community stakeholders to assist in this process, reaching out to local and regional emergency planners to assist in larger communitywide emergency preparedness planning. The interest of nonhospital entities in health system emergency preparedness can be seen through several examples, including emergency management and public health initiatives on mass vaccination, pandemic planning, increasing hospitals' ability to perform decontamination of casualties contaminated with hazardous materials, etc. Recent reflection of the role of the hospital in emergency management and population health can been seen in revised laws, regulations, and even accreditation standards. An example of this is The Joint Commission on the Accreditation of Healthcare Organizations' (JCAHO) change from placing emergency preparedness standards in the Environment

of Care section to placing the standards in a separate and distinct section with specific goals and requirements, as well as the release of the Occupational Safety and Health Administration (OSHA) document *Best Practices for Hospital-Based First Receivers*.[1–3]

Over the past eight years we have embarked on an interesting marriage of these two separate disciplines—health care and emergency management—whose common ground has historically been brought together in the street or on the disaster scene by emergency medical services workers, or sometimes brought into the emergency departments of hospitals and trauma centers across the country. Both disciplines have separate roles and responsibilities, but where the seemingly disparate goals of these fields come together is the reduction of morbidity and mortality following disasters, acts of terrorism, and public health emergencies.

Emergency management agencies have traditionally been responsible for bringing first responders, government agencies, and community stakeholders together to assist with comprehensive emergency planning or disaster response and recovery. A common cornerstone of emergency management has been to protect life, then property, then the environment. As a result, when conducting emergency planning activities, the health and medical needs of the population are among the most significant and are considered with basic public health and human needs including sheltering, mass care, sanitation, environment health, food and water, and other essential services. In addition, as public health professionals, we also believe that population health activities include the mitigation of increased morbidity and mortality during and following a disaster, act of terrorism, or public health emergency.

In healthcare delivery, we attempt to meet the health and medical needs of the community by providing a place for individuals to seek preventative medicine, care for chronic medical conditions, emergency medical treatment, and rehabilitation from injury or illness. While a healthcare institution serves the community, this responsibility occurs at the level of the individual. Each individual expects a thorough assessment and treatment if needed, regardless of the needs of others. This approach is different than that practiced by emergency managers, whose goal is to assist the largest number of people with the limited resources that are available. As such, emergency management principles are focused on the needs of the population rather than the individual. When either planning for a disaster or operating in a disaster response mode, the hospital should be prepared at some point to change its focus from the individual to the community it serves and to begin weighing the needs of any individual patient versus the most good for the most patients with scarce resources. Moving from the notion of doing the most for each individual to doing the best for the many is a critical shift in thinking

for healthcare institutions considering a program of comprehensive emergency management. While the initial planning for emergencies by hospitals is focused on maintaining operations and handling the care needs of actual or potential increased numbers of patients and/or different presentations of illness or injury than is traditionally seen, there is also the need to recognize that at some point during a disaster, act of terrorism, or public health emergency there may be an imbalance of need versus available resources. At this point the approach to delivering healthcare will need to switch from a focus on the individual to a focus on the population. This paradigm shift is one of the core unique aspects of hospital emergency management that allows the hospital to prepare to maximize resources in disasters and then to know when to switch to a pure disaster mode of utilizing its limited and often scant resources to help the most people with the greatest chance of survival.

The healthcare delivery system is vast and comprised of multiple entry points at primary care providers, clinics, urgent care centers, hospitals, rehabilitation facilities, and long-term care facilities. The point of entry for many individuals into the acute healthcare system is through the emergency department (ED). Since the late 1970s, the emergency medical services (EMS) system has allowed victims of acute illness and injury to receive initial stabilization of life-threatening medical conditions on the way to the emergency department. Among the many strengths of the ED is the ability to integrate two major components of the healthcare system: prehospital and definitive care. The emergency department maintains constant communications with the EMS system and serves as the direct point of entry for prehospital providers into the hospital or trauma center. Emergency physicians represent a critical link in this process by anticipating the resources that ill and injured patients will need upon arrival at the ED, and initiating appropriate life-saving medical care until specialty resources become available.[4–11] In this context, the healthcare system is an emergency response entity.

Healthcare Emergency Management Activities

Hospital emergency management activities vary and can be categorized in many ways, however some common areas of focus within healthcare emergency management include the following areas:

- communication
- surge capacity
- volunteer management
- security issues
- hazmat/CBRNE preparedness
- collaboration and integration with public health
- education and training

- equipment and supplies
- worker safety
- drills and exercises
- emergency department disaster operations
- trauma centers

COMMUNICATION

Communication issues in disaster preparedness and response are cited throughout the literature as a major source of frustration and inadequacy for coordinating and executing disaster operation plans.[4–5,8,11–16] By identifying the vulnerabilities in the existing system of healthcare communication systems, we can take steps to address these issues and further increase our health system preparedness. Addressing the vulnerabilities in communication systems and planning how to overcome them is an essential responsibility of a hospital emergency manager. Many of the criticisms of the current state of health systems' communication systems center around the inability to communicate easily with external agencies and share critical information. Disaster after-action reports and exercise improvement plans almost universally cite poor communication as one of the problems associated with incident management and the event being reviewed.

Infrastructure support is an important consideration when examining whether adequate safeguards are in place to support the systems we will rely upon during a disaster. On September 11, 2001, while one New York City hospital was preparing to treat a large number of (anticipated) casualties from the disaster, they experienced a loss of their computer and information systems.[17] This unplanned event arose because the communication system line that supported their system's infrastructure ran beneath the World Trade Center.[17] Additionally, other reports have cited problems with battery failure and the lack of a prolonged power supply as limiting communication systems' abilities during an event.[14] This example illustrates a major point in emergency communication systems: hospitals need the ability to connect all significant parties during a disaster or other emergency and the system should be based on a redundant infrastructure.[5] Clearly, from a planning perspective, this would be a desirable option. However, the reality remains that investing in communication systems is a significant financial burden on already underfunded hospitals and healthcare systems.

Risk communication is often overlooked during the planning phase of an event, and this can lead to frustration and confusion during disaster operations. Risk communication is sometimes the only way for the public to gain an understanding of the scope and severity of an incident. Additionally, risk communication information provided by hospitals may be used to help families of disaster victims find information about

their loved ones' condition. Reviews of risk communication have shown that a predesignated public information officer (PIO), who will liaise with the media and the public and who has specific training and experience in giving briefings and fielding questions, should perform all risk communication tasks during disaster operations.[13] Specific elements of risk communication that may be conveyed to the public may include information on evacuations, scope and breadth of the event, where and how to obtain assistance if needed, whom to call for specific information, location of postexposure prophylaxis or vaccination clinics, and what to expect over the next several hours and/or days of the event. This is discussed in more detail in Chapter 12.

SURGE CAPACITY

The General Accounting Office (GAO), which changed its name to the Government Accountability Office (GAO) in 2004, finalized reports during 2003 on the public health and hospital preparedness for bioterrorism and emerging infectious diseases.[9,16] These reports found that most hospitals in the United States do not have the means to care for a surge of patients during a public health emergency.[9,16] They stated that, based on the national emergency department diversion rates in urban and suburban areas, shortages in the healthcare workforce, and the general lack of available supplemental medical equipment and supplies in hospitals, the medical community is not prepared to handle a patient surge caused by an infectious disease outbreak or bioterrorism related event.[9,16] Emergency departments are being utilized more often as urgent care centers because the growing population utilizes the ED as their point of primary care. This increasing phenomenon is contributing to ED overcrowding and *diversionary status* (hospital EDs asking that ambulances refrain from bringing patients to their facility for a period of time) in virtually every healthcare and trauma system in the country. The current state of affairs in the nation's EDs makes it very difficult to prepare for surge capacity when many hospitals cannot effectively handle their daily patient volume.[18]

Referral patterns of patients presented to medical facilities will vary in terms of how they arrive at the facility (EMS or self-transport) as well as which facilities they access (hospital ED or physician's office), depending on the type of disaster or public health emergency. In cases of natural disasters, explosions, and acute catastrophic events where there is a clear and defined "scene," many patients will be triaged, treated, and perhaps transported to hospitals or trauma centers by EMS personnel. In cases of bioterrorism or infectious disease outbreaks, patients would normally exhibit minor signs and/or symptoms of an illness (e.g., fever, rash, flu-like symptoms, etc.). These patients may be

presented to their primary care physician or an urgent care center to receive initial diagnosis and treatment. The patients that can be expected to arrive at the ED in these cases would be those who could not access a private physician, those too acutely ill to seek care in an office setting, those referred to the ED by their physicians, and those patients who called EMS for assistance. This latter group would yield the least number of ED arrivals.[19–20]

Incidents of chemical and biological terrorism as well as pandemic or epidemic incidents of infectious diseases may arguably produce the most significant burden on the healthcare system.[9,13,16,18,21] A main reason for this is the unpredictable referral patterns of patients who fall victim to a chemical or biological hazard. Although some disaster after-action reports do suggest that even victims of conventional disasters will self-refer to medical facilities, the issues of delayed onset of symptoms, cross-contamination, and person-to-person disease transmission that are associated with a chemical, biologic, or radiologic incident call for more detailed contingency plans. An example of hospital referral patterns after a chemical agent event can be seen in the post-event summary of the sarin attack in the Tokyo subways in March of 1995.[22] In this incident 12 people were killed, but more than 5000 people sought medical attention, and only 688 of them were medically transported to area hospitals.[22]

At some point during the evolution of a disaster or other public health emergency, patients will converge on acute care hospitals. Studies have consistently shown that despite rigorous planning initiatives, hospitals and emergency departments are not prepared to handle the mass influx of patients that a bioterrorism event or infectious disease outbreak would produce.[9,16,19–20] During the sarin attack on the Tokyo subway in 1995, the nearest hospital had 500 patients in the first hour after the incident and more than 20% of its staff was secondarily contaminated.[22] It is important that planners additionally recognize that in certain catastrophic disasters involving bombings, building collapse, etc., mass injuries and a patient surge may not occur as anticipated because of the high rate of mortality.[17,23] The hospital emergency manager and all those involved in hospital emergency management must ensure that their hospital has adequate plans for the surge of patients that will arrive during a disaster, terrorism event, or public health emergency.

VOLUNTEER MANAGEMENT

The use of volunteers in disasters and public health emergencies presents a unique set of considerations for the hospital emergency manager. Volunteers can be utilized in several ways to assist in disaster relief services. However, the problems of volunteer management, credentialing,

safety, and security often preclude their utility in the acute disaster environment unless significant pre-planning for their use has occurred and their arrival is through a pre-defined system. Cone et al. describe "convergent volunteerism" (the influx of citizens and/or health providers to a major incident) as a "critical problem" in disaster management.[24] Intuitively, you may think that the outpouring of community support to assist in rendering aid during a disaster or other public health emergency is a welcome show of support for disaster victims. However, the reality is that convergent volunteerism brings with it security, resource, and worker safety problems that require personnel and critical resources to manage.

In their discussion of convergent volunteerism in the September 11 terrorist attacks in NYC, Cone and colleagues discuss the myriad of additional challenges and problems that the unsolicited and often intrusive behavior of "Good Samaritans" imposed on the NYC responders. Issues included the unsupervised practice of medicine and paramedicine; credential verification of certified and/or licensed personnel; the performance of search and rescue operations by lay responders; the need to feed, shelter, and provide sanitary facilities for volunteers; potential injury and illness to volunteers who were unsupervised and lacked proper personal protective equipment; and personal vehicle congestion on scene access and egress.[24]

Many of these concerns may seem trivial to some who view a community response to a disaster as being the quintessential demonstration of altruism and support for fellow citizens. However, as mentioned by Cone and colleagues, untrained and unauthorized volunteers can ultimately put themselves and others in danger, and deplete emergency response resources by attempting to provide assistance at disaster scenes. This was most poignantly illustrated during the 1995 bombing of the Alfred P. Murrah Federal Building in Oklahoma City, when an untrained and unprotected volunteer nurse was crushed by falling debris while trying to assist with urban search and rescue operations.[24]

SECURITY ISSUES

Hospitals frequently overlook the need to maintain adequate security of the healthcare facility and overall medical operations as part of both daily operations and emergency planning. The concept of "locking down" or restricting access to a healthcare facility is often contradictory to the typical hospital design and approach of open access to both patients and their families and other visitors. But during a disaster this type of control is essential for many reasons, which include but are not limited to: control of the flow of patients to the areas where care will be provided; access to the facility only by authorized staff; accounting for staff and patients

in time of evacuation; prevention of potentially contaminated patients entering the hospital from contaminating staff, other patients, and facilities; and prevention of acts of terrorism.

Security resources generally vary among hospitals. Some hospitals and trauma centers have sworn police officers present in their facilities 24 hours a day, and others may hire a private security firm to maintain safety or simply serve a concierge or customer service role. Security concerns during disasters and public health emergencies can become significant when considering the potential vulnerabilities associated with the chaotic response environment.[15,17,24–25] Specifically cited issues with security during the response to a disaster or public health emergency include access control to medical facilities; credentialing of employees, responders, and volunteers; crime scene and evidence preservation; infrastructure and resource protection; and crowd control.[15,17,24–25]

HAZMAT/CBRNE PREPAREDNESS

There is no question that in the current state of health system and public health preparedness the medical community is ill-prepared to deal with an incident that involves the management and treatment of multiple potentially contaminated victims, including those from chemical, biological, radiological, nuclear, and explosive (CBRNE) events. Multiple recent reports of hospital preparedness cite decontamination capabilities as a serious weakness of disaster readiness plans.[4–5,8–9,11,15–16,26–27] One study cites as few as 6% of Level I trauma centers as having the necessary equipment on hand to safely decontaminate a single patient.[26] Planning for these events has traditionally centered around the fallacy that patients will be decontaminated at the scene by first responders and then be triaged, treated, and transported to the ED. The decontamination process serves a dual purpose.

First, it removes the potential agent that is causing harm to the patient, and second, it prevents the spread of secondary contamination to other patients and hospital staff. We have come to realize from recent incidents involving victim contamination that many ambulatory victims will leave the scene and bypass EMS decontamination and triage, seeking medical care on their own.[11,15,19–20] The reality of dealing with an intentional release of chemical, biological, or radiological agent is that by the time acute care facilities can be made aware that an event has taken place, they may have already been contaminated themselves.[22] The specifics of hospital decontamination and worker safety are discussed in Chapter 14.

Throughout the nation, trauma systems, acute care hospitals, and first responders are unprepared for handling an event involving the release of a nuclear, biological, or chemical (NBC) agent.[8,15,26] Largely, this is due to ineffective planning and relying on resources that may not be available

during a disaster or public health emergency.[15] The most often cited weaknesses are an overall lack of training, lack of personal protective equipment (PPE), lack of resources and equipment to rapidly and reliably perform preliminary agent detection, and lack of appropriate medical facilities, equipment and supplies to effectively isolate infectious patients and manage them through the course of their illnesses.[8,15,21–22,26]

COLLABORATION AND INTEGRATION WITH PUBLIC HEALTH

In order for disaster preparedness and response to be successful, it must involve interagency resources and consider the 3C's of emergency response planning: Collaboration, Cooperation, and Coordination. Response plans cannot be designed and implemented in a vacuum. Disaster response and recovery operations will certainly consist of a multiagency response at the local, state, and federal levels. In order to ensure that the response plan is valid, and will operationally integrate with other key responding agencies, the planner must collaborate with fellow agencies and develop plans that involve aspects of interagency response. Interagency planning groups, such as the Local Emergency Planning Committee (LEPC), operate under the assumption that if a hazardous event occurs, all key public safety and health agencies will respond in a unified approach with common goals to protect the welfare and safety of the community. These principles of collaboration, cooperation, and coordination among the agencies that will likely respond to a disaster or other public health emergency will minimize unnecessary redundancy in response plans and create partnerships with agencies that can provide expertise and resources during the public health emergency response.

In a large-scale disaster or act of terrorism, such as the World Trade Center attacks in 1993 and 2001, the Oklahoma City bombing in 1995, and the 1994 and 1995 sarin attacks in Tokyo, continuous medical monitoring and follow-up of the survivors, responders, and participants in these events is needed to detect the associated long-term health effects. With the exception of large academic medical institutions that may perform epidemiologic analysis on specific cohorts of individuals, the public health community must recruit and maintain a database of affected individuals so they can study the long-term impact of these events on the health of the population. It is important to note that although the imminent threat of danger may no longer be present, the need for medical care, disease surveillance, and follow-up studies is essential to the completion of the public health role in a disaster or other public health emergency.

Additionally, public health agencies at the federal, state, and local levels have the responsibility under the National Response Framework (NRF) to coordinate and serve as the lead agency for disasters involv-

ing mass care. This may include assisting both hospitals and communities to establish alternate care sites (ACS) where patients can be directed to receive medical treatment during a public health emergency, which will allow a hospital to use its resources to treat higher acuity patients and remain open to handle routine emergencies during a pandemic or other public health emergency.

EDUCATION AND TRAINING

Reports have suggested that healthcare workers lack the knowledge to detect and manage a patient who has been exposed to a chemical or biological agent.[6,27–28] The Health Resources and Services Administration (HRSA) survey helped to illustrate the lack of training and education among trauma center and hospital staff by reporting that only eight states required employees to be trained in disaster-related topics, two states required training in biological agent topics, and two states required training for chemical-related topics.[8] Additionally, training for EMS personnel was equally poor because only six states required prehospital providers to have education on disaster-related topics, only one state required biological agent training, and three states required education on chemical agents.[8]

EQUIPMENT AND SUPPLIES

In the GAO's report of hospital preparedness in August 2003, they reported several findings on hospital equipment and supply resources. The survey showed that for every 100 beds, 50% of hospitals had fewer than 6 ventilators, fewer than 3 PPE suits, fewer than 4 isolation beds, and could only handle fewer than 6 patients per hour through a 5-minute decontamination shower, given their current state of preparedness.[9] Additionally, the GAO reports that most first responders lack a reliable means to detect chemical and/or biological agents in the field, and do not typically have the proper PPE to protect themselves from agent exposure.[9] The HRSA evaluation of state trauma systems showed that the availability of PPE for healthcare workers was significantly lacking among states because only one state (Ohio) had enough PPE resources immediately available for its EMS personnel, and only one state (New Jersey) had enough PPE resources immediately available for its hospital personnel if a chemical or biological agent release occurred.[8]

In addition to PPE issues, hospitals and trauma centers often lack the inventory of equipment and supplies necessary to effectively treat an influx of potentially affected patients.[8–9,14–16,26] Many hospitals, in a strategy to reduce overall costs, replenish their central supply on a "just-in-time" basis, clearly ineffective in preparing to treat a mass

influx of patients.[18] Pharmaceutical access is another concern among healthcare facilities. As demonstrated in the fall 2001 anthrax scare, hundreds of postal and healthcare workers required postexposure prophylaxis after potential exposure to the agent. Maintaining an adequate pharmaceutical stock of essential antibiotics, antidotes, and specialty medications in case of a disaster is often viewed as cost prohibitive due to the shelf life and daily usefulness of certain drugs.[18] Although this has improved slightly over the past 6 years, hospitals around the country still struggle to build the internal capacity necessary to perform emergency decontamination of patients from hazardous substance incidents and properly protect their staff, patients, and visitors from secondary contamination.

WORKER SAFETY

A report released by HRSA on the national state of the trauma system and EMS preparedness for disasters and mass causality events showed that only one state in the country thought that its hospital workers would be adequately protected in the event of a biological (but not chemical) agent attack.[8] Additionally, only one state reported that its EMS system would have access to PPE in the event of a bioterrorism event.[8] Similar research has underscored a general lack of protection for the public health workforce against any type of chemical, biological, or radiological contamination in the event of a disaster.[8] A major role for the public health community during an event is to ensure the health and safety of all disaster workers.[13,15]

DRILLS AND EXERCISES

Criticisms regarding drills and exercises are notable throughout the preparedness literature.[6,9,11,15,21,26] Comments include statements that exercises are not realistic, drills tend to be conducted with advanced warning on shifts with favorable staffing levels, and with equipment and resource levels at their best, etc. Therefore, the drills bias any useful results from the exercise.[15] The purpose of conducting drills and exercises (besides remaining in compliance with accrediting bodies) is to assess whether or not a facility is adequately prepared to handle an incident with relatively low probability, but with extremely significant impact on the health system, and to identify areas that need improvement on an operational and planning level.[15] Exercises that simply go through the motions or are conducted with limited realism, under optimal conditions, or are simply haphazardly conducted to meet regulatory or legal requirements are futile and worthless assessment tools that will only perpetuate a hospital's state of unpreparedness.[15]

EMERGENCY DEPARTMENT DISASTER OPERATIONS

The importance of the ED's role in disaster and emergency preparedness is discussed in several sources.[4–12] The American College of Surgeons mentions that the ED is a major strength of a trauma center.[12] They refer to the ED staff as "highly competent" and often "experts" in the medical management of chemical, biological, and radiological casualties.[12] Among the many strengths of the ED is the ability to integrate two major components of the trauma system: prehospital and definitive care. The emergency department maintains constant communications with the EMS system and serves as the direct point of entry for prehospital providers into the hospital or trauma center. Emergency physicians represent a critical link in the chain of survival by anticipating the resources that ill and injured patients will need upon arrival at the ED, and initiating appropriate lifesaving medical care until specialty resources become available.[4–11]

TRAUMA CENTERS

The roles of trauma centers during a disaster or public health emergency are consistent with their daily activities in the treatment of injured patients. Triage and treatment of injured victims after a disaster is frequently discussed as a central role of the trauma center in the aftermath of a disaster.[6,8–11,13,15–16,18,23,25–29] It is well documented that trauma centers are adept at the care of the injured victim, and are viewed as the best choice for the triage and treatment of disaster-related injured victims.[4–10,12,14,17,23,25–31] Trauma care is identified most frequently as the major strength of the trauma center and the trauma system. Another expectation is that trauma centers and acute care hospitals will be able to treat mass numbers of affected patients as well, including the rapid triage and treatment of all casualties (including those from CBRNE events), decontamination and/or isolation, and quarantine of contaminated or potentially infectious patients. Trauma centers are also expected to have access to essential equipment, supplies, and pharmaceutical agents.[4–6,8,14–15,17,23,27–29,32]

The Role of the Hospital/Healthcare Emergency Manager

What then, is a hospital or healthcare emergency manager? A hospital or healthcare emergency manager is an individual employed by a healthcare organization whose job is to coordinate the emergency management functions of the hospital. This may include many responsibilities

depending on the hospital or healthcare system, the location of the facility, the size and type of facility or organization, and specific local issues or threats and activities. While there may be variation in the role, almost universally the hospital/healthcare emergency manager will perform hazard vulnerability analysis, planning activities, coordination of the hospital's disaster and other emergency management planning groups or committees, design and conduct training programs, perform drills and exercises, interact with other agencies and organizations involved in healthcare emergency management (e.g., local public health department, local office of emergency management, EMS, local law enforcement, and state agencies), and maintain compliance with regulatory agencies and accreditation organizations such as the JCAHO. Many hospital or healthcare emergency managers are individuals who have these duties in addition to their normal occupational roles in the healthcare organization. Typical positions within healthcare organizations that also perform emergency preparedness activities include nursing managers, educators, administrators, security managers, environmental health and safety administrators, facilities or physical plant directors, or emergency medical services coordinators.

Few hospitals have taken the initiative to hire a full-time emergency preparedness coordinator for several reasons. First, there is no direct revenue return on investment in hospital preparedness. Emergency management is rather a fixed but necessary operating cost. In the United States, hospitals and healthcare organizations need to generate a profit. Even in not-for-profit hospitals, CEOs need to be able to show that profit increased in order to justify growth and add services for their patients. Activities that cannot improve the profitability of the organization often remain unfunded. Second, there is a shortage of qualified individuals to fill these positions. As mentioned before, most hospitals have added the duties and responsibilities of preparedness onto an existing full-time employee and this individual had to teach themselves how to perform these added duties. Most individuals who serve in full-time hospital emergency manager positions have a public safety background or a clinical background and have had to learn the discipline of emergency management.

Until recently there have been few higher educational opportunities for people who wish to learn the discipline of healthcare emergency management. In 2010, the Federal Emergency Management Agency's (FEMA) Higher Education Program listed only 10 undergraduate and graduate programs combined that focus on both healthcare and emergency management. Many of these are new programs that have only been in existence for a few years. There have been degree programs in general emergency management, but only a few that apply this discipline to the public health or hospital environment.

If you don't seek out a formal degree, how do you become knowledgeable in hospital emergency planning? Initially, it begins with your current role. If you are a healthcare worker who needs to learn the finer points of emergency planning, drills and exercises, and incident management, then you could benefit from FEMA's independent study program or professional development series. On the other hand, if you are an emergency management professional with little knowledge of the healthcare environment, you may benefit from continuing education in health and medical issues such as the strategic national stockpile, emerging infectious diseases and pandemics, the health and medical impact of terrorism and weapons of mass destruction, and the health impact on populations displaced as the result of disasters.

This text is designed specifically for individuals who wish to learn the applied discipline of healthcare emergency management, and for all other personnel in a hospital or from other disciplines who will work with either a hospital or any other aspect of a healthcare system in planning for and responding to disasters, terrorism, and public health emergencies. Whether you are a college or graduate student learning the fundamentals of public health or healthcare emergency management, or a current healthcare professional looking to increase your current knowledge in order to apply emergency management principles to your trade, this book is designed to meet your needs. There is a lot to learn, and this text is just the beginning. This emerging field is exciting, challenging, and rewarding. We wish you luck on your journey!

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