

Review

The World Trade Center Attack**Disaster preparedness: health care is ready, but is the bureaucracy?**

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Abstract

When a disaster occurs, it is for governments to provide the leadership, civil defense, security, evacuation, and public welfare. The medical aspects of a disaster account for less than 10% of resource and personnel expenditure. Hospitals and health care provider teams respond to unexpected occurrences such as explosions, earthquakes, floods, fires, war, or the outbreak of an infectious epidemic. In some geographic locations where natural disasters are common, such as earthquakes in Japan, such disaster practice drills are common. In other locations, disaster drills become *pro forma* and have no similarity to real or even projected and predicted disasters. The World Trade Center disaster on 11 September 2001 provides new information, and points out new threats, new information systems, new communication opportunities, and new detection methodologies. It is time for leaders of medicine to re-examine their approaches to disaster preparedness.

Keywords bioterrorism, detection, disaster planning, terrorism

The Joint Commission for the Accreditation of Healthcare Organizations (JCAHO) requires hospitals to have a disaster plan and to periodically run internal (i.e. a fire in the basement) and external (i.e. 100 injuries at a rock concert) disaster drills. These drills often involve a simulated traumatic event, such as an explosion, a fire, a building collapse, or a major plane crash. Everyone involved is aware that the event is a drill and patients with simulated injuries appear, often disrupting busy emergency departments and hospitals. Most drills evaluate an individual hospital's response and rarely evaluate a region's ability to adapt to varying resources and governance requirements. These drills seem to bring in (simulated) patients in a manner unlike that of real disasters.

Lessons learned from the multi-city 11 September 2001 disaster suggest that previous planning methods did not prepare the hospitals for what really happened. For example, patients suffering trauma in Washington DC were taken to Walter Reed Hospital, not a designated trauma center, which

was not part of a planned regional response. In New York City, the bulk of the injuries arriving at nearby hospitals were not life threatening, tying up manpower and resources. All the lessons learnt from previous JCAHO drills vanished as situations erupted that could not have been anticipated.

There are ways, however, in which those in charge have previously dealt with unexpected situations effectively. All hospitals experience mini-disasters, such as no intensive care unit beds during each year's flu season, spillage of insecticides in a large closed office, and 20-car pile ups on a freeway, that never reach the national press or even local public notice. Administrators, engineers, chiefs of staff, emergency center physicians, and seasoned head nurses imprint their experiences in their personal memories and adapt these experiences to the next catastrophe. This adaptability is undoubtedly as valuable, if not more so, as the written disaster plan or JCAHO mandated drills. In the light of the lessons learned from the World Trade Center attack, the JCAHO

should make major changes in their disaster preparedness process.

Bureaucracy

Bureaucracy breeds inaction. As many as 60 federal agencies and 30–50 diverse public safety and security agencies, offices, and organizations exist in most large cities, many functioning independently of and without coordination with others. At the operational level, these public safety groups often do not even have the ability to communicate with each other by common radio frequency. These agencies, often involving multiple counties and crossing numerous authorities, must be able to communicate and function as one unit for the good of all.

In the flood following Tropical Storm Allison on 6 June 2001, the Houston Fire Department Emergency Medical Services were able to communicate with the only remaining Level 1 trauma center and preserved it for major life threatening emergencies. Unfortunately, the 35 or so regional private ambulances were unable to communicate with either the Houston Fire Department Emergency Medical Services or the hospital, and consequently overloaded the Level 1 trauma center with clinic patients.

Disasters will forever be dated as pre-World Trade Center and post-World Trade Center. Terrorism is as old as recorded history, but it took on a new meaning as of 11 September 2001 (it is ironic that this date corresponds to the emergency call sign of 911). Terrorism has in the past been local, but now it is international. Recent books, both fiction and nonfiction, repeatedly alert (and often frighten) the public to the many faces of terrorism. Some of these books, such as *Germs* [1] and *The Cobra Event* [2], cite acts of bioterrorism.

In early October 2001, the threat of chemical–biological terrorism (CBT) has reached new heights of public awareness, creating some panic and hysteria, and creating significant heightened awareness and frustration in hospitals and among health care workers. Documents addressing CBT preparedness at the regional government and hospital level are being revised at breakneck speed but with questionable efficiency. A diversionary and ‘cover-up’ approach is often applied to a perceived problem by buying equipment and stockpiling drugs prior to establishing a realistic policy and developing an infrastructure of real-time response.

Detection systems of incident reporting, Gram staining, bacterial culture, and purchasing of new chemical identification may not prevent a viral or chemical contamination of a hospital emergency department. The first several contaminated patients might go undetected because their symptoms resemble common illnesses. For instance, every emergency center in the United States receives patients daily with pneumonia, fever, bronchial wheezing, conjunctivitis, nausea, vomiting, flu, and diarrhea. These are the very symptoms of

exposure to most agents of CBT. These operational and logistical problems offer tremendous challenges to the health care systems of a region. With the tremendous national interest in CBT, hospitals and their purchased stores of resources will be rapidly overrun by federal agents once a CBT event has been identified. The hospital personnel will then lose control of the governance, and bureaucracy will overwhelm much of their disaster plan. Perhaps these federal and governmental interventions should be part of every hospital’s disaster drill to ensure everyone is ‘on the same page’ when the need occurs.

Lessons learned in 2001

We must never disregard or become desensitized to the lessons learned from the disasters of 2001 (Houston floods, World Trade Center/Pentagon plane crashes, anthrax mailings) that have brought the lessons from prior disasters into perspective. They all share similarities from which we can learn. We have learned that communications from command centers and hospitals to private ambulances are improbable. Potential health care providers in the community cannot be adequately identified and utilized for many logistic and turf impediments (i.e. who is in charge?, who gets the credit?, which agency has specific authority?). Following the earthquakes in Mexico City, the explosion in Oklahoma City, the World Trade Center attack, the floods in Houston, and the events in Atlanta during the Olympics (to name just those within North America), large numbers of major trauma patients did not arrive at the hospitals and trauma centers for reasons that simply must be fixed. This happened simply because there were no large numbers of patients with major and life threatening wounds that arrived at the hospitals alive.

During the World Trade Center rescue operations, trauma patients in Washington DC were taken to a hospital without a trauma program (Walter Reed), while a hospital with a trauma program in the Washington DC area did not receive major trauma patients. This is not acceptable. With its stated mission of preparedness for medical support during times of war, perhaps the US Army’s largest hospital, Walter Reed, should develop a trauma center for the greater Washington DC area. It is imperative that such a designated trauma center concept be adequately funded and maintained because, with the closure of the DC General Hospital, Washington DC is left with a paucity of trauma care facilities, and it is logical that the US Army’s largest hospital should have a center that corresponds to the major mission of military medicine. Furthermore, in each of the cities where disasters have occurred, the message continues that there is often an excess of doctors but too few skilled nurses, especially in emergency rooms, intensive care units, and operating rooms. We must create pay schedules that encourage people to enter this professional field, and treat them accordingly.

The multiple governmental agencies in a region must create effective and practical methodologies for coordination and

communication. The ability of the Federal Emergency Management Administration and the National Disaster Management System to respond to multiple locations is in question. It has been discovered that, in many regions, the National Disaster Management System identification of available beds is carried out solely at the hospital administrator level, and that critical care and trauma directors have been totally left out of the local loop regarding bed allocation and capability of the medical staff response. Just as the American College of Surgeons Trauma Center Verification Review Committee, the JCAHO disaster drill requirements, and the local disaster plans need to be updated, the many and often confusing and overlapping federal programs (especially the Federal Emergency Management Administration and the National Disaster Management System) need careful re-evaluation. The exact role and capability of the military medical establishment requires very special discussion, as it will be imperative in maintaining order.

Are we prepared?

The most common question asked of medical leadership is 'Are we prepared for x ?', where x denotes the unexpected and the unknown. The answer, of course, is that one can never be totally prepared. The challenges and frustrations of the 11 September 2001 disaster cannot be overestimated. Health care providers, of all levels, are caring and versatile groups, and are ready, willing, and dedicated to providing the best multifaceted care possible during unexpected disasters, but there must be effective frameworks in which that care is carried out. This framework must be constructed by leaving egos and personal agendas at the front door and working for a common benefit. Health care providers are not willing or prepared to discuss the numerous political and economic issues that underlie health care policy making, but perhaps the events of 11 September 2001 will encourage us all to begin to address these outstanding nonmedical barriers to complete readiness.

KM has been part of disaster management planning at hospital, medical school, city and regional levels for more than 25 years. He is part of the Greater Houston Metropolitan Medical Strike Force and is on the Mayor's Medical Blue Ribbon Panel for Bioterrorism Planning.

Competing interests

None declared.

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This article, and the series it is part of, is dedicated to the first responders – fire, police and medical personnel – who attended the World Trade Center disaster of 11 September 2001. They did not hesitate to place themselves in harm's way to rescue the innocent, and without their efforts many more would have perished. They will not be forgotten.

References

1. Miller J, Engelberg S, Broad WJ: *Germs: Biological Weapons and America's Secret War*. Simon & Schuster; 2001.
2. Preston R: *The Cobra Event*. Ballantine Books; 1998.