Editorial

# Ethical and Legal Challenges in Disaster Medicine: Are You Ready?

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You are on call the weekend a category 5 hurricane made landfall and you, along with your colleagues, are trying to evacuate approximately 2000 people (approximately 200 patients) from the hospital which is now surrounded by 8 to 10 ft of floodwaters. Those trapped in the floodwaters are trying to break into the hospital. The National Guard and state police have gone to other parts of the city. Food and water are being rationed. The generators are not working. There is no running water and no electricity, and outside temperatures are more than 105°F. Communication with the outside world is sporadic. Patients are moaning and others are frightened. Chaos reigns. You and your colleagues have triaged the patients and are awaiting rescue. It is day 4 of lockdown and few patients and others have been evacuated, some to unknown "drop sites." Children are crying as they are being evacuated without their mothers, who have stayed to care for patients. Hospital administrators were just told by state authorities that "hospitals are low priority" and if you wanted to be evacuated, you had to "save yourselves."

## Are You Prepared for This?

Hurricane Katrina was the deadliest US storm in 7 decades; 500,000 people were evacuated and nearly 90,000 $mi^2$ were declared a disaster area. The aftermath of Hurricane Katrina highlighted the many challenges that healthcare providers can face in the event of the complete collapse of the city, hospitals, and local government infrastructure. It soon became obvious that the public, the medical community, and government agencies were woefully unprepared, leading to what is considered by many to be the worst catastrophe on American soil in modern times. Although most physicians were not responsible for formulating the disaster plans, they were left to address the inadequacies of these plans, trying to care for patients with few resources. There were major deficiencies with most hospital plans, including (but not inclusive of) the following: hospitals were used as shelters; there was lack of generator power; there were no plans for full hospital evacuation; most patients were brought to drop sites, not hospitals; the evacuation process was slow because of failures of government at all levels; security, communication systems, and clean water were almost nonexistent; and civilian doctors had little to no disaster training. The public was grossly uneducated regarding standards of care during catastrophes, which led to feelings of betrayal and abandonment and these in turn led to public distrust and legal action. Many lessons can be learned from the Katrina experience that are applicable to all disaster plans.

### Triage

Although triage is part of all disaster plans, most physicians are unfamiliar or uncomfortable with the process. The military defines protocols used during disasters as the order of evacuation and treatment of patients in accordance with the recognized triage process applicable when disastrous conditions may prevent evacuation or treatment of all patients. The treatment of patients becomes population based and healthcare providers are to do the greatest good for the greatest number. The World Medical Association revised its position paper in 2006 regarding the ethical issues facing physicians during disasters and proposed an additional triage category called beyond emergency care. Those beyond emergency care are the patients whose conditions exceed the available therapeutic resources. The World Medical Association stated that it is ethical for a physician not to persist, at all costs, in treating these individuals, and the decision not to treat (in accordance to priorities dictated by the disaster situation) cannot be considered a failure to come to the aid of a patient.[1] *This is one of the most difficult situations for civilian physicians to face*; however, it is vital that triage protocols are not only written but also that all physicians are familiar with them so that the process is proactive, not reactive.[2] The latter occurs when physicians make rapid decisions based on their best judgment without a command structure to support their decisions. This can and most likely does occur in a disaster when plans are inadequate. No physician should ever be put in this position. It is these decisions that are at more risk for criticism and legal action.

### Ethical Challenges

To add to the ethical challenges, protocols do not always take into account the nuances that are unique to every disaster and situation that can occur. In 2008, the Task Force for Mass Critical Care was the first to publish a framework for allocation of resources in the event of a mass critical care event such as pandemic influenza. One objective of the framework was to ensure that scarce resources were used in a uniform, objective way (distributive justice). The task force published exclusion criteria for those patients who would not receive a ventilator; the protocol excluded patients who had a high risk of death and little likelihood of long-term survival based on the Sequential

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Organ Failure Assessment score.[3] They realized that protocols with such exclusionary criteria were fraught with ethical and legal issues and that it was emotionally difficult to write these protocols despite the fact that they were experts in their fields and plans were made for a relatively straightforward disaster. Unfortunately, the Sequential Organ Failure Assessment score is not always applicable. During Hurricane Katrina, triage was at its most basic as was care rendered. At one of the downtown hospitals, patients who could open their eyes and state their names were given intravenous fluids and those who could not did not receive care.

Healthcare providers were faced with other ethical dilemmas in the aftermath of Hurricane Katrina: How are food and water to be rationed among nonpatients when there is not enough for everyone? Do pregnant women take priority because of the rights and life of the fetus? Who gets dialyzed first when all dialysis patients are equal? Dilemmas also applied to the evacuation process of patients and nonpatients following the collapse of a hospital. Should families be evacuated together? Should mothers and infants from the neonatal intensive care unit/nursery be evacuated together? Should pregnant girls and women be evacuated first? How should it be relayed to patients and their families that those who are critically ill and/or have a do not resituate order will have a lower order of evacuation? Lastly, how should it be relayed to the patient/family members that treatment will not be given or withdrawn according to protocol. In the aftermath of Hurricane Katrina some patients begged to be evacuated as a family because they knew that they may never see each other again. Other family members tried to reverse the do not resituate status of their loved ones when they learned that these critically ill patients would be among the last evacuated. At one of the drop sites, people shoved and pushed each other to get onto a bus that was leaving New Orleans. Not considering the solution to these inevitable challenges before disaster strikes is itself unethical.

All protocols provide palliative care to people who will not survive. Although this aspect of each plan may seem straightforward, this is not always the case; there are challenges in providing palliative care. First, there may be no narcotics to give to people who are suffering. In the first hours following the 2010 earthquake in Haiti, there were no pain medications to administer to people who were dying. Second, some healthcare providers may not be comfortable administering pain medications to patients who are dying because they fear that it may hasten death. A nurse working with a disaster medical assistance team at the New Orleans airport following Hurricane Katrina refused to give a dying patient morphine and Ativan as ordered by a physician for fear of litigation. She was afraid that she would be held accountable for that person's death. Third, a physician may be caring for a patient with whom he or she has no previous relationship; there have been no previous discussions regarding end-of-life care with the patient and family members, which can lead to misapprehensions of actions taken by healthcare providers by the patient/family. This is why it is imperative that the public be educated regarding disaster protocols and that healthcare professionals agree to the same or similar protocols regarding allocation of resources and palliative care.

Building on its earlier report regarding crisis standards of care, the 2012 Institute of Medicine report provides a framework that ensures that all physicians are following consistent protocols that take into account legal and ethical issues.[4] It is hoped that this framework will provide guidance, confidence in decision making, and legal protection for healthcare workers. It also has been suggested that to prepare physicians to make difficult decisions during disasters, an educational curriculum required for medical students, residents, and practicing physicians is necessary.[5]

## Duty to Care

The American Medical Association's (AMA) Physician Obligation in Disaster Preparedness and Response articulates that a physician's ethical obligation to provide urgent medical care during disasters holds even in the face of greater-than-usual risks to his or her own safety, health, or life.[6] At the 2004 annual meeting, the AMA House of Delegates adopted a recommendation made by their Council on Ethical and Judicial Affairs that states that when participating in disaster responses, physicians should "balance immediate benefits to individual patients with ability to care for patients in the future."[6] This recommendation takes into consideration that the workforce is not unlimited; however, the question remains: "Are physicians likely to stay during a disaster"?[7] In 2009, a survey was completed by 18.4% (3426) of all hospital employees at the Johns Hopkins Hospital regarding their willingness to work during a pandemic. Physicians represented 42.7% of the 1170 clinical respondents. Seventy-nine percent of physicians said they would report to work if asked and 90.4% said that they would work if required. Those who believed their work would have a high impact were six times likelier to agree to disaster duty.[8] During Hurricane Katrina many healthcare providers evacuated to bring their families to safety, leaving many patients unattended. When planning for disasters, those in charge must take into consideration that the workforce is not guaranteed.

The circumstances surrounding the rescue at one of the flooded hospitals during Hurricane Katrina clearly demonstrate the ethical issues and challenges discussed above and the emotional toll that they take on those providing care. At the time Hurricane Katrina made landfall, Lindy Boggs Hospital in New Orleans had 126 patients in addition to staff members, family members, pets, and families from the surrounding neighborhood sheltering in place. Firefighters arrived from north Louisiana on August 31, 2005 to evacuate the hospital. The patients were previously triaged into three groups: A (ambulatory), B (wheelchair), and C (critical). It was intended that the most critical patients would be evacuated first; however, in accordance with triage in a mass-casualty event,


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the medical staff was told by the rescuers that critically ill patients would be evacuated last, when more help arrived, so that those deemed able to survive could be evacuated quickly. This pronouncement was emotionally difficult for both physicians and firefighters, but it was the physicians, not the rescuers, who were responsible for relaying this information to the patients and their family members. After one of the firefighters passed up a patient marked "C", the patient's wife told reporters that if she had had a gun she would have shot him and then probably herself.

Before the evacuation process was complete, the rescue was aborted as a result of gunfire. Civilians were shooting at the rescue helicopters. Firefighters pleaded for more time, but were denied. They did not know when or if they would return to the hospital. Patients were left behind, although a couple of patients in the intensive care unit were taken to dry land by a few physicians who stayed and tried to help. These patients ultimately died. Dr James Riopelle, an anesthesiologist, later told reporters, "There was no good solution. There were only bad choices."[9,10]

Although the rescue effort was called off by those in command, it was the physicians who were left to address the emotional, legal, and ethical turmoil of that decision. Fire personnel and the military were following orders and thus are protected from civil liability, but physicians are not. The physicians who rescued the patients faced wrongful death lawsuits, which were ultimately dropped. This begs the question of how much should a physician be expected to sacrifice as a result of providing care in chaos? Should medical staff stay with dying patients not knowing whether they will be evacuated?

## What Would You Have Done?

### The Aftermath

The aftermath of a disaster can be worse than the event itself. Following Hurricane Katrina many physicians and healthcare workers were homeless, jobless, and faced financial ruin overnight. Among physicians there were many suicides, depression, and posttraumatic stress disorder (PTSD), which also was found in other first responders and the public. Of 912 police officers in New Orleans, 26% reported symptoms of depression and 19% reported PTSD.[11] In 2007, PTSD was diagnosed in more than 38% of patients reporting to an emergency department in New Orleans, which is 10 times the prevalence in the general population.[12] Researchers found that the incidence of mental illness worsened over time. Two years after the storm, PTSD increased to 20.9% (from 14.9%), the incidence of serious mental illness rose to 14.0%, suicide ideation rose from 2.8% to 6.4%, and creation of suicide plans rose from 1% to 5%. These increases were due to secondary stressors.[13] An additional challenge was the lack of mental health resources. Eighty-nine percent of psychiatrists left the greater New Orleans area, when people were most in need.

### Missing Pieces

Despite the improvements in disaster planning since Hurricane Katrina, missing pieces persist. There is no standard triage protocol universally accepted in the United States for mass-casualty events. "Standard" triage is not applicable to chronically/critically ill patients housed in shelters during disasters, and there is no triage system to provide reliable distinction among similar patients. To date, there is no legal standard of care for treating patients during a mass-casualty event; however, it is hoped that following disaster protocols will provide some protection to healthcare workers.

All healthcare personnel who work during disasters need legal protection, particularly those who live and work in the disaster-affected area. Most laws protect volunteers, government officials, federal employees, and the military and they are provided civil immunity. Many nurses and physicians faced civil suits following Hurricane Katrina, when patients died while waiting for evacuation, a process over which they had no control. The government officials who were responsible for the failures following the storm were not sued because they were granted civil immunity. Only the individuals who stayed and cared for patients were sued, but those who left their patients without care, were not. It is obvious that there are many gaps in legal protection. These events, in addition to criminal charges filed, led to the formation in 2008 of the Committee for Disaster Medicine Reform. Louisiana was the first state to pass model disaster legislation into law that protects healthcare workers (not institutions) during a declaration of disaster. These laws do not protect against intentional acts or willful misconduct.[14]

### Solution

Although it may not be possible to plan for the unimaginable, most ethical and legal conflicts can be avoided with disaster training and familiarity with disaster plans. The author recommends that there be hands-on disaster drills that include both medical and ethical decision making. During a real event, professionals must make consistent judgments and decisions based on the plan, regardless of their own emotions and beliefs and drills may help alleviate this situation. Nurse Terri Edens reported that it was the repeated disaster drills for a tornado scenario that allowed the team of healthcare professionals at St John's Regional Medical Center in Joplin, Missouri to evacuate the hospital in only 90 minutes, when a tornado struck on May 22, 2011. Disaster plans also should include onsite mental health support for healthcare workers; no one is immune from the effects of trauma. Some healthcare providers did not return to work at St John's after the tornado and many did not return to work after Hurricane Katrina because of the severe trauma they endured.

To maximize patient outcomes, training should be mandatory for all medical students and residents as part of their



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education.[1] The National Disaster Life Support Foundation of the AMA provides core, basic, and advanced disaster life support courses.[15] The author also recommends that disaster training be mandatory for all practicing clinicians and other healthcare workers to obtain hospital privileges. It would be most beneficial if all hospital employees were required to undergo some form of disaster medicine training as part of orientation and that the institution's disaster plan is discussed in detail. After all, no one knows where he or she will be when disaster strikes.

### Transparency

The medical system that collapsed in Hurricane Katrina brought to light the difficult decisions facing healthcare providers. It is important for the public to understand the limitations of the medical system during disasters and for them to have fair input regarding to whom the limited resources should be given. This will ensure public trust and confidence in the fairness of these critical medical decisions. The magnitude of destruction and human suffering caused by Hurricane Katrina was unprecedented, but it gives the people responsible for making the disaster plans a clear vision of what is possible.

## Conclusions

Many lessons were learned following Hurricane Katrina that can help all with disaster planning. The following are some of those lessons: hospitals should not be used as shelters; redundancy in communication systems and extra security are vital; water is essential (dig a well if necessary); all patients should be evacuated before the event, if possible; know before the event to which locations patients will be evacuated (sister hospital) and the means of transportation; electronic medical record access is necessary to care for all patients postevent; and disaster training for all hospital personnel is vital. Everyone needs to be proactive; do not depend on anyone else to tell you the disaster plan—get involved.

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