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Disaster Medicine: Every Physician's Second Specialty Twenty-First Century Fears

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All one needs to do is turn on the TV news – or log on to the Internet – to see how overwhelming the range and ferociousness of disasters taking place around the world can be. The recent earthquake from Washington, DC, to New York City, as well as the devastation of Hurricane Irene serves as a reminder that potential disasters can strike anywhere, anytime, even in the most of unexpected places. FEMA's "A Time to Remember, A Time to Prepare" Campaign, running this September during the tenth anniversary of 9/11, and Disaster Preparedness Month should motivate all physicians to action.

An executive summary published by the National Academy of Sciences defines disaster as "an event that creates significant, short-term spike in the demand for emergency care services requiring extraordinary measures."[1] Given the one-two punch of the earthquake and cholera outbreak in Haiti and the earthquake, tsunami, and nuclear reactor meltdown in Japan, people are frightened and looking for answers.

This fear is nothing new. Ever since September 11 Americans have tried to deal with the myriad of threats from natural disasters, pandemics, bioterrorism, and radiologic events in ways both rational and irrational. Some try to organize to close facilities, such as the Indian Point Nuclear Power Plant in New York. Others stockpile potassium iodide or Cipro, unsure of how to handle the scope and severity of life in the twenty-first century.

In trying times, citizens turn to their medical professionals for answers. According to the American Medical Association, physicians need to provide medical expertise and work in tandem with others to create public health policies that improve both the effectiveness and availability of medical care during epidemics, terrorist attacks, and natural disasters. Since 2007, the American Board of Disaster Medicine (ABODM), the nation's only board of Disaster Medicine, has worked diligently to bring greater awareness to the need of physicians to make this their secondary specialty. ABODM has worked to fulfill a pressing need by developing this area of medical specialization that will undoubtedly result in a significant diminution of morbidity and mortality in all kinds of disasters in future years. President George W. Bush called for the creation of Disaster Medicine as an independent medical specialty on October 18, 2007. ABODM has been working towards fulfilling this need and Presidential directive, as the government needs a mechanism to identify those medical providers who have the requisite knowledge and skill to be involved in planning and preparedness activities.[2]

One valuable resource in times of an emergency is future physicians. The bad news is that these medical students are not getting adequate training in order to be of help during a disaster. Disasters know no boundaries, making it imperative that all medical students and practicing physicians, regardless of their specialty, be properly trained in disaster medicine. The good news? These future doctors have a strong desire to become knowledgeable about this area of medical expertise.

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The Role of Medical Students During Times of Emergency

A survey of 523 students published in 2009 showed that only 26.2% of future doctors thought they were receiving adequate training to deal with a pandemic influenza.[3] The numbers for a natural disaster (17.2%) and radiologic event (13.4%) were even worse. Nearly 85% of students did not even know to whom they should report in times of disaster. And only 2.9% were volunteers with the Medical Reserve Corps (MRC), although 81.3% showed an interest in volunteering for the MRC. A few medical schools have started formal MRC units on campus. For example, the University of Minnesota's Medical Reserve Corps has more than 1,000 members, including staff, faculty, and medical students.

Despite the woefully low numbers of students who feel as if they have been given adequate disaster training, the majority of students believed that they **should** be involved in public health emergency planning efforts as well as response and recovery efforts.

This is not to say that medical students should be on the front lines of clinical care during a state of emergency. Rather, they can provide surge resources, getting involved in the manning of telephone hotlines during a pandemic, for example, or providing prophylaxis or immunizations in response to a biological threat.

The findings clearly indicate a worrisome gap in disaster medical education and training given the dangerous state of the world in the twenty-first century. The authors of the survey recommended that organized medicine hold a summit in conjunction with the Uniformed Services University School of Health Sciences, which is the nation's federal health sciences university.

The goal of this summit would be to elevate training in disaster medicine as one of its core competencies. By integrating disaster medicine into the core curricula of medical schools, medical students could become future leaders in disaster preparedness. Such an emphasis on disaster medicine would also underscore the medical community's role as a leader in *any* health emergency.

Given the myriad problems facing the medical community in times of disaster, there is every reason to utilize the untapped potential of these students, especially since they have such a clear desire to be of service during times of great need. Incorporating a disaster curriculum into medical school training is a necessary step in facilitating the process of preparedness during a natural disaster, pandemic, biological attack, or radiologic event.

Gaps in Training for Physicians and Other Staff

Sadly, it is not only medical students who are lacking in disaster preparedness education. A national study by Chen and colleagues found that regardless of geographic location, the vast majority of physicians (75%) did not feel they had been given adequate training to respond to a bioterrorist attack.[4] And less than 30% of family physicians surveyed thought that the United States could respond effectively to a bioterrorist attack. In order to address these urgent issues the American Board of Disaster Medicine believes that the unification of highly skilled physicians sharing best practices in disaster preparedness would greatly assist in ensuring that all are equipped to deal with a myriad of potential dangers to society.

Given the volatile state of political systems throughout the world, this is a true cause for alarm. Early detection and reporting by medical professionals is vital during any disaster, be it bioterrorist attack, infectious disease outbreak, or another public health emergency. Yet, despite efforts to train local physicians beginning in 2002, a study of practicing and retired physicians in Tarrant County, Texas, published in 2007 found that the majority of those responding reported no previous bioterrorism preparedness or response training.[5]

This finding was consistent with other studies showing a lack of preparedness in this vital area of disaster medicine. Equally important, those who did receive training were far more willing to serve in the front lines in the event of a pubic health emergency. Since training correlates so closely with the likelihood of physicians serving during disasters, this highlights the need for more education in this crucial area of medicine. The existence and mission of the American Academy of Disaster Medicine is to ensure just that. Its board, ABODM® was formed by physician leaders from all specialties to meet the myriad needs created by the disaster planning, preparation, education, response and recovery environment, which private and public institutions should tap into.

At the Breaking Point

One could make the case that the entire medical system is at the breaking point when it comes to being ready for a catastrophic event. The Institute of Medicine's (IOM) Committee on the Future of Emergency Care in the United States Health System studied the emergency care system between 2003 and 2006 and concluded that the capacity of the system to respond to even a small-scale disaster was in question. Not only are hospitals in large cities operating at or near full capacity, but also little fund-

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ing for bioterrorism and other emergency threats goes directly to hospitals.[6]

On the systems front, information technologies are a critical part of rapid decision making during an emergency. However, emergency physicians are often without the information they need about the patients under their care. The IOM recommends, "hospitals adopt robust information and communications systems to improve the safety and quality of emergency care and enhance hospital efficiency."[6]

According to the IOM's report, training efforts varied widely, an inconsistency that is a cause for great concern. While 92% of hospitals trained their nursing staff to respond to at least one type of threat, only 49% of hospitals gave residents and interns such training. It should be noted that this is an improvement over pre-9/11 standards, yet a situation that hardly inspires confidence given the volatile state of affairs both in this country and worldwide.

One area of extraordinary challenge is protecting hospitals and their staff from biological or chemical events. The SARS outbreak in Toronto in 2003 showed how difficult it is to contain even a small outbreak, given that in such a situation health professionals can become both victims and spreaders of disease.

Negative pressure rooms that prevent the spread of airborne pathogens could be a huge help during a terrorist event or pandemic, but there are few such rooms available. Without them, a hospital could quickly become overwhelmed during such a disaster, posing a grave threat to both hospital workers and patients.[6]

Summary

There is no denying that this country is inadequately prepared to deal with a catastrophic event. Being the global leader, and being the most advanced in medicine, the American Board of Disaster Medicine and the American Academy of Disaster Medicine believe that the United States should be setting the example in disaster preparedness and make disaster medicine every medical student and physician's secondary specialty.

To handle the lapses in the American medical system's response system, the IOM Committee recommended that **all institutions** responsible for the training, continuing education, and credentialing and certification of professionals involved in emergency care incorporate disaster preparedness training into their curricula and competency criteria.

When one takes into account how interconnected our world has become and the many dangers that confront us, it is crucial that those in the medical profession receive more training and support in order to manage those dangers effectively. Americans will always turn to physicians in times of crisis. By making disaster preparedness a vital part of medical education, future physicians will be able to handle the next major emergency from a position of strength. This will have huge payoffs in terms of lives saved, chaos avoided, and a sense that those upon whom the pubic relies are able to perform their duties in a manner that instills trust and a sense of security.

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