CURRENT FEDERAL PLANS to provide medical care to the sick and injured in a large-scale mass casualty disaster are outdated and inadequate, putting the American public at great risk. The country faces a variety of serious threats, including nuclear terrorism, bioterrorism, a large earthquake, or even a large industrial accident that could produce many more patients than could be handled by the current federal system for medical response to mass casualties. That system is called the National Disaster Medical System (NDMS).

Following Hurricane Katrina and the delayed, ad hoc nature of federal medical assistance in the Gulf Coast region, federal lawmakers have questioned whether NDMS is capable of providing an adequate medical response in a mass casualty event. The Department of Health and Human Services (HHS) has been directed by Congress, under the Pandemic and All-Hazards Preparedness Act (P.L. 109–417), to reevaluate the mission and capability of NDMS. It is critical to the resilience of this country that this deficiency be fixed. Congress, HHS, and the Department of Homeland Security (DHS) must jointly articulate and execute a national strategy for medical response to mass casualties that is consistent with the scale of threats that the country faces.

NDMS was created in the early 1980s to respond to excessive military casualties in a foreign war and to utilize the extensive civilian healthcare system to aid in the hospital care of injured soldiers. The system was never designed, and is ill-suited, to deal with a sudden catastrophe resulting in thousands of sick or injured people. NDMS has three components: deployable teams, aeromedical transport, and definitive care (meaning ongoing inpatient hospital care beyond emergency treatment). Each of these components would be overwhelmed in a large mass casualty disaster.

The deployable teams are few in number and limited in capacity. All 70 Disaster Medical Assistance Teams (DMATs) together could provide inpatient-like care to only about 1,400 patients. Likewise, the transportation component is severely limited. The Air Force, which provides all the NDMS transportation, estimates that they could move only 3,300 stretcher-borne patients in the first 54 hours after a disaster. And if patients were critically ill, meaning they were on ventilators, the estimate is that only 81 could be moved in the first 54 hours. All of this assumes that the planes and their crews are available and not busy elsewhere.

The definitive (hospital) care component of NDMS consists of military and VA hospitals and approximately 2,000 civilian hospitals that have volunteered to participate. NDMS’s job is to recruit hospital beds, coordinate transportation, and track the patients. On a day-to-day basis, this is accomplished by two people, a telephone, and a computer in each of approximately 70 Federal Coordinating Centers across the country. The only time this component has been used was after Hurricane Katrina—with mixed results at best. According to Congressional after-action reports, NDMS was able to transport and track only about 1,800 of the more than 4,000 patients who were evacuated out of the New Orleans Louis Armstrong Airport. This is a fraction of the number of victims that would be expected as a result of a nuclear or biological attack or a major earthquake. The remaining patients and family members were sent around the country without any means of tracking them or maintaining their medical records.

The vast majority of U.S. medical resources are in the private sector. NDMS, however, focuses mostly on federal medical assets, which are quite limited. The current system...
views the federal government as the cavalry riding in to rescue overwhelmed localities. What is needed is much more emphasis on community preparedness and collaboration among hospitals within a region and across geographically contiguous regions. The primary federal roles should be to formulate a coherent national strategy, to provide sufficient (read: significantly increased) funding, to provide guidance and accountability to enable effective preparedness at the hospital and regional levels, and to facilitate, coordinate, and augment response.

To accomplish this, HHS and DHS should prepare an overall strategy for mass casualty care for up to 100,000 victims. This is consistent with the number of live casualties expected after a terrorist attack using weapons of mass destruction or a major earthquake. HHS should create a concept of operations for hospitals that is derived from the national strategy so that every hospital would know its role during a disaster.

The new National Disaster Medical System should consist of a truly integrated nationwide network of hospitals, public health and emergency management agencies, and private businesses organized into regional groups in which the member organizations respond collaboratively. Regional groups should be connected to one another to enable horizontal cooperation within and across state borders. Rather than relying on a limited number of NDMS teams and military planes to evacuate victims to hospitals scattered across the country, as increasing numbers of patients exceed the hospital capacity of involved regions, patients should flow outward in an expanding circle as contiguous regional groups are recruited into the response. Most patient transportation should be short-distance, by land, using nonfederal vehicles, but coordinated by a more robust federal coordinating system analogous to air traffic control.

We have briefly sketched one possible approach to this urgent problem in hopes of spurring needed change. Other approaches are possible, and we welcome discussion of alternative creative suggestions.

REFERENCES


Eric Toner, MD, Senior Associate
Richard Waldhorn, MD, Distinguished Scholar
Crystal Franco, Analyst
Center for Biosecurity of UPMC