When Hospitals Respond to Disasters

Emergency Communications Networks

Organized communication over distances and to appropriate entities is crucial in responding to an overwhelming emergency in a community. This is not easy when power is lost, telephone circuits are disrupted or overwhelmed, or other hardware problems arise. An emergency is not the time for physicians and nurses to learn their emergency communications system and back-up communication plan.

From a hospital’s perspective, a disaster is an emergency that is locally overwhelming. The additional resources required to provide necessary medical care might come from neighboring hospitals or from other agencies farther away. The hospital designated as Disaster Medical Hospital Control (DMHC) is charged with providing communication and dissemination of field information to involved hospitals and agencies in the brief but important period between the onset of a disaster and when Emergency Operations Centers (EOC) reach full operation. DMHC facilities are identified prior to a crisis (typically on a regional basis) and have equipment installed and staff trained to manage the event. In practice, the activities of Disaster Medical Hospital Control during these first hours often determine how well-coordinated the rest of the response will be.

Emergency communications—no small task

A hospital serving as Disaster Medical Hospital Control in the early hours of a disaster may be operating several lines of communication at once: EMS field triage and allocation of patients, notification to hospitals receiving patients, aero-evacuation control, and communications with agencies with wider scopes of influence, such as the regional level one Trauma Center, public health authorities, public safety dispatch centers, and the county and state EOCs. In the case of a disaster, upon notification by EMS or the local hospital, the DMHC’s role includes initiating contact with the appropriate county EOC and, when necessary, the state Emergency Operations Center (see box on next page) to give early notice of any disaster with a potential to overwhelm the hospitals in the region, especially when a disaster has potential to spread geographically.

Harborview Medical Center

Over the past decade, Harborview Medical Center, in Seattle, Washington, has served as Disaster Medical Hospital Control for a number of events, including the 1995 Auburn Boeing plant chemical cloud (150 patients transported), 1996 Christmas winter storm (50 patients transported), 1998 Thanksgiving Day Aurora Bridge metro bus accident (42 patients transported), 1999 power failure at Valley Medical Center (180 patients relocated), and 1999 World Trade Organization protests (75 patients transported).

The heart of the Harborview emergency communication network is the Emergency Department Radio Room, which holds 11 phones, 12 radios, 3 computers, and 2 fax machines. Each of those phones and radios has its own dedicated purpose in the array of communications with Medic One medics, fire, police, aeromedical response, public events staff, public health personnel, and King County EOC. The radios cover almost every frequency from 30 to 900 megahertz. Four separate amateur radios are also installed. The goal is to ensure a redundancy in communications methods and technology.

Hospital emergency communications

When evaluating their hospital’s emergency communication plan, hospital staff should consider three basic planning points:
1. Who are you going to call in the case of a locally overwhelming event? This does not have to be a government-declared disaster. It can be a water main break in the basement.
2. Who are you going to call at 2 a.m.?
3. How do you contact Disaster Medical Hospital Control if the phone lines are down?

Who are you going to call?

Staff in local hospitals should know which hospital serves as Disaster Medical Hospital Control for the region and call this hospital first. (If calling DMHC’s Emergency...
A satellite phone is another good backup system. Washington State EOC has a Mitsubishi ST-121 satellite terminal and several transportable terminals positioned strategically around the state. More details about this satellite phone system, including how to request local support from one of the transportable terminals, can be found on the state EOC’s Web site (emd.wa.gov/site-general/end-of-era/EOC-idx.htm). As part of recent federal funding the Washington State Department of Health has provided most hospitals with dedicated satellite phones installed in areas so that they are answered around the clock.

Regardless of the communication systems and plans in place, they will be effective in an emergency only if all staff know how to use them. As Harborview’s disaster preparedness motto says, “Practice how you play.”

Authors
Samuel A. Warren, MD, is associate director of Emergency Services; Duane Mariotti, BSEE, is director of Clinical Engineering; Anne Newcombe, RGN, is clinical nurse manager of Emergency Services; Chris Martin, BSN, is administrative director of Emergency Services; and Michael Copass, MD, is medical director of Emergency Services. All are with Harborview Medical Center.

Resources

Central Region Trauma Council Communication Plan. Prehospital Committee, Dr. M. Copass, Chair. Interoperability/Mutual Aid Communications Plan and 800 Talkgroup Standards. Approved May, 2005.