On Improving Response

Robert B Dunne MD FACEP

The main focus of hospitals in a disaster is to preserve life and health. Disaster preparedness often focuses on technical details and misses the big picture of assuring life and health. Remember that the definition of a disaster is ANY event that overwhelms resources. The disaster is defined by the available resource NOT by the magnitude of the need. One multi vehicle collision may overwhelm a small hospital while a larger mass casualty incident may just be a busy day at a level 1 trauma center.

The HRSA benchmark that all states establish a system that allows for the triage, treatment and disposition of 500 adult and pediatric patients per million population following a disaster

The steps to good response :

RECOGNIZE
PROTECT
DECONTAMINATE
TRIAGE
TREAT

Recognize: Recognize there is situation or hazard. This means all your staff need training to recognize hazards and get the ball rolling. In disasters as many as 80% of patients will come on their own to the hospital without prior notification. In fact hospitals may be the first to be aware of an event that effects life an health, particularly infectious disease events. Recognizing a new disease outbreak or bioterrorism takes and open mind and high index of suspicion

Protect: Protect the staff This includes everything from securing your hospital, managing patient flow safely and using a personal protective equipment if needed. Using an incident command structure such as HEICS is essential to providing a safe response. A unified commander

Decontaminate: Decontamination training should focus on life and health issues not technical decon. Some antidotes, particularly for organophosphates, need to be given early in the decon process to be effective. Mass decontamination to save life needs to be rapid, clothing removal and self decon with water should be planned for ambulatory patients. Use what you have do not delay to set up a tent or contain runoff. EPA states there is no need to contain runoff when trying to preserve life and health..

Triage: Triage is the key skill for hospital providers. All personnel should be comfortable with START triage. This should be practiced regularly. Some part of every month should be dedicated to doing a triage tag on routine patients to keep providers familiar with the process.

Treat: The question of altered standards of care has been discussed in many health care settings. There is no clear guidance that can be given on this and there is no practical or ethical way to make decisions about limiting care in a hospital setting proactively. Disasters are defined by needs overwhelming resources. The needs and the resources are dynamic there is no clear if X then Y situation. Education should focus on triage, triaged patients should constantly be reassessed as resources become available. Patients who are being managed expectantly may be provided higher level care as other patients are cleared. One thing is clear, though, patients should all be assessed. The biggest mistake is not to know the true nature of all the patients early on in the process. We should not stop our triage efforts to treat patients until all the victims have had a brief initial assessment. Hospitals should not run out of supplies and should be stocking to take caree of the expected surge.

HOSPITAL PREPAREDNESS

Hospitals need to prepare for essentially 2 types of situations. The first is an acute event. This would include internal events such as loss of an essential utility and external events such as a mass casualty incident. The second is a subacute event which would include a new infectious disease or bioterrorism. The concept of all-hazards preparedness needs to recognize these unique situations.

Acute events are a typical focus of hospital disaster planning. They are infrequent but not rare events. Multi victim collisions and structure fire can result in large numbers of casualties presenting to the hospital. Terrorist events can also bring large numbers of patients to the hospital. These events may or may nit involve hazardous materials and decontamination. A large scale infrastructure event such as a flood or hurricane can affect the hospital internally and bring a large number of patients in. Drills for these events should be as realistic as possible.

Subacute events are more insidious by their nature. Consider the normal flu season where all the hospital beds are full and patients are boarding in the ED waiting for admission. If 10 patients came in suddenly and needed admission the hospital may well activate a disaster plan, but when the ED gets steadily busier for weeks and the hospital bogs down the response if most often to do nothing. Hospitals and the health care system have failed to respond to daily overcrowding.

In a situation of emerging disease, the recognition is key. During the 2001 anthrax letters it took astute clinicians to recognize the disease. The response to SARS was delayed because the disease was poorly understood and health care providers died. To respond to subacute events takes a region wide focus to open hospitals beds, open secondary care areas and plan for quarantine as needed. To prepare for these events requires coordinated realistic drills. These drills include opening secondary care areas and staffing them. Testing prophylaxis for essential personnel and the general public.

In the emerging or overwhelming disease situation the hospital personnel will need to have access to prophylaxis immediately if we are going to be able to continue to operate. A hospital should plan and practice passing out initial prophylaxis to workers and families as soon as treatable or preventable disease outbreak is identified. This would include a vaccination clinic for appropriate diseases.

Hospital preparation can help response. It is essential that hospitals stock for a realistic scenario and work with suppliers to provide additional supplies efficiently. Stocking can be broken down to 50 patient modules of supplies and pharmaceuticals and scaled according to population and service area. A key to remember is that review of care after disasters is shows that the needs are actually very similar to routine operations except for the scale.

Acute traumatic injuries are dealt with in the first few hours and require routine trauma supplies. Also patients who have pre-existing chronic disease are disproportionately affected. A bombing in a public place will result in traumatic injuries and exacerbation of COPD, angina and other disease states in the survivors. After the 2001 World Trade Center attack the serious trauma victims were much fewer than the patients suffering from difficulty in breathing, eye complaints and chest pain from walking a long way through the dust and debris. After hurricane Iniki in Hawaii the pharmaceutical in short supply was insulin.

Six Key JCAHO standards that hospital disaster plans must address

1. Communication (see **Standard EC.4.13**)
2. Resources and assets (see **Standard EC.4.14**)
3. Safety and security (see **Standard EC.4.15**)
4. Staff responsibilities (see **Standard EC.4.16**)
5. Utilities management (see **Standard EC.4.17**)
6. Patient clinical and support activities (see **StandardEC.4.18**)

JCAHO has updated recommendations for hospital preparedness. "The emergency operations plan (EOP) identifies the organization's capabilities and establishes response efforts when the organization cannot be supported by the local community for at least 96 hours...." Many hospitals are not ready to be self supporting for 96 hours. This increase in time from 72 hours recognizes the realities of getting help deployed to an effected area. This means self sufficiency in food, water, shelter and medical supplies without the usual supply chain in place. This requires modification of usual stocking practices for many institutions.

PEDIATRICS SPECIAL CONSIDERATIONS

All hospitals should have a well developed disaster plan that specifically addresses pediatric and adult patient surge capacity. This should include plans such as early patient discharge, discharge holding areas, converting outpatient to inpatient beds, creating alternative treatment areas, mutual agreements with other acute, long term and rehabilitation facilities and agencies and the use of automated patient tracking systems. It should also provide for the recall of sufficient health care providers as needed.

Children and parents should be treated as a family unit and every hospital (pediatric and adult) must have sufficient equipment and medications, as well as the training and capacity for assessment, treatment and decontamination of ill or injured children and adults in a disaster.

HOW TO ASK FOR HELP

Knowing how to ask for help is key. Hospitals often assume the governmental authorities will send help. This cannot occur unless the needs are known. Typically assessment teams determine the resource priority and if a hospital cannot define what is needed they will not get help. Typically this needs to go through local authorities up a

chain of command to get resources dispatched. As soon as the hospital incident commander decides to call in extra help or hold staff over for extra hours the local emergency management office needs to be notified. Specific needs should be listed: we have x hours of fuel for our generators, we need y doses of ancef, we need z nurses for the next 7 days. The more specific the better. Resources will not be immediately available but as they are specific requests will get priority. Hospitals need to plan to receive, store and secure extra supplies. If personnel are requested the hospital should have a place for teams to set up that will provide for optimal patient flow and security. There are many state and federal resources available but they are often underutilized because hospital have not asked for help. Getting help early is the best method to preserve the hospitals capability and keep the precious resource available.

As hospitals plan and prepare they need to know what resources are available in their local area. There are often caches of equipment and pharmaceuticals at VA hospitals, in urban areas through the Metropolitan Medical Response System (MMRS) and through various state resources. Each hospital should know how to access these resources. Also each hospital should consider how far the are from a Strategic National Stockpile receiving site.

PERSONAL PREPAREDNESS

An often, overlooked area of preparedness is individual preparedness. Health care workers need to know that they will be needed in an acute event. During the large East Coast power outage, many health care workers could not get work because there gas tanks were empty and no gas could be pumped. Others could not communicate because, although the phone lines were working, they did not have an old fashioned telephone at home that did not need AC current to work or they had given up a home phone line in favor of a mobile phone. Plans for the protection of the family are essential. It is difficult to do your job if you are uncertain about your family. A plan is needed for family communication, evacuation and continued care. Organizations should have a

prophylaxis plan that includes family members. Options for housing and feeding families of essential personnel should be considered.

CONCLUSION

Preparedness is a continuous process and needs to be tested and refined. The goal of preserving life and health should the guide to any planning. There is no right answer and we all must be learning from each other.