Mass Casualty Exercise Training Crucial for Trauma Systems

Without notice, the weather in the area changed dramatically. The barometer dropped precipitously and dark clouds shrouded the sky. The winds picked up significantly, and the sirens began to wail. Tree limbs began to snap, and the rain pounded cars and buildings. A “Code Black” sounded overhead—a tornado was spotted in the region. Paying little attention to this warning, most of us in the hospital continued our work as usual. But less than ten miles from our facility, a tornado had touched down and ripped through the Lombard campus of the National College of Chiropractic. The initial reports indicated that over one hundred people had been severely injured. There were reports of mass chaos. And then as expected, “Code Triage” was sounded overhead. This is the alert notifying the hospital that a Mass Casualty situation is in effect, and all employees should report to their work areas, and physicians should report to the Medical Staff Lounge. Fortunately, an actual tornado did not touch down. Fortunately, this was all only a drill.

On September 29th, Advocate Good Samaritan Hospital participated with area Emergency Medical Services (EMS) personnel and regional Level II Trauma centers in a mock, Mass Casualty exercise. Approximately seventy chiropractic students and paramedic students volunteered to be transformed into injured victims via professionally applied make-up and artificial skin—a term referred to as “Moulage”—and perform as mock, injured victims of an area disaster. In this case, they simulated casualties from the above described tornado scenario. The mock casualties were then collected from the disaster site, triaged, and transported to area hospitals by all of the regional fire departments, where the hospitals’ Mass Casualty Plans were activated and tested. This Mass Casualty exercise tested every aspect of Good Samaritan Hospital’s Mass Casualty Plan, which included the alert system notification, staff response,
casualty triage, communications, patient registration and accountability, Emergency Department casualty management, patient flow and transport, Patient Safety/Security, Operating Room and Intensive Care Unit management, and ancillary support services utilization. Overall, it was a very good exercise. As the regional Level I Trauma Center, Good Samaritan Hospital assumed the lead role and received the vast majority of the casualties. By the completion of the exercise, Good Samaritan Hospital successfully handled over fifty unannounced casualties on an otherwise busy Tuesday morning.

But mastery can never be achieved when preparing or training for a Mass Casualty scenario. Like any other scenario or event, participants improve their skills the more they train. I received nearly all of my post-graduate, surgical training in the military, where we routinely participated in large scale, mock, Mass-Casualty exercises involving hundreds of simulated patients over a several hour period of time. As an active duty military surgeon in the 1990s, Mass Casualty management scenarios expanded and began to involve personnel not only injured traumatically, but also contaminated by unknown weapons of mass destruction, such as nerve agents, the highly potent C. botulinum toxin, anthrax, the plague, and cyanide. Whereas at the time this all seemed to be a cumbersome waste of time and resources, I later truly appreciated my previous training as I engaged in actual Mass Casualty scenarios while on deployment to the wars in Afghanistan and Iraq.

But a true Mass Casualty situation will never be without some chaos. By definition, a “Mass Casualty” situation is in effect when the number or complexity of the injured patients outstrips the personnel or resources available to treat them. Thus, a large community hospital with over 40 ICU beds may be in a Mass Casualty situation should a half dozen, urgent surgical casualties be brought to the Emergency Department all at once, and only two surgeons are immediately available to manage their injuries. It is in this very situation that prior rehearsal of Mass Casualty scenarios can be crucial to optimal emergency casualty management, patient flow, and optimal outcome and survival of the injured patients.

In a Mass Casualty situation, there must be a paradigm shift as to how injured patients are managed. We are all familiar and comfortable with the current standard of having an injured patient transported to an Emergency Room, where the Emergency Department Physician or Trauma Surgeon attends to the injured patient and is cared for by multiple nurses and technicians. Emergency resuscitative procedures are performed, a battery of lab studies are run, x-rays and CT scans are performed, and patients are dispositioned to the operating room, ICU, or the floor. Those requiring urgent surgery are taken to the OR without delay, and those requiring intensive care management receive one on one nursing care until the patient stabilizes.

But in a Mass Casualty situation, none of that holds true. Our current standard of management breaks down immediately, and the paradigm must shift from...
complete and definitive care, to “Damage Control” care—that is, only do that which is necessary to save the life or limb of the casualty, and do the greatest amount of good for the greatest number of people. Many patients will not even be allowed to enter the Emergency Room. The “Walking Wounded”—those stable patients with fractured limbs or relatively minor wounds—will be triaged to a non-clinical area, such as the cafeteria, where primary care physicians will be tasked with splinting extremities and closing wounds to the best of their abilities. Patients obviously needing urgent surgery, who may already be intubated and receiving fluid resuscitation, may be triaged directly to the operating room where general surgeons, vascular surgeons, orthopedic surgeons, urologists, and gynecologists will be tasked with controlling the internal hemorrhage and performing temporizing operative procedures. Patients with clinically apparent spinal or brain injuries, cardiac conditions, or non-trauma critical conditions may bypass the Emergency Room directly en route to the Intensive Care Unit, where Pulmonologists, Cardiologists, Neurosurgeons, and other physicians will be tasked with ventilator management and other critical care services despite even a cursory workup. When the hospital is flooded with injured patients, only those casualties requiring urgent intubation, emergency surgical airway creation, chest needle decompression, chest tube placement, urgent hemorrhage control, or emergency blood resuscitation will be taken into the Emergency Room. Minimal if any x-rays will be taken. Instead, hand-held ultrasound exams will direct emergency treatment. Minimal labs will be drawn. Instead, perhaps only a single arterial blood gas analysis will be run, which includes a hemoglobin and a potassium level. And CT scans will not be performed unless a critical management decision hinges on the CT findings and no other means of assessment is possible. By not allowing for this paradigm shift during a Mass Casualty situation, all lab, x-ray, and CT results will be delayed indefinitely as each of these services quickly becomes overburdened, and the whole process slows to a grinding halt.

The Mass Casualty exercise involving Good Samaritan Hospital lasted just over three hours. Despite it only being an exercise, participants were quite exhausted at its completion. All of those involved did a very good job of adapting to a difficult situation, and were able to manage and maintain accountability of all casualties brought to our facility. But despite our overall satisfaction in this mock casualty exercise, the fact that this was all simulation cannot be underscored enough. Preparation and training for a Mass Casualty scenario is an extremely important aspect of healthcare delivery, especially at a large community hospital or trauma center. The staff at Good Samaritan Hospital will continue to participate in mock, Mass Casualty drills hoping to expose as many employees and physicians to our hospital’s Disaster Management and Mass Casualty Plan. Good Samaritan Hospital is trained and ready to handle a genuine disaster or Mass Casualty should one occur. But as I stated previously, if there is a genuine Mass Casualty situation, there will be associated chaos regardless of training or expertise of those involved. Hopefully, none of us in this community will ever need to be put to the true test.

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Transfer to a Level I Trauma Center with one phone call

We are committed to serving our regional hospitals and Level II Trauma Centers by accepting any trauma patient needing a higher level of trauma care with one simple phone call. To transfer a trauma patient to Good Samaritan Hospital, please call 630.275.1160. Ask to speak directly to the Trauma Surgeon. The Trauma Surgeon will pick up, and in almost all cases he will accept your patient in transfer. You will not have to call the bed board or any other physician. We will coordinate the entire acceptance. Alternatively, you may call our hotline at 1.800.URGENT.5

The Level 1 Trauma Center
3815 Highland Avenue
Downers Grove, IL 60515
phone: 630.275.3540
fax: 630.275.5566

Visit advocatehealth.com/goodsam and click on Emergency Service/Trauma.

Direct Transfer Line 1.800.URGENT.5

Upcoming Events

As part of our ongoing commitment to continuing education, we have offerings applicable to all health care providers caring for trauma patients.

**November 19-20, 2009—**
6th Annual Advocate Injury Institute Symposium

4th Annual Nursing Poster Competition
To register or for more information go to advocatehealth.com/trauma

**Trauma Grand Rounds—**
February 2, 2010
June 8, 2010
October 19, 2010
*Topics and speakers TBA
TO RSVP (please specify date), email GSAM-outreacheducation@advocatehealth.com

**ENPC—**
January 13 & 20, 2010
September 8 & 15, 2010
For more information (please specify dates), email GSAM-outreacheducation@advocatehealth.com

**TNCC—**
February 10 & 17, 2010
October 6 & 13, 2010
For more information (please specify dates), email GSAM-outreacheducation@advocatehealth.com

To register online, go to advocatehealth.com/goodsam and click on Emergency Service/Trauma.