

TRAUMADISPATCH

A QUARTERLY PUBLICATION OF THE MEMORIAL HOSPITAL OF SOUTH BEND LEIGHTON TRAUMA CENTER

SPRING 2011

Welcome to TraumaDispatch

Welcome to the second edition of *TraumaDispatch*, a quarterly newsletter brought to you by Memorial Trauma Services, EMS and MedFlight. Because May is National Trauma Awareness Month and the week of May 15-21 is National EMS Week, we are proud to honor the medical professionals throughout the region who unselfishly provide care for the seriously injured. Saving lives and improving the quality of life within our communities require a strong commitment from a variety of talented individuals. Thank you to everyone for your ongoing contributions that are making our communities a safer place to call home. We welcome your feedback, so please submit your input to gbingaman@memorialsb.org. For more information about the Trauma Center, visit www.qualityoflife.org/trauma.

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Linking the Puzzle Pieces: HOW EMS FITS INTO OUR TRAUMA SYSTEM

Ever since 1966, when the National Academy of Sciences published its famous white paper, "Accidental Death and Disability: The Neglected Disease of Modern Society," competent and professional prehospital care has been recognized as an important component of any good trauma system. As the focus of this newsletter demonstrates, it is definitely an important component of ours.

The scope of trauma care in our EMS system is both broad and deep. Over a thousand personnel, from dispatcher to paramedic, provide rapid response, evaluation, treatment and transport to patients with both blunt and penetrating injuries.

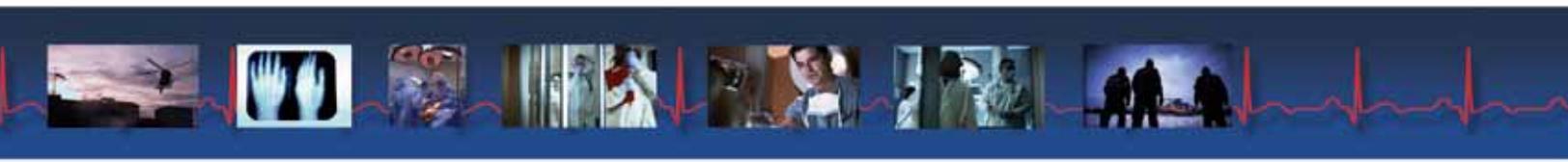
In The Beginning

Prehospital trauma care begins with someone calling 911. Our local dispatchers are trained not only to collect necessary information and quickly send an EMS response—usually in less than 60 seconds—they also provide pre-arrival instructions to assist callers with potentially lifesaving interventions, including airway clearance, hemorrhage control and, if necessary, CPR.



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At the paramedic advanced life support (ALS) level, the South Bend Fire Department, Mishawaka Fire Department, and Clay Fire Territory handle the bulk of trauma cases, both via direct dispatch to trauma scenes and by rendezvous

New Carlisle, Walkerton and the Lakeville-LaPaz area are served by local BLS ambulances and can rendezvous with ALS providers on the way to the trauma center if necessary. It is important to recognize that many of these BLS providers are

Southern Michigan and beyond. The range of prehospital interventions is similarly extensive. Extrication, decontamination, patient assessment, hemorrhage control, airway management (including intubation and cricothyrotomy), decompression of tension pneumothorax, fluid replacement, spine/fracture



EMS Systems from the entire Michiana area respond quickly and efficiently.



immobilization and rapid transport are just part of what prehospital providers bring to the trauma scene. They also provide extensive training and knowledge of not only how, but also when to apply these interventions and when to withhold them.

Airway management, IV fluid administration and spine immobilization are always controversial topics. EMS personnel must consider the latest information;

use their patient assessment skills; and portable monitoring modalities and then make the best decision for the specific patient scenario. For example, there are many ways to manage the airway: providers have to consider not only all of the usual parameters—i.e., the adequacy of oxygenation and ventilation, airway protection, etc.—but also whether the distance to the trauma center warrants the transport delay incurred by on-scene intubation.

EMS Provides Outstanding Service

Three areas in which I'm particularly proud of our local providers include: tourniquet use, pain management and scene times.

with basic life support (BLS) personnel. PROMPT Ambulance Service, Tri-County Ambulance and other local private paramedic organizations are often involved in trauma transfers to and from Memorial.

In less densely populated areas of St. Joseph County where paramedic service is not immediately available, BLS providers ranging from first responders to several levels of EMTs—all responding with various township and fire territory organizations—are able to rapidly get to the trauma scene and initiate care while awaiting an ALS ambulance. North Liberty,

volunteers who selflessly serve their communities.

For areas outside St. Joseph County, Memorial MedFlight enables us to extend a hand to neighboring regions and EMS systems to provide scene responses to Elkhart, LaPorte, Starke and Marshall counties in Indiana, and to Berrien, Cass, and St. Joseph counties in Southern Michigan. It also adds another prehospital provider, the certified flight nurse, to our ranks. In addition, MedFlight allows Memorial to offer interfacility trauma transfer all over Northern Indiana,



Tourniquet use is still often discouraged in EMS education but, learning lessons from the military, our local providers have embraced tourniquet use when necessary. This has resulted in some dramatically lifesaving interventions.

For a very long time, pain management had been neglected in the prehospital setting. Several years ago, it was our local providers, the EMS personnel themselves, who advocated for the use of parenteral pain medication for trauma patients, pushing the medical community to do the right thing. Not only have we never had a complication related to prehospital analgesia, the ability to relieve suffering has been rewarding for both patients and providers.

Excess time spent on-scene can cost lives, especially with penetrating torso trauma. The stabilization of severe trauma in the prehospital setting is commonly an imaginary concept, and rapid movement toward the trauma center is usually what is needed. Our local scene times are very short, often under 10 minutes. I am always amazed when a patient with a gunshot

wound to the abdomen arrives in the trauma bay with two large IV catheters and a chest wall dressing less than 20 minutes after the phone rang in the dispatch center!

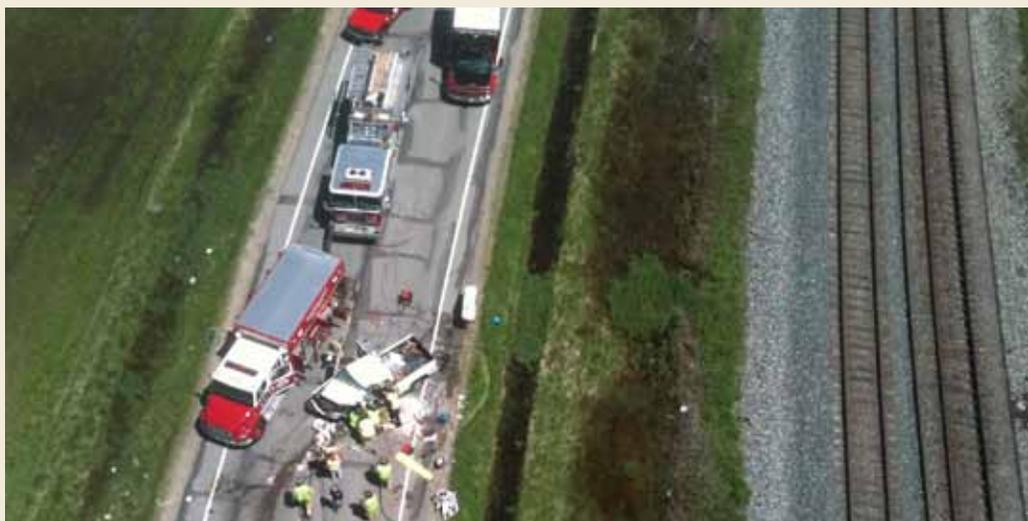
Activation of Memorial's trauma system is another important EMS function. Most of our activations occur well before the patient arrives, as a result of an EMS radio or phone report. This allows us to mobilize resources and save precious minutes.

Of course, EMS involvement in trauma care does not stop at patient delivery. EMS personnel participate in disaster planning and numerous educational activities hosted by both Memorial and St. Joseph Regional Medical Center. Under the umbrella of the St. Joseph County EMS Committee, all local EMS organizations are co-sponsored by both hospitals, which work together to ensure that trauma patients receive the best care in the most appropriate setting. Between Memorial and St. Joe, four educational meetings are held monthly. In addition, Memorial provides numerous

educational opportunities throughout the year in prehospital trauma care for EMS personnel. Finally, MedFlight enables educational trauma outreach to surrounding communities.

As we celebrate the 2011 National EMS Week and honor those who provide that vital link between our homes, our cars, our streets—anywhere trauma may occur and definitive trauma center care—it is helpful to remember that, though there are multiple cities, hospitals, fire departments, dispatch centers, EMS and provider organizations in our community, patients are best served when we act as one trauma system. Competent, professional EMS care and transport are an important part of what makes that system possible.

— Keith H. Sherry, M.D., FACEP
MedFlight/EMS Medical Director





MEMORIAL INJURY PREVENTION PROGRAMS

Safe Kids – Walk This Way Campaign:

Focuses on pedestrian and
Halloween safety.

Think First:

Presented in high school health
classes, the program is designed to
increase the awareness of traumatic
brain and spinal injuries and offer ways
to prevent them.

Trauma Nurses Talk Tough:

A scripted, illustrative program that
discusses bad choices young teens
make and their consequences.
The discussion is about making good
choices to avoid injuries.

Crazy Cranium Camp:

Held at Memorial HealthWorks!
Kids' Museum, the camp engages youth
in interactive activities about the brain
and ways to prevent injury.

Memorial's Permanent Fitting Station:

Free child passenger seat checks
performed by a Certified Passenger
Safety Technician. This service is
offered by appointment only.

Changing Behaviors, Saving Lives

"If we can prevent just one person from becoming a statistic, it is worth the effort." This is such a common statement tied to injury prevention. As the Injury Prevention Coordinator for Memorial Hospital of South Bend Trauma Center for the past six years; and the 2009 recipient of the statewide Child Safety Advocate Award; it is my goal to prevent injuries by changing people's behavior.

I lead numerous outreach activities with the goal being to increase awareness of behaviors and actions that can cause unintentional injuries to the young and old. In 2010, I participated in 42 programs throughout the community. It is my hope that I have influenced the behavior of approximately the 10,000 people that I came in contact with last year.

Various schools, organizations and agencies reach out to me to conduct injury prevention presentations at their facilities. These innovative programs/areas included: pedestrian safety, Halloween safety, playground safety, summer safety, car seat education, Think First, Trauma Nurses Talk Tough and Crazy Cranium Camp at Memorial HealthWorks! Kids' Museum.

Tracking the value of injury prevention is a difficult task for all. Pre- and post-surveys are great, but I am unsure if they really reflect changes in behavior. Participant comments are a great resource for improving the effectiveness of my programs. It makes the job worth all the effort when past participants tell me that they changed a behavior because of something I shared during a presentation.

I welcome the opportunity to share my message about injury prevention to more people throughout the region. To schedule a program or learn more about programs, e-mail me at ablakesley@memorialsb.org.

– Alice Blakesley, R.N., BSN
Injury Prevention Coordinator



Safety is a Promise.[™]

National EMS Week: Delivering Quality Care

Memorial Hospital of South Bend Leighton Trauma Center appreciates and values the commitment of our dedicated and talented EMS professionals throughout the region.

Below is a list of the EMS agencies that are making a difference every day in the lives of so many.

Area EMS Providers 2011 St. Joseph County EMS Committee Sponsored

Clay Fire Territory
Cleveland Twp. Fire Dept.
Lakeville Fire
Lapaz Fire Dept.
Madison Twp. Fire
Mishawaka Fire Dept.
New Carlisle Fire
New Carlisle EMS
North Liberty Fire
North Liberty EMS
Notre Dame Fire Dept.
Osceola Fire Dept.
Penn Twp. Fire
Polk Twp. Fire Dept.
PROMPT Ambulance Service
South Bend Fire Dept.
Southwest Central Fire
St. Joseph County Fire Dispatch
Union North Ambulance
Walkerton Lincoln Fire Territory

Adjacent County EMS Agencies

Argos EMS
Baugo Fire Dept.
Bristol Fire Dept.
Concord Twp. Fire Dept.
Culver EMS
Edwardsburg Ambulance
Elkhart Fire Dept.
Goshen Fire Dept.
Jefferson Twp. Fire
LaPorte County EMS
Lifecare EMS
Marcellus EMS
Medic 1 Ambulance
Middlebury EMS
Multi-Twp. EMS
Nappanee EMS
Newburg Twp. EMS
New Paris EMS
Osolo Twp. EMS
Plymouth Fire Dept.
Porter Twp. EMS
PrideCare-Coloma
Sister Lakes EMS
SMCAS
Starke County EMS
Three Oaks Ambulance
Tri-County Ambulance
Wakarusa Fire EMS





CASE STUDY:

TRAUMA TEAM'S PREPAREDNESS SAVES WOMAN'S LIFE

T., a 46-year-old woman, was working at her South Bend office around **6:35 p.m.** in late 2010 when a bullet shot through a plate-glass window struck her in the head. It was believed that the unknown assailant was within 10-15 feet and used a .223 caliber rifle.

South Bend Fire Department paramedics were dispatched at **6:40 p.m.** and arrived on the scene at **6:44 p.m.** Once the scene was cleared by the South Bend Police Department, the paramedics entered the building. They found the woman sitting in a chair and able to respond to verbal stimuli, although her speech was garbled. Upon inspection, they found a 3/8-inch wound in the right center posterior of the skull. A pool of coagulated blood was found on the floor next to her. Her initial blood pressure (BP) was 180/100, her pulse 60, respirations 10 with an oxygen saturation of 97 percent. The medics calculated her Glasgow Coma Score (GCS) as 7, recognizing that she opened her eyes to voice (3), had garbled speech (3), but was unable to move her extremities (1).

Memorial Hospital of South Bend was contacted immediately by the medics and advised of the situation. They requested

911 activation based on the criteria that T. had a GCS less than 8 with a traumatic mechanism. The ambulance departed the scene at **6:48 p.m.** and arrived at Memorial Hospital at **6:52 p.m.** Thus, total prehospital time was an amazingly brief 12 minutes.

Upon arrival in the trauma bay, the emergency physician and trauma surgeon assessed the shooting victim. She was rapidly intubated due to her declining neurologic status. She was then transported to Radiology for a computerized tomography (CT) scan. The initial scan showed the large gunshot wound to the right part of the skull with a comminuted skull fracture, bone and bullet fragments within the brain, and a large subdural hematoma causing a significant shift in the brain from the right to left side. The neurosurgeon arrived within 20 minutes and immediately made plans for surgery. T. was transported to OR at **7:35 p.m.** Total time from injury to surgery was 60 minutes.

She underwent an emergent craniotomy with the evacuation of a very large subdural hematoma. Because of the amount of swelling, the bone flap was not replaced. During her early postoperative



stay in the ICU, she opened her eyes, followed some commands and said a few words. However, over the next week she demonstrated neurologic deterioration. With close ICU monitoring by both the neurosurgeon and ICU staff, she improved and was transferred from the ICU after 19 days. Her very supportive family remained vigilant and involved in the decision-making.

T. astonished the staff and her family with her steady recovery from this devastating injury. Ultimately, she was accepted to Hook Rehabilitation Center in Indianapolis where she participated in an intensive traumatic brain injury program, including three months inpatient rehab. During that time, she returned to Memorial for replacement of the bone flap. The woman recently transitioned to a residential setting with continued day rehab treatment.

— Janet Howard, R.N., MSN
Trauma CNS

INSIDE THE INJURY

- ▶ Glasgow Coma Scores range from the lowest of 3 to a high of 15. Scores 3-8 indicate a severe brain injury, 9-12 a moderate brain injury and 13-14 a mild brain injury. The patient's score was 7.
- ▶ Penetrating injuries to the brain can cause significant damage to the skull, underlying brain tissue and the major vessels feeding the brain. The presence of large contusions, hematomas or bleeding within the ventricular system is associated with increased mortality, especially when both sides of the brain are involved. Prompt evaluation including consultation with a neurosurgeon is essential.
- ▶ Source: American College of Surgeons; *Advanced Trauma Life Support for Doctors*, 8th ed., 2008

Trauma Center's Rapid Delivery of Care

- Worked with local EMS, developing trauma triage criteria
- Activated trauma team
- Rapid availability of OR and skilled operative team
- Team of professionals educated and committed to trauma, including specialist physicians, staff nurses, supportive patient care assistants, dietitians, physical, occupational and speech therapists, chaplains, social workers and others

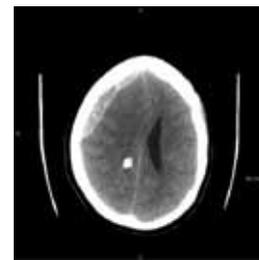


“There must be a good connection between the EMS and the ER because they were so quick in getting my daughter from her work to the ER and then to surgery.”
—T.’s father

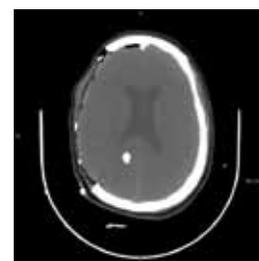
A Grateful Family

The patient’s family was enormously grateful to everyone who was involved in her care. Her father expressed nothing but praise for the EMS and ER for their immediate response to his daughter’s condition. “There must be a good connection between the EMS and the ER because they were so quick in getting my daughter from her work, to the ER and then to surgery,” said the father. He is also very grateful for the chaplain, who was his first contact when he arrived to the ER and who has remained in contact with him periodically. “Chaplain Anietie Ikene was wonderful and made a big difference.”

The patient has been making remarkable progress, improving with each passing day, according to her father. She is walking with the assistance of a cane and participating in therapy daily. The father added that he is appreciative that the community has such an experienced trauma center. “I can’t say enough about the care my daughter received and all of the people involved. Dr. Stephen Smith was very attentive and was really dedicated to making sure my daughter lived. I have nothing but respect for him. All of the staff was wonderful and the community should know that we are lucky to have a trauma center that can take care of such a devastating injury.”



Initial CT scan showing bullet and large SDH



CT scan following surgery that shows craniectomy

Memorial Trauma Services Launches Social Work Program

Under the leadership of Scott Thomas, M.D., medical director, Memorial Trauma Services, and the Social Services Department, a specialized social work position was added to Trauma Services. In order to comply with a recommendation from the American College of Surgeons, the dedicated trauma social work position was created in August 2010. And as a result, there are many exciting plans to expand social services offered to trauma patients and their families.

The first area of expanded social services is providing additional alcohol screenings and brief intervention services. According to the American College of Surgeons, "excessive drinking is a significant risk factor for injury, it is vital for trauma centers to have protocols in place to identify and help patients" ⁽¹⁾. The use of the "teachable moment" created by injury to assess, educate and refer patients for further treatment is essential to comprehensively treat the patient and reduce the likelihood of future injuries. Alcohol screening and intervention has been estimated to reduce trauma recidivism by as much as 50 percent. This reduction not only cuts down the number of arrests for driving under the influence but also reduces health care costs ⁽¹⁾.



Each year
trauma accounts
for 37 million
ER visits across
the nation.



In conjunction with Memorial's Community Health Outreach Department, Trauma Services has added a hospital-based violence prevention program. Injuries due to violence are a public health problem and one of the leading causes of death in the United States. The Trauma Services social worker identifies patients between the ages of 18 and 30 who are the victims of penetrating trauma and who are willing to participate in the program.

The program goals are to reduce recidivism of injuries related to violence, decrease criminal activity and at the same time develop positive citizenship. Under the supervision of a licensed clinical social worker, local MSW students act as case managers for program participants. The goal of

the case managers is to reduce risk factors associated with violence, such as substance abuse, poverty and low-educational achievement, while developing protective factors including increasing educational opportunities, obtaining employment and securing safe housing.

Finally, the addition of a trauma survivor support group will bring a follow-up component after the initial phase of treatment. The goal for this group, which will begin meeting monthly on June 16, is to encourage healing with others who have had similar experiences. For more information, please e-mail clemp@memorialsb.org.

— Cindy Lemp, MSW, LCSW
Trauma Services Social Worker

(1) American College of Surgeons; *Alcohol Screening and Brief Intervention for Trauma Patients*, 2006, p. 3.