

TRAUMADISPATCH

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

SUMMER 2011

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Welcome to Trauma Dispatch

Welcome to the summer 2011 edition of Trauma Dispatch, a quarterly newsletter brought to you by Memorial Trauma Services, EMS and MedFlight. Memorial Hospital of South Bend, one of only 5 Level II trauma centers in Indiana and the only one in North Central Indiana, is dedicated to providing rapid and comprehensive care throughout our region. To remain true to our promise of Saving Lives, there requires a commitment across the hospital, EMS agencies and other personnel to work in an organized and unified manner for the betterment of our communities. It is our goal to live out this commitment every day. As always, thank you for what you do to help save lives. We welcome your feedback, so please submit your input to gbingaman@memorialsb.org.

In The Trenches

A TEAM APPROACH TO TRAUMA CARE

The spring issue of Trauma Dispatch (<http://www.qualityoflife.org/trauma/traumadispatch/>) featured an article by Keith Sherry, M.D., of Memorial's Leighton Trauma Center, which described in detail the frontline individuals of trauma care. First responders, emergency medical technicians and paramedics make up the core providers that unselfishly provide care in an uncertain environment. The approach to the prehospital environment and the delivery of care has seen many changes over the years, resulting in a significant improvement in overall patient survival. An evolution in the thinking of the care-delivery method involving triage, transport and prehospital care has dramatically impacted how quickly victims arrive to the trauma center and in what condition.



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The First Link

Within St. Joseph County, efforts have been made to provide EMS agencies with the best possible information related to field interventions, assessment and transport of the trauma patient. Through education, quality improvement and established trauma-triage guidelines, local EMS agencies are able to provide that critically important first link in the chain of patient survival. The trauma center relies on the assessment, stabilization and communication skills of EMS in order to alert the necessary

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resources needed to provide continued care. Once the trauma patient has arrived to the ED, the chain is continued with stabilization, evaluation and treatment through the highly skilled staff of Memorial's trauma center.

EMS providers must make quick decisions connected with the care and transport of patients that may affect their survival. Determining where a patient is transported should be based on proximity and capabilities of the receiving facility. Getting the patient to the closest, most appropriate facility is the ultimate goal. Unfortunately, initial assessment of the patient may not provide a clear picture as to the extent of injuries. The CDC has published a field triage guide to assist in this critical decision. The guide uses a four-step approach that begins with physiological criteria and moves through anatomy of injury, mechanism and special considerations. The trauma triage protocol can be found at www.cdc.gov/fieldtriage.

Sound the Alarm

After the decision has been made to transport the patient to the trauma center a report is called to the ED. This report not only gives the ED personnel a notice of an incoming patient, but also allows for an activation of the trauma system within the hospital.

Two main levels of activation take place. At Memorial, we designate the most serious injuries as a 911 activation and the next level down as a 912. The activation criteria follows guidelines set by the American College of Surgeons along with the CDC field triage protocol. Modifications have been made over the years to reflect local variations and preferences. Local EMS providers are educated on the activation criteria in order to focus their IHERN report and allow for common language when a trauma patient is presented. In most cases the R.N. who is receiving the report automatically activates the system based on the given criteria. The ER physician is also available to review and recommend activation when needed.

All Hands on Deck

Once an activation is conducted, individuals that have been trained in the initial stabilization respond to the trauma bay within minutes. The team consists of trauma surgeons, trauma nurses, emergency physicians, anesthesiologists, radiology technicians, surgery nurses, perfusionists, lab technicians, respiratory therapists, chaplains and social workers. For the patient to receive optimum care in the shortest amount of time it is paramount that the team is assembled prior to the arrival of the patient. Along with the team at the bedside, other preparations are taking place in various departments. Radiology is alerted to have a CT scanner available to receive the patient, often within minutes of the





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Last year, Memorial's ED treated over 58,000 patients with over 1,000 of those being trauma related. The overall volume of patients seen within the ED has continued to increase along with the trauma patient population. The trauma patient within the ED needs to be evaluated and treated as effectively and efficiently as possible in order to maintain the overall integrity of the department.

The skill and dedication of the ED staff is vital to this integrity and has proven to be a key in the trauma

center's success. Time and time again we put the staff to task and they continue to step up to the challenge. We have seen many success stories over the years that are directly related to the superior care provided by the Memorial's Leighton Trauma Center.

– Greg Bingaman, R.N., MPA
Director, Trauma Services

patient's arrival. The ICU is alerted for the possibility of receiving the patient and staffing is adjusted to accommodate. Surgery is alerted and a room is made available for immediate acceptance of the patient.

Coordinated Efforts

Within the ED, initial stabilization of the patient is accomplished through a coordinated team effort. The ED trauma nurses are trained for this task through ongoing education and courses, such as the Trauma Nurse Core course. Advanced Trauma Care for Nurses is a relatively newer course that is a more in-depth review of the initial stabilization of the trauma patient. The course curriculums are established by the American College of Surgeons and the Society of Trauma Nurses. The emergency physicians and trauma surgeons also are trained through a course in Advanced Trauma Life Support. These courses help to emphasize the unified effort involved in the initial

stabilization of a severely injured trauma patient and the need for a calculated approach to managing such a patient.

Nurses within the trauma resuscitation room act as both primary and secondary care providers who stabilize the patient and record vital information. To accomplish this, the nurses must maintain a sense of focus, provide attention to detail and adjust quickly to a changing situation. Procedures are often performed within the trauma resuscitation room such as intubation, central line placement, chest tube placement, and management of fluid and blood replacement. The trauma nurse provides ongoing assessment during these procedures, looking for any changes in condition. Many times the patient will need to travel to other departments to complete the evaluation or have interventions performed. In addition to all of this, the ED is continuously caring for other patients who are in need.





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.

Safety Prevents ER Visits

While the official end of summer is approaching, there is still plenty of pleasant weather ahead and people should be mindful to take the necessary precautions to stay injury free. Here are a few things to remember to prevent a visit to the ER:

- Wear a helmet on any motorized vehicle or bicycle, and set an example for those in the community and your younger family members.
- Always buckle your seat belt each and every time you are in a car, whether you are a driver or a passenger in the front or back seat.
- Put the phone down, turn the ringer volume to vibrate and refrain from using it while driving. A new law went into effect on July 1 that no one is to be texting while operating a motor vehicle. There's also a law that makes it illegal for those under 18 to use a telecommunication device while driving.

Community Ties

Memorial Trauma Services is committed to injury prevention throughout the communities we serve. Throughout the summer we educated approximately 5,000 adults and children on injury prevention at various community events. These events included:

- Educating parents on the proper use of their car seats at Memorial's Permanent Fitting Station
- Offering safety tips at HealthWorks! Safety Adventure Day
- Coordinating the Health and Scavenger Hunt for the Sunburst Family Fun Walk
- Assisting with the Safe And Fit Summer event held at University Park Mall
- Presenting seat belt safety at the Elkhart County Fair on Kids Day and at the St. Joseph County Night Out Against Crime

If you are planning an event and would like injury prevention programming, please contact Alice Blakesley, Injury Prevention Coordinator, at ablakesley@memorialsb.org.

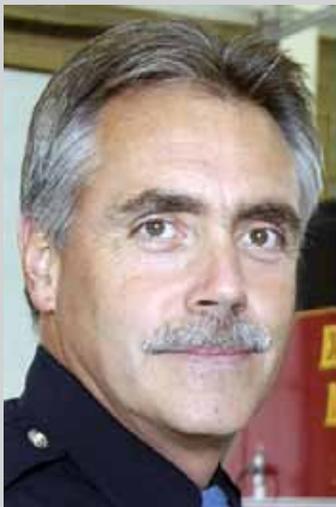
— Alice Blakesley, R.N., BSN
Injury Prevention Coordinator



Safety is a Promise.™

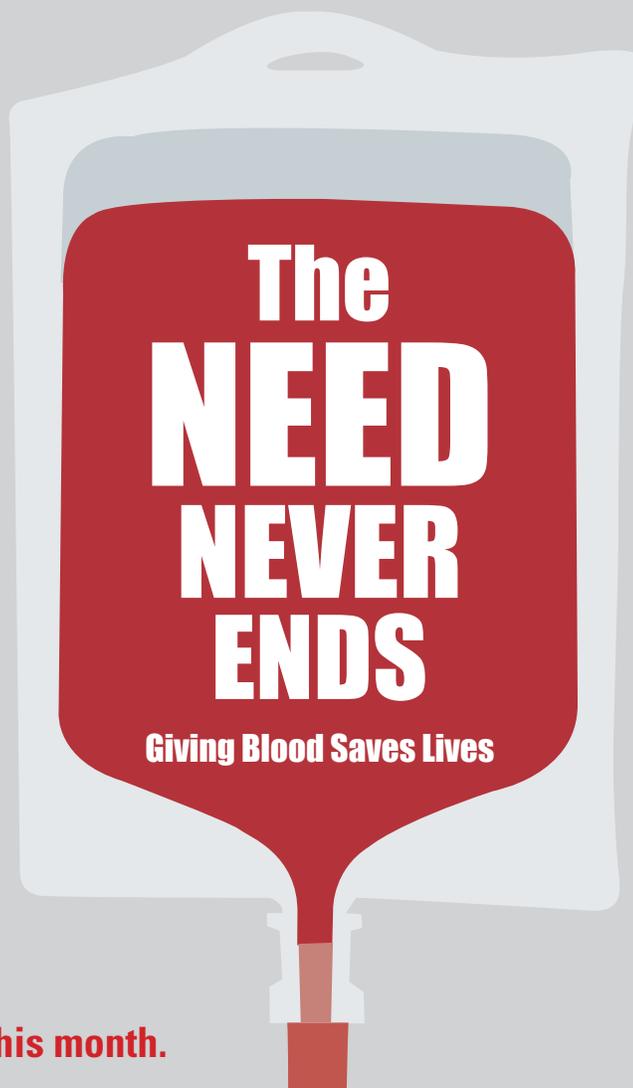
Help One of Our Own

The team at Memorial's Leighton Trauma Center would like to send their thoughts and prayers to the Palumbo Family and wishes for a quick recovery of Vito. Vito Palumbo is a valued member of the Memorial family who was recently injured as he left the Memorial ED. Vito is also a 25-year member of the Elkhart Fire Department and a recognized leader in the EMS community. Vito is a regular blood donor and required multiple units of blood product during the course of his treatment. We ask that you show your support for Vito and his family by considering a blood donation this month. There are two upcoming donation drives scheduled in September.



The first is at the Elkhart Fire Department on Sept. 13 from 2-7 p.m. at the East Street Fire Station, 500 East St. in Elkhart. Information can be found at <http://bit.ly/911ElkHero>.

Another blood drive is scheduled on the 3rd floor of Memorial Leighton Heart & Vascular Center from 6 a.m. - 6 p.m. and appointments are taken or you may walk-in. There will be a special recognition for Vito and his family provided by the Emergency Department. For more information please contact Sue Ferraro sferraro@memorialsb.org at 647-6795 or Greg Bingaman gbingaman@memorialsb.org at 647-7421.



Please show your support and plan on donating this month.

State and City Honors Memorial MedFlight



The State of Indiana and City of South Bend honored Memorial MedFlight for its five years of service to the community at a presentation earlier this summer. The only air medical transport in the region, MedFlight has transported more than 1,110 patients and works with 20 referring hospitals. They operate around the clock at the speed of safety. South Bend Assistant Mayor Lynn Coleman presented the proclamations to Memorial Health System President & CEO Phil Newbold. Keith Sherry, M.D., MedFlight/EMS medical director, Ken Nemes, outreach transport coordinator, Rod Logan, MedFlight program manager and the flight team were also present for the event.



CASE STUDY: DISPATCH TO DISCHARGE

A call comes in to the 911 operator. There is a lady hit by a car on the corner of Cedar and LaSalle in South Bend. She is not moving and her bicycle is lying on top of her.

The following dispatch occurs:

“Medic 3. Bicyclist hit by a car on the corner of Cedar and LaSalle. She is unconscious.” Medic 3 arrives to find a bicyclist without a helmet lying under her bicycle. Police are on scene and controlling the bystanders.

VS: heart rate 50, respiratory rate 6 and labored, blood pressure is 60/40. Pupils are unequal and she responds to pain by moaning. A cervical collar is carefully wrapped around the patient’s neck; she is then placed on a backboard and loaded into the ambulance.

En route Medic 3 calls Memorial Hospital on the IHERN radio: “Memorial, we are in route to your facility with a 31-year-old female bicyclist hit broadside by an SUV. She is currently responsive only to painful stimuli, her pupils are unequal but reactive, BP is 60/40. We are trying to place an IV. Her heart rate is 50 and

we are assisting her respirations with a BVM at a rate of 10. She meets 911 criteria based on BP and GCS. ETA 10 minutes.”

Meanwhile at the hospital, the ER physician is made aware of the incoming patient and based on the paramedic assessment a 911 page is made to ensure the appropriate staff is in place upon patient arrival. The patient arrives and paramedics speak directly to the trauma surgeon. The medical team springs into action along with x-ray, lab, respiratory therapy and the chaplain. Since the patient has a severe head injury, the neurosurgeon is also contacted.

The trauma team finds the patient has a femur fracture, humerus fracture and skull fracture, all on the side of the body that sustained the impact. Two large bore IVs are started and a foley catheter placed. She underwent a CAT scan in which an epidural hematoma is found. The neurosurgeon takes her directly to the OR to begin surgery.



She is watched in the ICU for two days after surgery. The femur and humerus fractures are repaired during this time, and she is able to go to the orthopedic floor. The woman works with the nurses and physical, occupational and speech therapists. The patient makes neurological improvements as well. Seven days after her accident she is ready to go to rehab to continue her recovery. While still an inpatient, she is taught about bicycle safety and a bicycle helmet is given to her.

The woman returns home after one week in rehab and will continue her recovery with outpatient therapies. Her recovery was made possible by a very special group of individuals working together as a team.



Growing Number of Motorcyclists Injured, Killed

Between 2004 and 2010 there have been a total of 467 motorcyclists treated at Memorial.

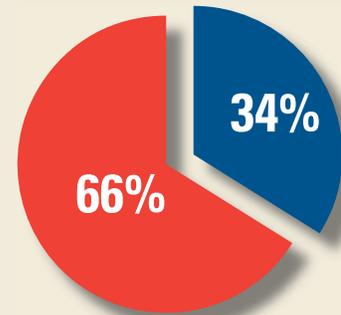
The number of motorcyclists injured or killed in 2010 compared to 2004 reflects a 64-percent increase.

The highest death and injury rates were among 40-44 year-olds, followed by 50-54 year-olds.

The term "motorcyclist" refers to motorcycle, moped or motocross rider (operator) as well as the passenger.

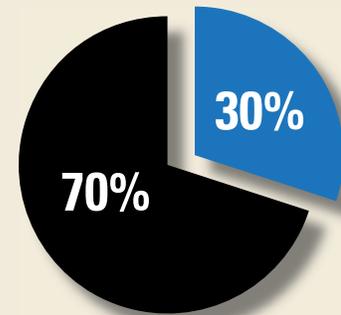
Motorcyclists Injured

- Helmeted 34%
- Not Helmeted 66%



Motorcyclists Killed

- Helmeted 30%
- Not Helmeted 70%



EMS Review: Trauma Cases at Memorial (St. Joseph County)

2010: 257

2011: 166 (through August)

Save the Date!

2012 Trauma Symposium
University of Notre Dame
Jordan Hall • March 17



Wearing a Helmet Makes a Difference

Non-helmeted bicycle riders are 14 times more likely to be involved in a fatal crash than helmeted riders.

The single most effective safety device available to reduce head injury and death from bicycle crashes is a helmet.

Head injuries are the leading cause of death and hospitalization in bicycle crashes and are the most important determinant of bicycle-related death and permanent disability.

— Provided by American Trauma Society

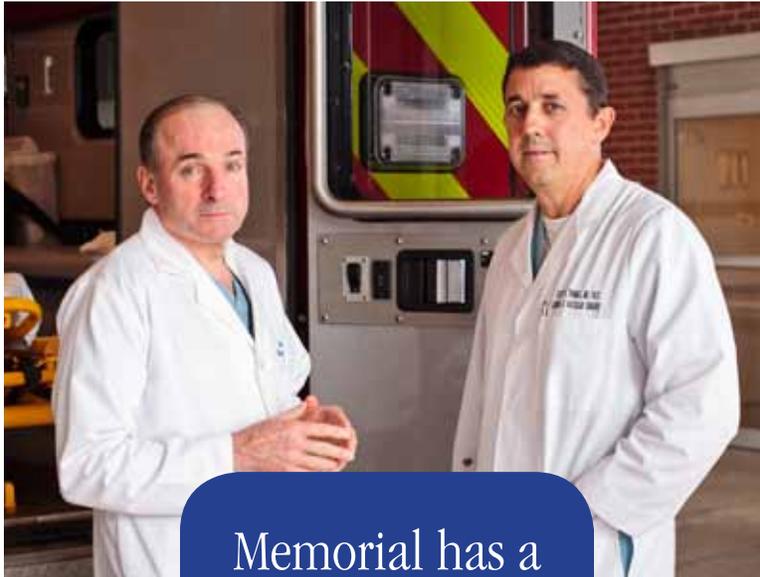
Memorial Pioneers Lifesaving Work

Those who treat trauma patients have something special—the ability to work under high-stress situations, respond quickly to urgent matters and remain focused in a tense environment. The trauma team at Memorial Hospital of South Bend now has a new tool in their arsenal that can help save even more lives. Memorial

Trauma Services has pioneered an innovative way to resuscitate trauma patients who have had significant blood loss. Using medical technology called the thromboelastograph (TEG) analyzer for trauma patients experiencing acute traumatic coagulopathy (a blood clotting disorder) in the Memorial Hospital Emergency Care Center, the trauma team, led by Trauma Services Medical Director Scott Thomas, M.D., FACS, and emergency physician Mark Walsh, M.D., FACEP, is using a groundbreaking medical capability not seen anywhere else in the Midwest for trauma.

How It Works

TEG tests the ability of the patient's sampled blood to clot. When a patient involved in a car accident, an act of violence or any other significant trauma involving the loss of blood is rushed to Memorial for surgery, the goal is to stop the bleeding and stabilize the patient's condition. But there are times when clotting does not immediately



Memorial has a new tool – the TEG – helping to save even more lives.



occur, and it's at these times when TEG helps determine what abnormalities are affecting the body's ability to clot. After the machine has processed a small amount of the patient's blood, a perfusionist immediately analyzes and interprets the data to determine which blood components—plasma, platelets, red blood cells or white blood cells—need to be put back into the patient's body in order to resuscitate the person and hopefully stabilize his or her condition. Because of the TEG analyzer and the highly skilled clinical

staff, the trauma team is able to make faster and better clinical decisions to guide resuscitation. Dr. Thomas learned of the TEG analyzer's capability at a national trauma meeting three years ago. Since then, he and Dr. Walsh have dedicated themselves to using the technology to help trauma patients here in the region.

Partnering Efforts

Memorial Hospital is the only hospital in the Midwest and one of only a handful in the country that is utilizing TEG to help resuscitate trauma patients. Memorial has since formed a partnership with the University of Notre Dame in order to capitalize on the school's research capabilities, along with the Indiana University School of Medicine-South Bend. As more research is conducted about TEG's capabilities and Memorial's trauma outcomes related to it, the results will transition in a practical way from the classroom to the emergency room. "Everything from saving lives to saving organs for transplantation is helped by this research," says Notre Dame professor Frank Castellino, Ph.D., and director of the Keck Transgene Center. "In the area of acute traumatic coagulopathy, Memorial Hospital must be added to the list of nationally excellent care providers."