Memorial Hospital of South Bend

LTE AUTADISPATCH

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

SPRING 2012

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Welcome to TraumaDispatch

Welcome to the spring 2012 edition of TraumaDispatch, a quarterly newsletter brought to you by Memorial Trauma Services, EMS and MedFlight. In this issue we take a closer look at the role the Cardiovascular Intensive Care Unit plays in trauma care; the significance of organ donation; the retirement of a beloved EMS director; a recap of the 12th Annual Trauma Symposium; and the growth of a small, but highly skilled EMS agency. We welcome your feedback, so please submit your input to gbingaman@memorialsb.org. For more information about Memorial Trauma Services, visit qualityoflife.org/trauma



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The Care Essentials

LEVEL II TRAUMA CARE IN THE CVICU

Once trauma victims have been evaluated, treated and stabilized in the Emergency Department, the most severely injured are transferred to a key area where the slow, but gradual healing journey begins. The Cardiovascular Intensive Care Unit or CVICU admits patients with many different etiologies, but they all have the same need for intensive care. Even though the most serious trauma patients only make up about 20 percent of the total trauma population, it can still be a burden on the CVICU. Trauma care within the CVICU is centered on the life-threatening aspects of the injured patient; and the staff must focus on stabilization, monitoring and recovery of airway, breathing and circulation. Patients may be placed in the CVICU directly after their initial evaluation in the Emergency Department or they may come to the unit after undergoing surgery. The patient's time within the CVICU is dictated by the seriousness of the person's injuries and overall stability. Trauma care begins with EMS

and continues through the hospital until discharge, with the CVICU providing that vital need of intensive care management.

Daily multidisciplinary rounds foster the total care

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of the patient and family by identifying and fulfilling specific needs and highlighting where a certain care goal should be changed or modified. These rounds include registered nurse caring for the patient, trauma nurse practitioner, trauma social worker, dietitian, respiratory therapists, intensivist, trauma services personnel and medical director.

Information specific to trauma patients has been developed with the help of the trauma clinical specialist and the CVICU staff. The staff are able to offer a book, *Journey of Hope*, to families of brain-injured patients that educates them on terms and general plans of care for their loved ones. Another book, *Christopher Reeve Spinal Cord Injury*, holds similar information for patients and families dealing with spinal injuries.

Day-to-day care is constantly reviewed with the registered nurse, trauma surgeon, nurse

practitioner and specialty physicians on the case. This allows for prompt attention to new issues and changes to patient care. The CVICU enjoys a close working relationship with the trauma team personnel and this aids in providing an effective outcome for the patient.

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There are standards of care monitored by the team on a daily basis in the CVICU. These include Deep Vein Thrombosis prophylaxis, Cervical-spine clearance, Massive Transfusion Protocol, ThromboElastoGram, nutrition goals, transfer to specialty care and many others. The trauma care coordinators also collect data on the care and progress of these patients throughout the hospital. This data is then entered into the National Trauma Data Bank, and review of this data leads to constant improvements and revisions to care.

The status as a Level II Trauma Center at Memorial has impacted the CVICU in many ways, including staff education. One hundred percent of the CVICU registered nurses are



TNCC (trauma nurse core course) certified after one year of practice in critical care. Nearly 50 percent of our registered nurses are CCRN (critical care registered nurse) certified, and more than 10 of them have maintained that certification for over 20 years. We have seven registered nurses who have completed the ATCN (advanced trauma care for nurses) certification and that number will continue to grow.

As with anything, some registered nurses are more drawn to trauma care than others. Their reasons include everchanging and new practices, expanding knowledge base and integration of care in a multi-system injured patient population.

Those who've worked in CVICU before and after the Level II Trauma certification have seen a marked improvement in patient outcomes. It is very gratifying when a patient and family come back to visit and the patient has returned to the pre-injury way of life. Successful trauma care involves dynamic teamwork, and the CVICU is very dedicated to fulfill our role.



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SPRING SAFETY TIPS

- Check your smoke detectors. Practice your escape plan.
- Always wear an appropriate helmet for your activity.
 Know the rules of safety for each activity.
- Use caution when doing indoor/outdoor cleanup and repairs.
- If using a ladder, never reach beyond arm distance.
- Never allow children to ride with you on a mower, no matter How safe you think it is.
- Check playground equipment for wear and tear from the winter months.
- When transporting family and children to activities, remember to buckle up and put the phone away.
 Focus on the road and getting there safely.
- · Always apply sunscreen.

TRAUMA SYMPOSIUM ATTRACTS HUNDREDS TO HEAR ABOUT INNOVATIONS

Over 250 people attended the 12th Annual Trauma Symposium, presented by Memorial Leighton Trauma Center, on March 17 at the University of Notre Dame. Attendees included trauma/general surgeons, orthopedic surgeons, neurosurgeons, emergency physicians, anesthesiologists, intensivists, nurses, therapists, allied health and EMS personnel involved in providing trauma care.

The daylong event included interactive sessions and presentations that explored successful and innovative trauma care based in part on military and disaster experiences. The featured speaker was Jay Johannigman, M.D., director of Trauma and Critical Care at University Hospital in Cincinnati. A member of the U.S. Air Force Reserve, he served three tours in Iraq and Afghanistan. Three medical personnel—Robert Denton, R.N., Renee Denton, R.N., and Rusty Tinney—involved in the Joplin, Missouri tornado response in 2011 shared their insights and experiences about one of the single deadliest tornados in U.S.



Teresa Blake and Stephen Smith, M.D., at the 12th Annual Trauma Symposium

history. Other symposium speakers included neurosurgeon Andrew Losiniecki, M.D., of Memorial's North Central Neurosurgery and Thomas Large, M.D., orthopedic traumatologist, who provided medical aid to U.S. soldiers in Afghanistan.

The symposium's most poignant moment occurred near the end of the day when

South Bend gunshot victim, Teresa Blake, shared her harrowing journey from near death to recovery. Stephen Smith, M.D., of North Central Neurosurgery, introduced Teresa, who was shot in the head in December 2010 in downtown South Bend. Dr. Smith performed brain surgery that was instrumental in saving Teresa's life.



Raising Hope out of Tragedy

CASE STUDY: A TEEN'S LIFE DOESN'T END IN DEATH

The following is a review of a case within the Cardiovascular Intensive Care Unit (CVICU). These are the nurse's memories in caring for a young patient:

It's Monday morning. I notice the CCU monitors ... heart rate 180's, ICP 50's ... looks bad. Seventeen-year-old passenger, car accident ... driver ran a stop sign. This innocent girl took full impact ... t-boned by a semi. Everyone else walked away.

Looks like this patient will herniate soon. Indiana Organ Procurement Organization (IOPO) is already alerted. Lots of family here, nurses serious, concerned and quiet. (I say a silent prayer for the patient and family to give them strength.) Talk with assigned nurse and review patient's injuries: tragic motor vehicle crash. Many family members are present. I decide I need to meet early with the family and develop some kind of bond to help them through this if I can.

At 10 a.m., the patient becomes worse.
... Increased ICP, decreased CPP and the
neurosurgeon orders a cerebral flow study.
I have met and spoken with mom, aunt
and dad. Mom is weeping, in shock, but
remains hopeful. Dad is quiet, few words.
The aunt, "the rock," is here for her sister
and niece, trying to hang onto any little
vital sign that might indicate hope.

Many times within the CVICU the staff are faced with serious and emotional situations. They must not only be professional and technically confident to do the work, but they also must be sensitive to the needs of the family and empathetic to the overall situation. This patient is typical of some of our most serious head injured patients who need intensive care support while we wait and see the eventual outcome. Brain tissue swelling goes through a predictable pattern over the first 24-48 hours following the injury. This time waiting can be extremely challenging for both families and staff.



We depart to nuclear medicine for the cerebral flow study. The test shows no flow. She is legally dead. We're all very quiet, lost in our thoughts. It seems to take longer than usual for the radiology physician to receive the images for confirmation and diagnosis of no flow—brain death. More precious time this agonizing family must wait.

At the point of declaring the patient brain dead, the nurse who has built a bond with the family usually has already sensed their wishes regarding organ donation. The CVICU nurse can be instrumental in helping a family deal with the loss of a loved one and making a critical decision regarding donation. Designated requestor classes are offered to staff to train them in such situations. It is sometimes a very difficult concept especially with the young, isolated head-injured patients. Many times these patients look as if they are just sleeping with no other signs of injury; their hearts are strong and continue to beat; and

they are breathing with little effort. The best approach when communicating with a patient's family about organ donation is a unified team with the physician leading and support offered through chaplain services. Once a decision is made, then the coordination of donation can be just as labor intensive as the initial management of the trauma patient. Great care must be taken to support blood pressure and

oxygenation. A team from the IOPO is requested and the process to screen and match the donor and recipients begins. Families are given the choice of whether they want to wait out the process or say their goodbyes. The process can take many hours and can be very difficult for the families, but most find comfort in the thought that some good may come from a tragedy. Again, the CVICU staff and chaplain services support the family and

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are critical in the success of organ donation.

The IOPO process begins and continues through the night. Mom and dad ask and do stay the night with their daughter. ... Mom's wishes continue to be honored. Morning comes. My mind is consumed with this family at home and again on the way to work. What else can we do to help this family? A poem comes to mind: it's about parents losing a child. I've had it in my office about two years ... don't know where it came from. This family needs this poem. I arrive at work and talk with the staff nurse Denise, IOPO nurse Tammy and the family. I get the poem and make a copy, which I give to the mom's brother. I tell him to read it later and give it to mom and dad sometime later. ... Put it in your pocket for now.

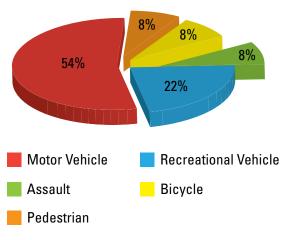
I wonder about what else we can do to help. Tammy the nurse from IOPO has been here all night for the family. ... She looks exhausted. There are other IOPO team members here to coordinate the donation process. Regretfully, I have to leave for the day due to an obligation. I say goodbye to dad, aunt and extended family. I approach the mom and hug her, telling her that her daughter has brought life to others today and her heart continues to live on.

A Closer Look:

TRAUMATIC BRAIN INJURY AMONG TEENS

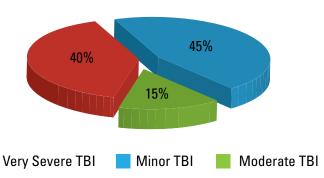
Traumatic Brain Injury in Older Adolescents
Age 15 – 19

Injury Mechanism



- No safety equipment used 55% of the time
- 62% females and 38% males

Injury Severity



- 6.7 mean ICU days
- 8.5 mean hospital days
- · Hospital disposition
 - 56% Home
 - 23% Rehab
 - 15% Death
 - 8% Long Acute Care

Source: Memorial Hospital Trauma Registry







ORGAN AND TISSUE DONATION -PROVIDING THE GIFT OF LIFE



One of the tragic facts associated with severe injuries is that for a certain percentage of patients, the injury is unrecoverable. In these cases, it is difficult for the family as well as staff to appreciate that any meaningful outcome can occur. When the health care team has exhausted the attempts to reverse a severe injury, donation of organs and tissues may be a possible outcome. This is especially true when the patient has previously expressed the wish to be an organ and/or tissue donor at the time of his or her death. The process of specifying wishes for donation in advance is called donor designation. There continues to be an immense need within the United States for organ donation. As of early March 2012, there were over 113,000 persons awaiting an organ transplant on the national listing. An amazing fact is that a single donor can potentially donate eight organs—heart, two lungs, liver, pancreas, the intestine and two kidneys.

The potential for tissue donation is even greater. Tissues that can be donated include bone, heart valves, veins, skin and corneas. One tissue donor may enhance the lives of more than 50 recipients.² For example, donated bone is used for reconstructive procedures including oral surgery, while donated skin benefits burn patients by providing a temporary skin replacement. Corneas can restore sight in a person with corneal blindness.

Organ donation most often occurs in those situations when a patient has sustained a severe brain injury, either primarily or secondarily, resulting in brain death. A

primary brain injury, such as a crushed skull or massive intracerebral hemorrhage occurs at the time of impact, while a secondary brain injury results from a subsequent insult, such as anoxia. Either circumstance can lead to brain death.

Organ and Tissue Donation after Cardiac Death

Some people with non-survivable brain injuries never progress to brain death because they retain some minor brain stem function. If such patients previously expressed an interest in donation or their families are interested, organ donation may still be an option. In a return to where organ donation began 40 years ago, before the acceptance of brain death, some patients are becoming organ donors after suffering cardiac death. This second option is sometimes referred to as "non-heart beating donation."

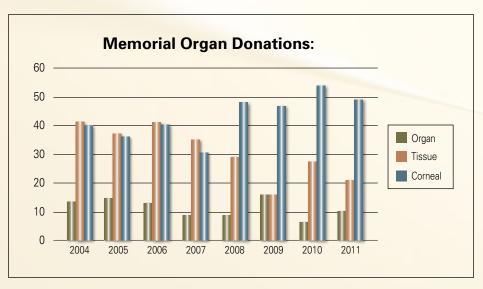
The option of donating organs following cardiac death is only offered to families after it is clear that their loved one cannot survive and they have made the decision

to withdraw support. Donation in such cases involves withdrawing support (including mechanical ventilation) typically in the operating room. Once the patient's heart stops beating, the physician declares the patient dead and organs are removed. Organ donation after cardiac death has increased the donation of life-saving organs—mostly kidneys and livers—by as much as 25 percent in a few areas of the country. Some experts estimate that it could increase the number of deceaseddonor organs in the U.S. by 30 percent.³

Memorial has participated in organ and tissue donation for many years. In 2011. Memorial facilitated donation for 11 organ donors, 22 tissue donors and 49 corneal donors.

References:

- 1. United Network for Organ Sharing. Donation and transplantation data. www.unos.org, accessed March 11, 2012
- 2. American Tissue Services Foundation. Tissue donation facts. www.atsfoundation.org, accessed March 12, 2012.
- 3. Steinbrook R. Organ donation after cardiac death. N Engl J Med. 2007; 357: 209-213.



TEVALUMYADISPATCH

So Long Sparky

LONG-TIME EMS MANAGER RETIRES

In this issue we want to spotlight a special member of the local EMS community who has also served statewide. Tom Nowacki, affectionately known as "Sparky," recently retired after 20 years as State EMS District Manager. Tom served in EMS for a total of 36 years. He resides in Mishawaka with his wife, Bethel.

Tom worked for one of the first private EMS providers in St. Joseph County at McGann's, where the hearse could be quickly converted to an ambulance when a call was received. Tom worked as a full-time EMT and also worked on the funeral side of the business between EMS calls.

In 1982, Tom was hired by Mishawaka EMS and he soon became an Advanced EMT working in combination with paramedic-staffed ambulances. Tom muses, "Call volumes averaged in the 4-5 *per day* range." During his tenure, Tom also served as a Master Diver on the city's Dive Rescue Team.

After years working for the city, Tom accepted a public education position with a private EMS provider in the Indianapolis area and then signed on with the state in 1991 as a northern-based EMS District Manager and Field Coordinator. He provided technical guidance to EMS providers, which required ambulance inspections of new rigs as well as making "unannounced" visits to keep on top of things from a state perspective.



Tom Nowacki and his daughter Kylie

Tom notes that he has had "a good run, and has really enjoyed what he did and hopes he made an impact." He has seen the evolution in prehospital care ranging from the hearse/ambulance delivery concept with basic EMTs, to fully staffed paramedic ambulance and fire engines, and the use of helicopters in the quick transport of trauma patients.

It's been an honor and a privilege to work with Tom. He has been a great resource to many who relied on his expertise to navigate within the state's EMS framework. We wish Tom well in his retirement, as well as on his next cruise.

EMS AGENCY SPOTLIGHT

Starke County EMS

We are featuring Starke County EMS as our provider this issue as they are making great strides in EMS delivery to their community.

Starke County EMS (SCEMS), which has 50 employees, began operations in 1980 as a BLS provider. It operates out of three bases located in North



(left to right) Paul Mathewson, EMS Director; Travis Clary, EMT; Aaron Krizmanich. Paramedic

Judson, Grovertown and Knox, with full-time crews at each base. Paul Mathewson, NREMT-P, is EMS director and Almuhannad Alfrhan, M.D., is the medical director. IU Health Starke Hospital is their sponsoring hospital. Dispatch services are provided through the Starke County Sheriff's Department 911 Center that utilizes Emergency Medical Dispatch protocols. First responders are an integral part of local response provided by volunteer fire departments. In 2011, SCEMS responded to over 3,000 calls for EMS service.

Paul has been busy the last seven months planning for the transition from BLS service to ALS service. With the support of the Starke County Commissioners and the County Council, along with IU Health Starke Hospital,



Paul has managed the process of acquiring a new ALS-certified ambulance and adding full and part-time paramedics. ALS operations began March 1, 2012, and the new ambulance operates 24/7 out of the SCEMS base in Knox. Starke County EMS now has ALS capabilities available countywide in a coordinated manner with the BLS teams. Building on the "foundation set in place by the hard work and dedication of Starke County employees," Paul is working to cultivate an environment of continuous improvement by providing the best EMS service for those in need.



SAVE THE DATE! SAVING LIVES SAFETY FAIR

Saturday, May 12 9 a.m. - Noon

South Bend Fire Department 1222 S. Michigan St., South Bend, IN Public is welcome!

- Car seat safety inspection
- Bike helmet fitting station
- Safety demonstrations
- Gun Safety
- Car Safety
- Smokehouse

