



ADULT LEVEL I  
TRAUMA CENTER  
ANNUAL  
REPORT

Engineering  
the *Future of*  
**Trauma  
Care**

June 2016



Providing unmatched trauma care  
to adult residents of eastern  
Wisconsin and beyond



**I**t has been 16 years since I arrived as Trauma Medical Director at the adult Level I Trauma Center at Froedtert & the Medical College of Wisconsin Froedtert Hospital. During that time, people have come and gone, but the Trauma Center has remained a constant. We have built a culture of excellence for injured patients in our community and throughout Wisconsin. Our hospital staff and Medical College of Wisconsin faculty participated in drafting and maintaining our statewide trauma plan. Members continue to serve on the Statewide Advisory Council as well as on our own Regional Trauma Advisory Committee. Members of our program are reviewers for the maturing state program and also serve as reviewers for the national American College of Surgeons Committee on Trauma. This places our program in a position to review and comment on any changes in trauma center verification criteria.

We used a generous donation from the Lunda family honoring Mr. and Mrs. Milton Lunda to sponsor a statewide meeting for trauma centers. This meeting occurs every May, the month designated as National Trauma Awareness Month. Trauma centers in Wisconsin have been involved since 2004, when the meeting location began rotating among the various trauma centers in LaCrosse, Madison, Marshfield and Neenah, in addition to Milwaukee. In 2015, the group marked its 35th anniversary.

Our Trauma Center is one of the providers of the Advanced Trauma Life Support Course (ATLS) with courses offered about six times a year. ATLS provides a care system for severely injured patients. The course is aimed at educating primary providers including advanced practice nurses who practice in smaller communities. A companion course for nurses, Advanced Trauma Care for Nurses, is given twice yearly in concert with the ATLS course. This combination helps develop teamwork among all providers caring for injured patients.

In collaboration with numerous other MCW faculty, our trauma team has helped foster research in the resuscitation of injured patients. We have collaborated with other Level I Trauma Centers across the nation in a number of National Institutes of Health-sponsored studies to advance our knowledge of injury. Trauma surgeons, emergency medicine physicians, family medicine physicians and basic researchers helped design and develop the MCW Injury Research Center, which has become a valuable resource for our local and state trauma system.

We invested in different approaches for injured patients and were one of the first trauma programs across the nation to add a psychologist. This has led to a better understanding of post-traumatic stress disorder (PTSD) in our injured population. Our Trauma Center is now considered a leader in PTSD management as well as research on this topic.

As I get ready to pass the leadership baton, I realize it has been a great run. In 2016, we accomplished our sixth reverification survey as an adult Level I Trauma Center. I am confident that we will pass with flying colors. My confidence comes from the fact that many years ago, we started a system of care that transcends any individual or medical specialty. We have developed a team of professionals who place patients first without fail. Recognizing that trauma care is time dependent, our trauma staff are always immediately available and treat all injured patients with equity. Our team is dedicated to effective and efficient care based on the best available evidence. We are your adult Level I Trauma Center team at Froedtert Hospital. I am proud to have been a member.

Thank you all for letting us serve our community,

**John Weigelt, MD, DVM, MMA, FACS**

*Milton & Lidy Lunda/Charles Aprahamian Professor of Trauma Surgery; Chief, Division of Trauma/Critical Care*

# The Facts

**Every 90 seconds:** One person treated for a traumatic injury

**45 million:** Lack access to a Level I Trauma Center within 1 hour of injury, when treatment means life vs. death



**1 in 4:** More likely to die if not treated at a Level I Trauma Center within 1 hour of injury

**25 percent:** Reduction in death rate for severely injured people treated at a Level I Trauma Center



**1 in 5:** More likely to survive traumatic injury in a state with an established trauma system

Sources, U.S. statistics: [nationaltraumainstitute.com](http://nationaltraumainstitute.com); [meps.ahrq.gov](http://meps.ahrq.gov); [traumacenters.org](http://traumacenters.org); [amtrauma.org](http://amtrauma.org)



**W**hen people in eastern Wisconsin experience traumatic injuries — from a fall, a car crash or other activities that cause injury — they have a better chance of recovering thanks to the Froedtert & the Medical College of Wisconsin adult Level I Trauma Center at Froedtert Hospital.

Research published in the *New England Journal of Medicine* (N Engl J Med 2006;354:366-78) shows that severely injured trauma patients treated at Level I Trauma Centers have a 25 percent reduction in mortality compared with people who are not treated in a trauma center. Yet, 45 million people in the United States lack access to a Level 1 Trauma Center within an hour of injury. That's roughly equivalent to the populations of Arizona, New Mexico, Texas, Louisiana, Mississippi and Alabama combined. This is a tremendous gap, given that trauma is the leading cause of death in people younger than age 45 and the fourth leading cause of death in all ages. Falls are the largest mechanism of injury at 40 percent of all injuries, largely in children and the elderly. The *New England Journal of Medicine* study underscores how fortunate we are to have an adult Level 1 Trauma Center at Froedtert Hospital.

The Level 1 Trauma Center designation means trauma surgeons, emergency medicine physicians, orthopaedic surgeons, neurosurgeons and a host of other specialists stand ready to treat injured patients 24 hours a day, 365 days a year. It means we have nurses who are trained specifically to care for trauma patients, along with all the equipment and support staff readily available.

To ensure that our Trauma Center team delivers the very best care, we undergo a site review every three years by the American College of Surgeons Committee on Trauma and participate in the Trauma Quality Improvement Project (TQIP), spearheaded by the American College of Surgeons.

Our Trauma Center is staffed by nationally recognized leaders, the very people who help shape best practice guidelines at a national and state level. We are members of national trauma organizations including the Trauma Center Association of America, an organization of high-performing trauma centers in the country who share best practices and assist in lobbying efforts to improve trauma patient care delivery.

Traumatic injuries can happen in the blink of an eye. The good news is that when patients need us, our Trauma Center team is ready with top-notch experts, providing comprehensive specialty care that makes a difference.

**Annette Bertelson, BSN, RN, CPHQ**  
*Trauma Program Manager*



**Annette Bertelson,**  
BSN, RN, CPHQ

# Beating the Odds

**J**ason Pansier knows firsthand the benefits of having a Level I Trauma Center in eastern Wisconsin.

Last year, Jason, 37, nearly died in a brutal tractor roll-over on his family's farm in DePere, Wisconsin. His amazing return to health reveals much about his spirit — and about the unmatched expertise at the adult Level I Trauma Center at Froedtert & the Medical College of Wisconsin Froedtert Hospital. The Trauma Center team is committed to using the latest research to inform care, giving patients the best shot at resuming their lives after traumatic injuries.

On the afternoon of July 8, 2015, Jason was using a 450-horsepower tractor to build a manure storage pit on the farm he owns with his family. He was driving down a tall dirt mound when the tractor tipped, coming to rest upside down on the cab where he sat. The cab crumpled under the weight of the massive machine, crushing Jason's pelvis and left leg. His uncle called 911, and emergency medical services providers responded quickly. Firefighters from the local fire department worked for almost two hours to free Jason.

Jason stayed awake throughout the ordeal, aware that he was bleeding heavily. "I knew that if I was going to make it, I had to stay calm," he remembered. When a tow truck finally lifted the tractor away from his body, Jason was flown by helicopter from the farm to a Green Bay hospital, where physicians attempted to stabilize him, but the bleeding was difficult to control. They gave him numerous units of blood before flying him by helicopter to Milwaukee to be treated at the adult Level I Trauma Center at Froedtert Hospital.

## A TEAM PREPARED TO SERVE

When Jason landed in Milwaukee in the early morning hours of July 9, the Trauma Center team was ready, as it is 24 hours a day,

every day of the year. When a patient arrives, trauma surgeons take the lead. They assess injuries, attempt to stabilize the patient and decide the order in which injuries should be treated.

"Jason had lost a lot of blood and had a complex open wound in his left hip and pelvis area," said trauma surgeon Jeremy Juern, MD, FACS. "He could not breathe on his own and required many more units of blood — in addition to those he received in Green Bay — to compensate for all he had lost." The Trauma Center team stabilized him enough to move him to the operating room and address his injuries. Given the extent of Jason's injuries, "a lot of us were involved with his care," Dr. Juern added.



Jeremy Juern, MD, FACS

To receive the adult Level I Trauma Center designation, a hospital must establish a comprehensive program to treat severely injured patients. In addition to trauma surgeons, this team includes orthopaedic surgeons and a host of additional surgical and other specialists who are available around the clock.

Soon after he arrived, orthopaedic surgeons amputated Jason's badly damaged left leg below his pelvis. But in the hours and days that followed, much of the bone and muscle above the amputation became infected and died, due to the substantial wound on his pelvis, which exposed bone and tissue to air and disrupted blood flow.

The Trauma Center team brought Jason back to the operating room many times during that period to remove the dying tissue. "It took a while to get on top of his injuries, so it was a matter of re-evaluating the game plan every single day, with all of our colleagues involved in decision-making," Dr. Juern said. Those

colleagues included orthopaedic surgeon John C. Neilson, MD, urologist Amy Guise, MD, and plastic surgeon John LoGiudice, MD. Ultimately, Dr. Neilson performed a hemipelvectomy, removing the entire left side of Jason's pelvis.



**John C. Neilson, MD**

### EXPERTISE IN COMPLEX PROCEDURES

A hemipelvectomy is a rare procedure, but surgeons at Froedtert Hospital perform several each year. For Jason, that expertise made a difference. "He started to get better almost immediately, because his body didn't have to fight off all that potential infection," Dr. Neilson said. Dr. Juern also performed a loop colostomy to temporarily route wastes away from Jason's abdomen and pelvis

while they healed. (The colostomy was reversed in Dec. 2015.) The wound was too inflamed to close at first, so the team used a vacuum device to keep it sterile. Cleaning the wound required operating room visits every few days. Eventually, the wound healed enough that Dr. Neilson could stitch it closed.



**John LoGiudice, MD**

Jason's other injuries included fractures in the tibia and fibula of his right leg, which Dr. Neilson repaired with a plate and screws. A second vacuum dressing protected the open wound on his right shin, where tissue had sheared off in the tractor roll-over. More than three weeks passed before Jason was stable enough for Dr. LoGiudice to perform a microvascular flap surgery on his shin. In this painstaking,

six-hour procedure, Dr. LoGiudice transplanted a section of skin, including blood vessels, from Jason's thigh to his lower leg.

The blood vessels are key to ensuring transplanted tissues and adjacent body parts (in Jason's case, his ankle and foot) receive the blood supply they need to remain healthy. "The blood vessels are very small, about 2 millimeters each, so we needed a microscope to attach and repair them using tiny sutures the thickness of a single strand of hair," Dr. LoGiudice explained. Because Jason's left leg was amputated, Dr. LoGiudice and his colleagues felt particular pressure to ensure that his right leg was functional. "There was a lot at stake for him," Dr. LoGiudice said.

Microvascular flap surgeries are performed sporadically at most hospitals, but Dr. LoGiudice and his team conduct them on a weekly basis. "We knew within 24 hours that Jason's surgery was a success. Blood was flowing well through the newly joined blood vessels, allowing his right leg to begin to heal," Dr. LoGiudice said.

### LEARNING TO MOVE AGAIN

After more than six weeks in the hospital, Jason was finally well enough to begin working with David Del Toro, MD, physical medicine and rehabilitation specialist.

"Prior to his accident, Jason was a very robust, fit individual. But he became someone who couldn't get out of bed on his own; he required two people to help him go from lying down to

getting in a wheelchair," Dr. Del Toro said. Early therapy was limited by his healing wounds. "For example, because of the fractures in his right leg, he couldn't put any weight on that leg, so he couldn't do any standing or pivoting," Dr. Del Toro recalled.

Dr. Del Toro introduced Jason to a "slide board," usually used by spinal cord injury patients who can't use their lower limbs and must rely on their arms to move around. The slick board reduces friction, allowing a patient to ease his body from one spot to another. Jason began to use the board and could soon move across the bed with minimal assistance, which Dr. Del Toro called "a sentinel moment." After this victory, Jason was moved from an inpatient unit to the inpatient rehabilitation center.



**David Del Toro, MD**

With intensive rehabilitation, he continued to make fast strides, mastering important tasks like moving himself out of bed and into a wheelchair. On Sept. 5, more than eight weeks after the tractor incident, he was strong enough to go home. "I think that speaks to his motivation and level of endurance," Dr. Del Toro said. "Because he was so motivated, he learned very quickly." Jason also gives credit to his

fiancé, Angela Milan, a military veteran and exercise therapist, who kept Jason on task with physical therapy exercises and handled his care after his return home.

Throughout Jason's recovery, neighbors and friends also provided support, helping with projects including building the wheelchair ramp up to his front door. He continued physical therapy at home and now returns to Froedtert Hospital for regular follow-up appointments with Dr. Juern, Dr. Neilson and other specialists from his care team. By January 2016, Jason had regained enough strength in his right leg to be fitted with a left leg prosthesis, which he is learning to use. He has resumed work on the farm and has even driven a tractor again. He is slowly returning to body-building, one of his hobbies before the accident. "One of my goals is to be as strong or stronger than I was," he said. "I have a ways to go, but I'm starting again."

Reflecting on his time at Froedtert Hospital, Jason is awed by the expertise and friendliness of his doctors and nurses. "They were so nice, so human and personal," he said. Angela, who has witnessed Jason's entire journey since the tractor roll-over, said the Froedtert team was committed to getting Jason back to his life. As Jason healed, Dr. Juern and Dr. Neilson were particularly skilled at helping him look ahead to his future, in part by keeping him goal-oriented, she said. "They would say, 'If you can do this in the next four days, we can move you on to the next step,'" Angela remembered. "They really understood how to motivate him."

Jason's doctors are inspired by his progress and proud of the group effort that helped him recover. "Jason's case is a great example of the comprehensive care we provide at our Level I Trauma Center," Dr. Juern said. "There are not many hospitals that can provide the A-to-Z services we offer, with a true, multispecialty team effort."

# Studying Patient Data to Improve Trauma Care

To ensure that patients in the adult Level 1 Trauma Center at Froedtert & the Medical College of Wisconsin Froedtert Hospital receive the best care possible, the Trauma Center participates in the Trauma Quality Improvement Program (TQIP) developed by the American College of Surgeons Committee on Trauma.

TQIP involves collecting data related to each patient treated at a trauma center, such as a patient's age, gender, information about injuries, pre-existing health problems, and if the patient had unplanned readmissions to the hospital. These details are entered into a database, analyzed and compared with other adult Level 1 trauma centers of a similar size, with similar patient populations. The goal is to identify the Froedtert & MCW Trauma Center's treatment successes and any areas where the team could improve.



David Milia, MD

"By nature, trauma is a very complex disease, and because trauma is a dynamic, changing field with emerging technology, it's important to accurately capture as much data as possible on our patients and their outcomes," said trauma surgeon David Milia, MD, who works

on the TQIP program with trauma program manager Annette Bertelson, BSN, RN, CPHQ, and her team. Data collected for these purposes is "de-identified," meaning that all identifying details about individual patients are removed.

Readmission rates represent a quality measurement that is closely tracked. Low readmission rates are seen as beneficial, in part, because return visits can be triggered by problems that may be preventable, such as infections patients contract while in the hospital the first time.

But, Dr. Milia noted, readmissions statistics don't always tell the whole story. For example, readmissions can't always be prevented, and some patients avoid readmission through longer hospital stays. "It's important for us as physicians and researchers to provide accurate data as well as our sentiments about the big picture," he said. The topic of readmissions needs further study, he added.

TQIP is a valuable tool for the Trauma Center team, Dr. Milia said. Studying these data closely "ensures we're providing the most up-to-date, safest care to our patients in a changing environment," he said. "By participating in TQIP, we improve our practice based on data, not just anecdotes and our most recent patient cases."

## How Data Changed Spleen Injury Care

Monitoring solid organ injuries — including damage to the spleen, liver, kidneys and pancreas — is one of the top tasks of the Froedtert & the Medical College of Wisconsin adult Level I Trauma Center team. Spleen injuries are especially common in trauma patients. "The spleen is a little more mobile in the abdomen, and it's more likely to get bumped around," said trauma surgeon David Milia, MD.

When a patient arrives in the Trauma Center, surgeons quickly check the state of the spleen and other organs, thanks to advances in diagnostic tools, including computed tomography (CT). Evaluating the internal organs once involved a trip to the operating room. If a patient's spleen was damaged and bleeding, surgeons generally removed it.

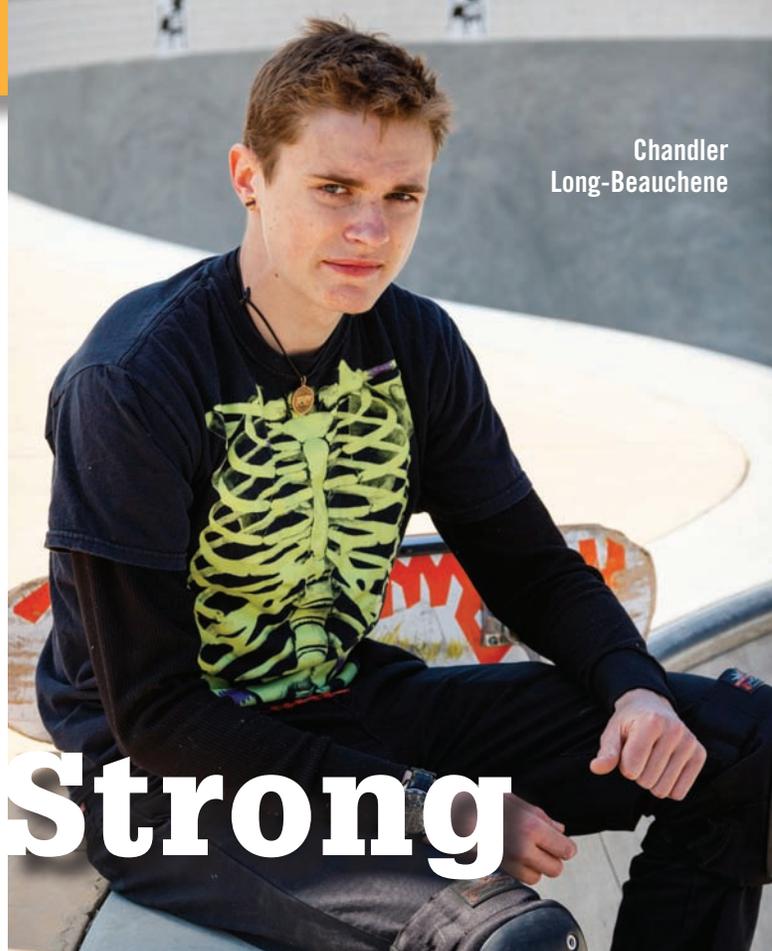
But research has revealed that it is no longer imperative to remove or repair damaged organs. "We've found that most solid organ injuries of the spleen, liver and kidneys will stop bleeding on their own," Dr. Milia said. "Often, we observe patients carefully in the ICU or on the trauma floor, taking them to the operating room only if they show evidence that they are clinically unstable."

Based on diagnostic imaging, organs are rated according to their level of injury, with "1" being the lowest level of damage and "5" being the most severe. The Trauma Center team records these ratings and other data about every solid organ injury the team treats. All identifying details about individual patients are removed from the data.

The data is later fed into the National Trauma Database and analyzed to spot patterns. The American Association for the Surgery of Trauma periodically reviews the numbers to determine how patients with solid organ injuries fare without surgery.

These findings are used to inform patient care. "We can tell our patients if they have a grade 1, 2, 3, 4 or 5 injury. We can also tell them how likely they are to avoid a trip to the operating room," Dr. Milia said. The available data not only allows patients to avoid unnecessary surgery, he said, but it also keeps their organs intact when possible.





## **J**uly 11, 2015 changed everything for Chandler Long-Beauchene.

After working security at Bastille Days in downtown Milwaukee, he met a friend to enjoy the festival until catching a bus home around 10:30 p.m. He got off a few blocks from the house he shares with his parents in Milwaukee and jumped on his skateboard for the short ride home. But he never arrived.

A motorist ran a stop sign and hit Chandler head on; a security camera showed a car driving away with a badly damaged windshield and hood. Chandler lay in the road, unconscious and bleeding, until a group of women spotted him, called 911 and stayed with him until paramedics arrived.

When Chandler reached the adult Level I Trauma Center at Froedtert & the Medical College of Wisconsin Froedtert Hospital, he was deeply unconscious, with a severe traumatic brain injury, damaged spleen and broken jaw among his many injuries.

# Coming Back Strong

## After Traumatic Injury

### **BOOSTING CHANCES OF A POSITIVE OUTCOME**

The Trauma Center team immediately placed Chandler on a ventilator. “Our initial goals were to keep him oxygenated, avoid further brain injury and figure out if and when he would need surgery for his broken bones,” said trauma surgeon Jeremy Juern, MD, FACS.

Neurosurgeon Christopher Wolfla, MD, placed a device to monitor pressures inside Chandler’s skull. A traumatic brain injury can cause the brain to swell, limiting blood circulation in the brain. Chandler also received IV medications to ease intracranial pressure. “His pressure was pretty well controlled,” Dr. Juern said, “which likely aided his recovery.”



**Arlen Denny, MD**

Because Chandler had a variety of injuries, the Trauma Center team collaborated with many other specialists, including plastic and reconstructive surgeon Arlen Denny, MD, and craniofacial fellow Kristen Klement, MD. As members of the facial trauma team, they focused on Chandler’s jaw, which was broken in four places.

“Six days into his hospitalization, he had stabilized enough that we could safely take him into the operating room.”

Dr. Denny said. They repaired Chandler’s broken mandible and temporarily wired his jaw closed to stabilize fractures in his temporomandibular (TMJ) joint.

### **HELPING A BRAIN HEAL**

In the intensive care unit (ICU), Chandler was visited by Mary Voegeli, APNP, CRRN, a nurse practitioner with expertise in traumatic brain injury. Mark Klingbeil, MD, medical director of Neurorehabilitation Medicine, said his team is skilled at judging possible outcomes for patients with traumatic brain

injury. They consider factors such as the patient’s Glasgow Coma Score (a measure of how deeply unconscious a patient is when he or she arrives at the Trauma Center), how long he or she was unconscious, as well as intracranial pressure and age. Younger patients tend to have better outcomes, and in Chandler’s case, “we were optimistic,” Dr. Klingbeil said. But Chandler still had a long road ahead.

### **REHABILITATION AFTER TRAUMA**

More than two weeks after the incident, Chandler moved to Froedtert Hospital’s acute rehabilitation inpatient floor. “We saw Chandler was progressing well enough that he would benefit from acute rehab,” Dr. Klingbeil said. There, Chandler worked several hours daily with physical, occupational and speech therapists.

He was discharged home on Aug. 13 and continued outpatient therapy at Froedtert Hospital, visiting the Traumatic Brain Injury Clinic for follow-ups. In November 2015, Dr. Klingbeil approved Chandler’s return to work.

Given the complexity of his injuries, Chandler was well-served by the collaborative approach of the adult Level I Trauma Center. “I’m confident that no other hospital in southeastern Wisconsin could have handled him the way we did,” Dr. Juern said.

Chandler does not remember getting injured, or most of his time at Froedtert Hospital. (Amnesia is common in patients with severe traumatic brain injury.) He is working with doctors to address lingering problems with focus. Yet, he recently started courses at Milwaukee Area Technical College to become a paramedic, a goal that arose from his interactions with Froedtert & MCW physicians and staff. “They do their best to give you the best care possible,” Chandler said.



# Attentive Care After a Fall

Norva McCutcheon

**O**ne afternoon in February 2015, Norva McCutcheon stopped at a Shorewood supermarket, but discovered the store didn't have the three items on her shopping list.

The Glendale resident left the store empty-handed and headed toward her car, thinking about her next errand.

What happened next is a confusing jumble in Norva's mind. She remembers sirens and feeling very nauseated. She opened her eyes briefly to find herself in an ambulance and then woke again at Froedtert & the Medical College of Wisconsin Froedtert Hospital. "A doctor came over to me and said, 'Tell me what happened.' I said, 'I really don't know.'"

The paramedics and a police report helped fill in the blanks. As she crossed the supermarket parking lot, Norva was struck by a car. She fell, hit her head on the pavement and lost consciousness.

Because she was unconscious (a symptom of traumatic brain injury), and she is a senior citizen (Norva was 78 at the time), paramedics followed State of Wisconsin trauma field triage guidelines and transported her to the adult Level I Trauma Center at Froedtert Hospital.



Thomas Carver, MD

"When elderly patients who have experienced trauma are cared for at Level I Trauma Centers, they have better outcomes than they might in other settings," said trauma surgeon Thomas Carver, MD. That's due, in part, to the specialized care and close monitoring offered at a Level I Trauma Center.

### ASSESSING HER BRAIN INJURY

A computed tomography (CT) scan of Norva's brain confirmed that she had experienced a mild traumatic brain injury, also known as a concussion. The doctors opted to keep her overnight for observation. "We monitor patients to make sure their mental status doesn't

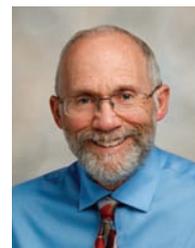
change, and that they don't have a worsening of symptoms," Dr. Carver said. The team also used several sutures to repair a severe laceration on the left side of Norva's scalp.

The next morning, Norva was bruised and swollen, but healthy enough to return home with her husband. Both were wowed by the kindness and caring of the physicians, nurses and other staff they encountered. "They were efficient and very, very gentle," Norva remembered. "It was one person after another taking care of me and being so calm and kind."

Based on her experience, Norva decided to transfer all of her medical care from another health system to the Froedtert & MCW health network. "I was only there overnight, but before the week was up, I transferred all of my medical records," she said.

### FOLLOW-UP CARE

A few weeks later, Norva returned to Froedtert Hospital for a follow-up appointment at the Traumatic Brain Injury Clinic. She saw Mark Klingbeil, MD, medical director of Neurorehabilitation Medicine, as well as neuropsychologist Lyndsay Nelson, PhD,



Mark Klingbeil, MD

who checked that Norva's behavior, memory and attention had returned to normal. "Typically, we see patients two to three weeks after injury to see that their heads have cleared, and they're able to go back to normal activities," Dr. Klingbeil explained. "Based on cognitive testing, Norva had an excellent recovery from her concussion." The confusion she had experienced the day of the incident was gone.

Norva was recently telling a friend about her Trauma Center experience. "I told her, 'Even out of bad things, good can occur,'" Norva said. "It led us to switch our health care to Froedtert, and that's been fabulous."

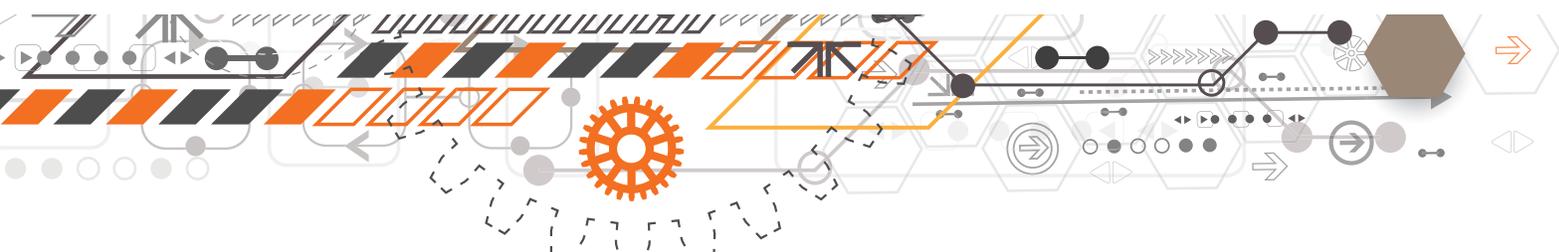
# Specialty Care for Trauma Patients

**A** life-saving advantage of being treated at a Level I Trauma Center is access to a full complement of surgical specialists available 24 hours a day, 365 days a year.

“Our multiple specialists treat complex injuries with a high degree of expertise,” said head and neck surgeon Michael Stadler, MD. “Our seamless teamwork and communications are also key. Trauma patients often have multiple injuries requiring more than one trip to the operating room, and we coordinate with all of our teams to make sure the patient gets the best, most efficient care.”

This model depends on cooperation and collaboration across disciplines. “That’s how we work on a day-to-day basis, so when patients are critically ill or critically injured, we are used to working together,” said vascular and interventional radiologist Robert A. Hieb, MD, RVT, FSIR. “We’re used to obtaining input from others, and we don’t make decisions without taking advantage of another practitioner’s expertise.”

Below are a few of the specialties that collaborate on behalf of severely injured patients at the adult Level I Trauma Center at Froedtert & the Medical College of Wisconsin Froedtert Hospital.



## FACIAL TRAUMA

This team includes ear, nose and throat specialists, as well as oral surgeons and plastic and reconstructive surgeons. Team members typically treat severe cuts and other injuries to the soft tissues of the face, and fractures of the facial bones. “Many of our patients have complex lacerations around the eyes, the nose, ears or mouth,” Dr. Stadler said. “The majority of bony injuries are jaw fractures or mid-facial fractures, including fractures of the orbit and cheekbones.”

## OPHTHALMOLOGY

This team focuses on injuries in or around the eye and involves three different groups of specialists on call at all times: surgeons with expertise in the front segment of the eyeball, those who focus on the back of the eyeball and oculoplastic surgeons. “In oculoplastics, we deal with injuries that affect the eyelids, the tear ducts and the bones surrounding the eye,” said Gerald Harris, MD, chief of Orbital and Ophthalmic Plastic Surgery. These surgeons often address soft tissue lacerations that involve the delicate tear ducts, repairs that require a trip to the operating room and stenting to ensure that the patient doesn’t experience excessive tearing.

## ANESTHESIOLOGY

The anesthetic care of injured patients is provided by a team of highly experienced trauma anesthesiology physicians who are skilled at rapidly assessing and treating patients heading into surgery. “When patients who have sustained serious injuries or shock arrive, seconds count. They need emergent major operations, massive blood transfusions and sophisticated resuscitative efforts,” said Olga Kaslow, MD, PhD, director, Division of Trauma Anesthesia. She added that the adult Level I Trauma Center at Froedtert Hospital stands apart from other institutions because of the high level of expertise and close collaboration among anesthesiologists and other trauma specialists. Most of team’s trauma anesthesiologists belong to the Trauma Anesthesiology Society, an international body

Dr. Kaslow helped found. This gives the team access to the expertise of fellow trauma anesthesiologists around the world. “Our particular trauma anesthesiology group is very involved with the latest evidence-based treatments,” Dr. Kaslow said. “It distinguishes us as leaders in clinical, research and education efforts related to anesthesia care for trauma patients.”

## DIAGNOSTIC RADIOLOGY

These specialists usually work “behind the scenes, and we never see patients in person,” said Ross M. Cerniglia, MD, radiologist and trauma liaison. Yet, they provide fast, accurate interpretation of diagnostic images that trauma surgeons often need to determine next steps in a patient’s care. Dr. Cerniglia specializes in trauma X-ray, while a separate division focuses on computed tomography (CT) scans of the chest, abdomen and pelvis. A third division focuses on neuroradiology, or images of the central nervous system, head and neck. This division of labor benefits patients, Dr. Cerniglia said. “You’re getting someone with specific advanced training and more experience interpreting those exams, because that’s all they read,” he said. “They are also more up-to-date on current literature and research specific to their particular fields.”

## VASCULAR AND INTERVENTIONAL RADIOLOGY

This group of highly specialized radiologists performs minimally invasive, image-guided procedures to diagnose and treat a variety of blood vessel injuries. Through the Trauma Center’s acute care service, these specialists often see patients with acute bleeding problems following surgery. “We evaluate the patient, review the imaging, and if there is something we can do via endovascular therapy, we embolize the source of the bleeding with a variety of agents, such as coils or other devices,” said Robert A. Hieb, MD, RVT, FSIR, vascular and interventional radiologist. He and his colleagues also work to halt bleeding from arteries damaged in pelvic fractures and consult in cases of traumatic aortic injury, performing repairs collaboratively with the Vascular Surgery team.

# Trauma Center Snapshot

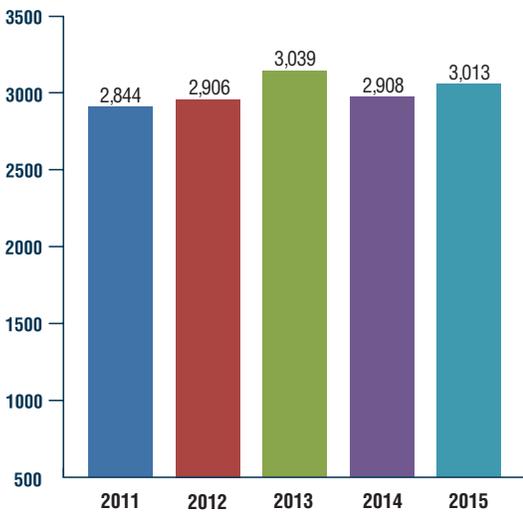
Patient data for 2015 provides a picture of traumatic injury in our community.

## RACE AND GENDER SUMMARY

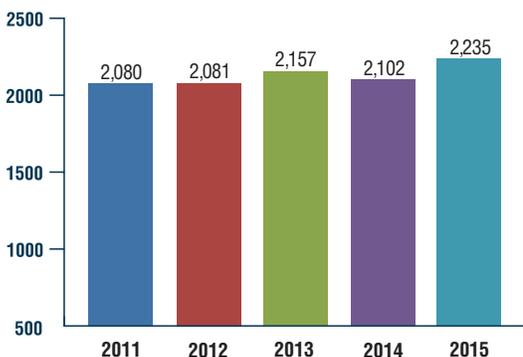
Race	Female	Male
African-American	176	490
American Indian	1	1
Asian	15	16
Caucasian	574	811
Hispanic	12	51
Native Hawaiian	2	2
Other	16	68
<b>Total</b>	<b>796</b>	<b>1,439</b>

**Total # of Patients Admitted: 2,235**

## NUMBER OF PATIENTS SEEN

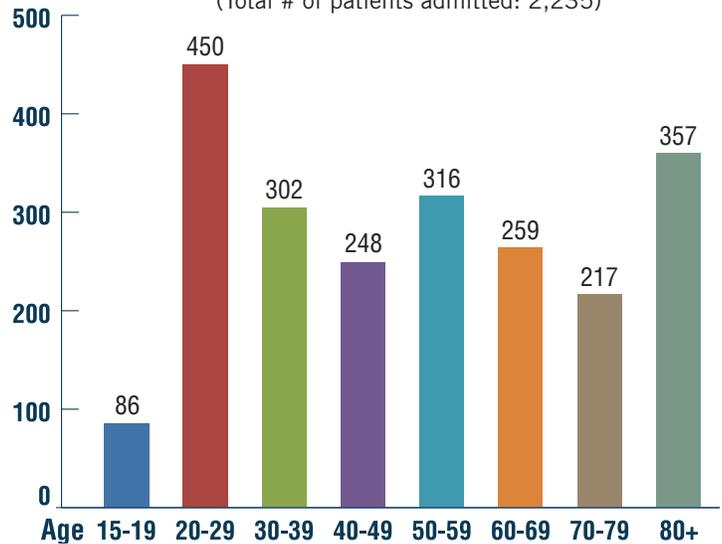


## NUMBER OF PATIENTS ADMITTED



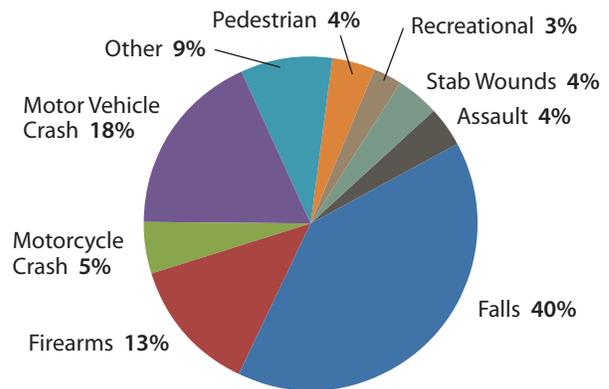
## AGE GROUPS

Until age 70, males suffer traumatic injury significantly more often than females. In the 20-29 age group, men outnumber women by about three and a half to one. (Total # of patients admitted: 2,235)



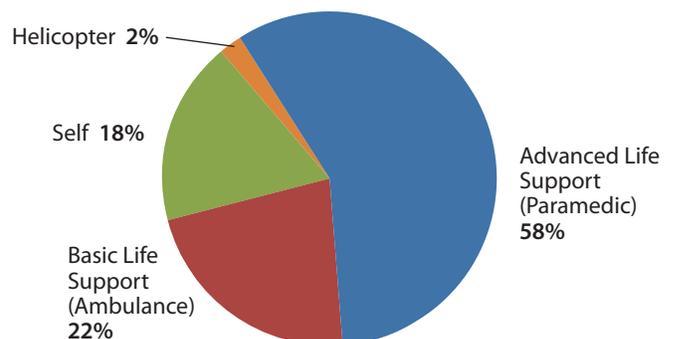
## MECHANISM OF INJURY

Patient admissions due to falls surpassed admissions from other causes. (Total # of patients admitted: 2,235)



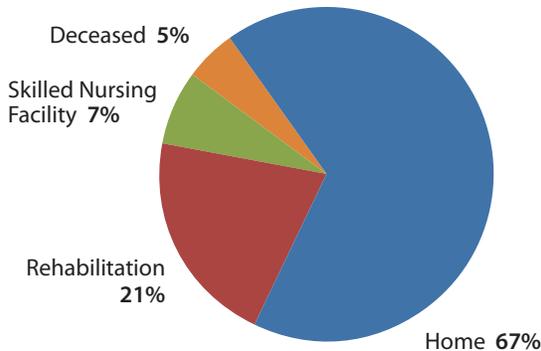
## TRANSPORT METHOD FROM INJURY

Most patients arrived at the Trauma Center via advanced life support. (Total # of patients admitted: 2,235)

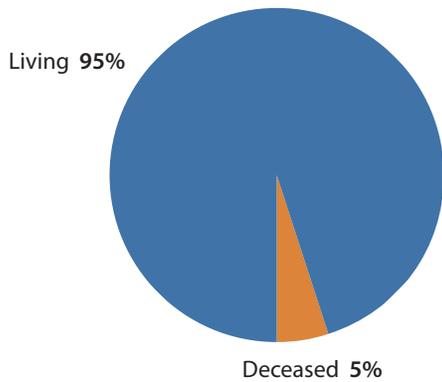


## PATIENT DISCHARGE DESTINATIONS

More than two-thirds of all trauma patients admitted to the hospital go directly home.  
(Total # of patients admitted: 2,235)

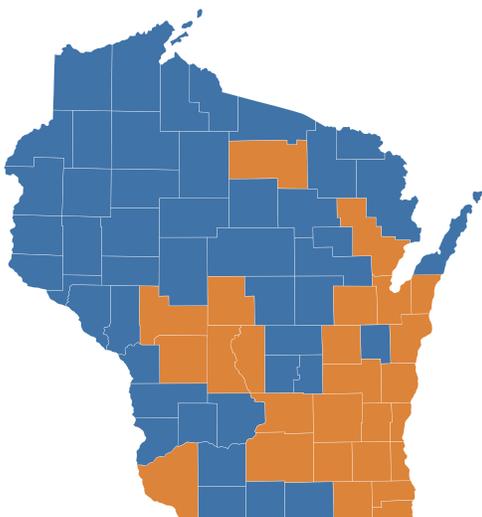


## PATIENT OUTCOMES



## WHERE PATIENTS COME FROM

In 2015, the Trauma Center provided critical care to patients from the following Wisconsin counties:



## 2016 TRAUMA CENTER STAFF

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### TRAUMA LIAISONS

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What Is Possible in trauma care starts here.



ADULT LEVEL I TRAUMA CENTER  
ANNUAL REPORT

# Engineering the Future of Trauma Care

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